

Zoo-technical characteristics of Koshur goat

An unexplored goat genetic resource of Kashmir

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Non-descript local Kashmiri goat is medium sized goat distributed in hilly tracts of Shopian, Kulgam, Tral, Budgam, Baramullah and Kupwara. There is not a single goat breed in Kashmir region. These goats are reared as multipurpose animals and are a great resource to the farmer. The breed has not been identified and characterized as a separate breed yet. This goat of Jammu and Kashmir possesses unique traits of adaptability, fecundity, prolificacy and disease resistance. This goat has promising potential for both milk and meat, and is well adapted to agro-climatic conditions of the region. The females of this unknown population is having well developed udder with long and conical teats. The milk yield (MY/D) and lactation length (LL) of these goats ranges 0.50-2.25 kg/day and 6-8 months, respectively. Farmers prefer goat milk as compared to cow milk which is an indicator of the potential market for goat milk in its breeding tract. The predominant body colour observed was brown (26.88%) goats (N=50) followed by white and brown in 24.73% and 15.05% goats, respectively. Spotted and goats having mixed colours are also present. These goats are preferred to be reared under backyard goat keeping system; hence, it has good contribution in women empowerment and family income.

Keywords: Backyard goat rearing, Meat, Milk, Non-descript Kashmiri goat

GOATS are easy to manage and maintain owing to their small size and they can sustain wide range of agro climatic conditions. Goats significantly contribute to the agrarian economy and play a vital role in the livelihood security of the small and marginal farmers and landless labourers. Their small size compared to cattle and buffaloes permit them to be maintained in a limited area. Goats consume a wide variety of grasses, weeds, herbs, bushes, shrubs, tree leaves and crop residues that would otherwise go waste and cause pollution. Goat is an efficient converter of the sparse vegetation available in wastelands, community grazing lands and tree leaves into milk, meat, skin manure, and fibre. Goats are considered as moving refrigerators as they can be

milked any time of the day.

Goat rearing is not new to livestock genetic resource for Jammu and Kashmir but it has been practiced from times immemorial. The recovery of tool made from bones of domestic sheep and goat during excavation at Gufkral, Pulwama located 35.54 L and 75.60E 41 km from Srinagar proves that goat rearing has deeproot in Kashmir. Lawrance (1895) has mentioned in his book that goat skin fetched one rupee in the mountains and tax on goats for the summer grazing in Kashmir was only ₹ 5 per hundred goats. During recent times, many goat breeds were imported for up-gradation of local non-descript goat population to bridge the gap between the demand and supply of meat and milk. Jammu and Kashmir

(J&K), has varied agro-climatic and geo-physical conditions (high mountains, low hills and vast meadows), rich alpine pastures, host of other natural endowments and unique socio-cultural setup suitable for livestock production. The farm animal biodiversity in the J&K follows closely the geographical diversity. Goat rearing is practiced in the region since times immemorial and is the core activity of rural masses particularly for Gujjars, Bakerwals, Chopans, Gaddies and Changpas and provides strong livelihood supports to the tribal people of the region besides rural employments for a large population. Sheep and goat rearing play a vital role in the socio-economic upliftment of the weaker sections of the society viz. Chopans, Gujjars, Gaddies, Changpas and Bakerwals.



Fig. 1. Body size, type, head, horn, ear and colour pattern of the Koshur goats of Kashmir region

Despite the enormous importance of goats in the region, there are few recognized breeds of goats reared in J&K, like Bhakarwal and Changthangi. However, a large population reared in the region is non-descript and has not been characterized as a breed yet.

Koshur goat population in Budgam and Shopian district is very well associated directly or indirectly to the livelihood and economy of small, and landless farmers. This goat is well reared under stall fed as well as backyard goat keeping management system. It is important to study this goat population for its distribution, body characteristics, production and reproduction performance, socio-economic importance and utility in the region.

Distribution and breeding tract

Non-descript local Kashmiri goat is medium sized goat distributed in hilly tracts of Anantnag, Shopian, Kulgam, Budgam, Baramullah and Kupwara but large number of population is found in Budgam District (Fig. 1) (Table 1). Budgam is situated at 5281 feet ASL and bounded in the northwest in Baramula, the northeast in Srinagar and southeast in Pulwama district of Kashmir Province.

Strength/weakness of the breeding tract

- The native goats possess excellent disease resistance.
- Adoptability to varying climatic condition like heat and cold tolerance.

- Good feed conversion efficiency and can utilize local weeds efficiently.
- Has tremendous potential to be projected as the 'Future Animal' and can be managed on low input and can withstand changing environment.
- Can be significantly improved through selective breeding.
- Has excellent survivability, therefore, will provide higher returns to farmers.
- They may provide good genetic material for research and development of new and improved breeds.
- The goats of J&K are easy to manage on low input, in terms of feed fodder, housing, and health care and possess good efficiency to convert low quality feeds/ fodder in into meat, milk, and fibre.
- Goat milk is prescribed for children, old and sick people as it is easily digestible owing small

sized fat globules and has possible medicinal value.

- Goat meat (chevon) is lean meat.
- Grazing goats can improve soil and vegetation cover and plant and animal biodiversity, for example by removing biomass, which otherwise might provide the fuel for bush fires, by controlling shrub growth and by dispersing seeds through their hoofs and manure, which can improve plant species composition.
- Droppings (Manure) of goats improve soil fertility.
- This unknown goat population is good source of livelihood for the dwelling population.

Socio-economic status of goat breeders/ farmer

The breed is being reared by the farmers for meat as well as milk. Goat farming is mainly practiced by poor and marginal farmers of middle age

Table 1. Physical traits

Body size	Medium sized
Body colour	Brown 26.88%, White 24.73%, Black 15.05% and mixed in 31.34%
Head shape	Typical convex
Face shape	Long and tapering
Nose type	Slight roman
Nasal bridge	Convex (80.65%) and Flat (19.35%)
Ears type	Straight and short (20%) Broad, long and droopy (78.49%) Rudimentary to short (21.51%)
Muzzle colour	Black (73.20%) and Brown (26.80%)
Presence and absence of horns	Horned (90.32%) and Polled (9.68%)
Horn orientation	Horn orientation is upwards and backwards
Colour of the hooves	Black
Teats shape	Conical

group between 40-60 years of age group. Both male and female folks are responsible for goat rearing in the region. The goat farmers are usually illiterate having marginal land holdings. The land holding (irrigated) size varies between 0 to 19 kanal and under non-irrigated conditions it ranges 1 to 31 kanal. Almost all the category of the farmers keeps these goats for milk and meat in this region of Kashmir. The breeders/ farmers usually possess good experience of rearing the goats.

Managemental practice

These non-descript goats are mostly reared under mixed crop-livestock farming system under semi-intensive management using a mixture of grazing and stall feeding (during early spring and late autumn) and stall feeding alone is practiced during winter only. During winter season, these goats are housed in sheds along with other livestock of the dwelling house and no farmer rears goats separately, means an integrated livestock farming is common in the region. 25.81% and 75.19% of farmers have *kutchha* and *pukka* houses for their animals. All the farmers keep goats indoors during the night time to protect them from the predators (wild animals and stray dogs) and thefts. However, during severe winter, the goats are not let out at all completely, 24×7 hr kept inside the well protected animal houses. This may also be attributed to the socio-economic status of the goat farmers. The paddy straw, oats, dried tree leaves, natural growing grasses (harvested and dried during summer and autumn season), maize stubble, pods and stock of pea, soya and beans are fed as fodder, whereas, maize, rice bran, wheat bran, oil cakes, etc., are fed during winter. Majority of the farmers are well aware about the vaccination against the prevalent diseases, and drenching

and dipping against parasitic infestation in the area. However, farmers are not aware of balanced feeding and no farmer reported fortification of feed with the mineral mixture. The animals are being treated by expert veterinarians as and when required. Post parturient goats are fed cooked turnips, wheat, soya beans, etc. Manure produced from goat-dung is being used as fertilizer



Fig. 2. A Koshur nanny of breedable age and weight

for paddy field and orchid garden. The farmers also rear sheep, cattle and horses besides goats. The farmers keep goats in small numbers ranging from 1 to 8 for milk and meat both. Bucks and surplus females were usually sold to butchers at 1 to 2 years of age for meat. Random natural mating by using young males among the flock has been found rarely as good quality males were sold for meat at younger age. The issue is a serious concern as the farmers did not appear to be conscious of the scientific breeding

of their animals. Both males and females attained sexual maturity at 9 to 18 months age. Breeding season has been observed throughout the year except during winter from late December to March.

Reproductive performance

Age at first estrous varies from 210 to 365 days, weight at first heat achieved between 15.0 to 18.0 kg, and age at first service varies between 280 to 400 days whereas Weight at first service has been observed between 18.0 to 22.0 kg, gestation period ranges between 146 to 152 days and the kidding interval ranges between 210 to 365 days (Fig. 2). The incidence of twinning percentage ranges from 45.0 to 52.0.

Production performance

The growth performance at birth for the population has been observed as 2.55 kg., weaning weight (9.50kg.), 6 months (14.87 kg.), 12 months (25.7 kg.) and Adults (42.78kg.) on an average (Table 2). The milk production ranges from 500 ml to 2.25 liters per day.

Disease prevalence

The most prevalent diseases in the area are PPR, Foot-rot, Gids, Fascioliasis, Cerebrum-spinal, Nematodiasis, Mange, diarrhoea and ecto/endoparasitic diseases besides Paralysis, etc.

Utility of the breed

The population of this goats of Kashmir has promising potential for

Table 2. Morphometric traits

Trait	At Birth	Weaning	6-months	12-months	Adults
Body length in cm (Average)	42.0	49.0	55.0	65.0	73.0
Body height in cm (Average)	39.2	43.75	47.50	61.25	67.85
Chest girth in cm (Average)	42.0	47.90	54.06	65.0	74.05
Paunch girth in cm (Average)	39.0	46.0	53.0	63.0	73.5
Ear length in cm (Average)	9.55	10.22	11.00	12.66	13.78
Ear breadth in cm (Average)	7.50	8.22	9.00	9.25	9.55
Tail length in cm (Average)	11.50	12.0	12.0	12.50	13.18
Horn length in cm (Average)	0.0	3.0	7.0	15.0	21.0

both milk and meat production traits and is well adapted to agro-climatic conditions of the region with average milk yield (AMY) and average lactation length. The population this goat is also suitable for Backyard Goat keeping system besides it provides subsidiary income to the farm family and strengthens the women folk in the rural areas of the region.

Constraints

The main constraints to goat populations include the scarcity of good breeding stock, unplanned breeding system, high inbreeding effect, inadequate veterinary and

extension services, shrinkage of pastures due to encroachment of pastures and grazing lands and slaughter of elite breeding stock. Lack of awareness to adopt improved technologies due to poverty, illiteracy and little or no say in decision making process is the weakness of the goat owners. This population of goats has not yet been identified, characterized, evaluated and registered. No proper plan has been developed for improvement of this important population.

CONCLUSION

There is great scope for rearing of goat for meat and milk production

under backyard goat keeping, semi intensive and intensive rearing management system. However, there is no effective goat development programme operational at the moment. A complete study in respect to breeding, nutrition, management, health care and economics is required to organize for improvement of these goats. Characterization and documentation of this non-descript goat's population is highly recommended.

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