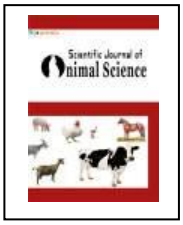
Sjournals
Scientific Journals
Scientific Journal of Animal Science (2014) 3(3) 81-86
ISSN 2322-1704
doi: 10.14196/sjas.v3i3.1148

Contents lists available at Sjournals
Scientific Journal of Animal Science
Journal homepage: www.Sjournals.com



Original article

# Characterization of jamunapari goat in mahoba district of bundelkhand region

**S.K. Rawat[a,*], S.C. Singh[b]**

[a]*Subject Matter Specialist (Animal Husbandry) Krishi Vigyan Kendra, Belatal, Distt. Mohoba, U.P. 210423, (C.S.A.Univ.of Ag. & Tech. Kanpur).*

[b]*Subject Matter Specialist (Horticulture) Krishi Vigyan Kendra, Mohoba, U.P. (C.S.A.Univ.of Ag. & Tech. Kanpur).*

*Corresponding author; Subject Matter Specialist (Animal Husbandry) Krishi Vigyan Kendra, Belatal, Distt. Mohoba, U.P. 210423, (C.S.A.Univ.of Ag. & Tech. Kanpur).

ARTICLE INFO

*Article history,*
Received 28 January 2014
Accepted 22 February 2014
Available online 15 March 2014

Keywords,
Breed characteristics
Habitat
Jamunapari
Management practice

ABSTRACT

The present study was carried out in 50 flocks consisting of 484 goat in 10 villages randomly selected from the breeding tract to characterize and evaluate jamunapari goat under field conditions during the period from 2011 to 2012. The data on various goat management practices viz. breeding, feeding, flock size, housing, disease, etc. were collected based on personal observation and information provided by the farmers. The body weight and different body measurements namely horn length, ear length, ear width, tail length, withers height, chest girth, body girth, hip height and body length were taken. The animals are found to be large in size with well built body having a broad and deep chest. Most of the animals are white with tan or black markings at neck and ears. The flock size varies from 5 to 35. The main breeding season is September and March. The horns are short and flat sized and about 10–15 cm long, horizontal twisting backward and present in both sex. The ears are long and pendulous and about 25-28 cm long, the tail is medium in length. The mean body weights in age groups of 0–3, 3–6, 6–12 and >12 months of males were 9.16, 15.32, 21.64 and 28.89 kg, respectively, and they were 7.98, 13.08, 19.59 and 26.23 kg, respectively, in females. The animals have excellent feed conversion efficiency under extreme conditions with a high dressing percentage. Goat farming forms a major source of livelihood for the farmers of the study area and the non availability of good quality fodder was the

major constraint in the farming system. The results of the present study revealed that there is a scope for increasing the productivity of this breed.



## 1. Introduction

Jamunapari goat, a native breed of Etawah (U.P.) in India, is known for its high quality meat and milk (Rout, 1999). They are the tallest breed and commonly known as the Pari (Angel) in its area of origin Etawah, Uttar Pradesh because of its majestic appearance. It is a tallest sized breed reared mainly for meat and milk production in the northern regions in India. It is among the native goat breeds of India recognized by the Indian Council of Agricultural Research (ICAR). Even though studies have been conducted on the morphological characteristics of the breed (Rout et al., 2002), breeding and performance characters (Singh et al., 1991; Patnaik et al.,1988; Saine et al.,1988), most of these reports were mainly based on animals maintained on the organized farms or in adopted farmers' flocks. These animals are reared for meat and milk purpose. Information about this breed from its breeding tract is scanty. Therefore the present study was undertaken to characterize and evaluate jamunapari goat under field conditions for their morphological characteristics and performance parameters.

## 2. Materials and methods

The study was carried out in district Mohoba in the Bundelkhand region of Uttar Pradesh. For study, data were collected from 50 households of 10 villages of belonging to Jaitpur and Panwari, blocks of the Mohoba district in 2011-2012 using a well defined pretested questionnaire through personnel interview method.

A total of 50 flocks consisting of 484 goats were covered to collect various information related to current status of the breed during the period from 2011 to 2012. Information on the climate viz., temperature, rainfall, humidity etc. was collected from the Meteorological Department of the district. The data on various goat management practices viz. flock size, housing, feeding, breeding, disease, etc. were collected based on personal observation and information provided by the farmers. The morph metric measurements were recorded at the early hours of the day before feeding. The body weight and different body measurements namely horn length, ear length, Ear width, tail length, withers height, chest girth, body girth, hip height and Body length were taken according to (Rout et al.,1999) and the data collected from both sexes were analyzed statistically (Hassan et al., 2010). The ages of the animals were determined based on the presence of teeth and information collected from the farmers.

## 3. Results and discussion

### 3.1. Native environment

Mohoba district is situated between 25°16'59" N of northern latitude and 79°52'00''E of eastern longitude. The geographical area of the district is 2884 square km. These areas have a predominance of kabar (clay loam) and parwa (sandy loam) soils. Physiographical the area are divided into 2 parts, first southern parts having high reliefs with hillocks, second northern parts having relatively low reliefs with low hillocks. The climate is semiarid tropical. The average temperature ranges between 40-49°C (Max) and 1-5°C (Min). Maximum humidity is observed during the period from south –west monsoon ranging 80-85% with its lowest around 30% during April and May. Annual rainfall varies from 800 to 1050 mm. about 87% of the annual rainfall is received for south- west monsoon.

### 3.2. Status of breed in its breeding tract

According to the 18th livestock and poultry census carried out by the Department of Animal Husbandry and Dairying, Government of India in 2007, the population of goat in Mohoba was 185268. Community responsible for the development of the breed Kushwaha and Pal are the two communities responsible for the development of the breed in the Mohoba district. The Pal and Kushwaha communities are traditional farmers doing goat farming for

many generations in this tract. Most of them having medium sized flocks and do agriculture and goat rearing. Both communities belong to backward classes. Very few goat farmers belong to scheduled caste.

### 3.3. Utility

Jamunapari goat is a dual purpose milk and meat type breed. The average daily milk yield varies from 1.5 to 2.0 kg per day with a total lactation yield of about 200-280 kg; highest recorded 4 kg a day and lactation yield 575 kg; average lactation length 188 days. The meat is very good Quality and good flavored. Dressing percentage on pre slaughter live weight basis is about 45% at 6 months and 48 % at 9 months with a bone and meat ratio of 1,3.9. The manure has a good value for agricultural purpose. It is a common practice to retain the flocks in the field during the nights for manuring. The skin of an adult goat is good quality.

### 3.4. Management practices

#### 3.4.1. Feeding

In Mohoba district, the animals are mainly reared on extensive grazing as no fodder is cultivated separately for feeding the goat. The villages with good access to community grazing land had higher flock size. Goats in grazing areas were looked after by girls, women, male children and aged people. Kids were provided suckling twice a day (morning and evening) up to the age of 3 months. Kids born in a large flock, however, weaned little early (2-3 months) and were sent for grazing as a flock up to the age of 5-6 months. Goats were reared primarily on grazing with little external inputs (Rai and Singh, 2004; Singh et al., 2009). The farmers who keep large flocks, graze their goats by own, whereas, those who keep small flock, rear goats on contract grazing. Grazing varied from 5 to 8 hours. The supplementation of concentrate ration was given only to lactating goats at the rate of 100-150 grams/goat/day. Major items fed to goats were crop byproducts viz., straw of different legumes and cereals (arhar, gram, pea, pigeon pea, sesame, sorghum, bajra and wheat). Animals are also fed with different fodder tree leaves such as Ber (Zizyphus mauritiana), Zamun (Uginia jaimbolana), Jharberi (Zizyphus nummularia), Babul (Acacia catechu), Pakhar (Ficus laikar), Neem (Azadirachta indica), Mahua (Madhuca longifolia), Gular (Ficus glomerata), Siris (Albizia lebbek), Bargad (Ficus benghalensis), Pipal (Ficus religiosa), and Subabul (Leucaena leucocephala). Non-specific shrubs are found growing wildly Cyperus L, Eichnocloa L, lampa, kail, dub, sain, etc.

#### 3.4.2. Housing

Housing is provided only at nights in all the villages of districts. The partition is made with dried thorny bushes and ‘all open’ type housing is seen in the some villages of district. ‘Half open’ type housing made of Dhak tree leaves is seen in a very few villages in Mohoba district. In few villages of district, it is a common practice that the goats are kept overnight in the fields for manuring purpose. The flock is kept for a week in the field and partition is provided by dried thorns tied with bamboo sticks. The goats were kept mostly in human dwellings, with other livestock species and in a separate house in the Mohoba district. At night, goats were mostly kept in open verandas in summers and inside the room/ house in winters. Ventilation was inadequate in most of the goat houses irrespective of flock size. Due to poor economic conditions of goat keepers, the housing facilities for goats in this region were sub optimal. The above observations were in agreement to those reported by Singh et al. (2010) and Ekambaram et al. (2011).

#### 3.4.3. Flock size

The average flock size varies from village to village and from farmer to farmer. The size varies from 5 to 35. Most of the farmers group their animals and rear them as a single flock for convenience in management and grazing. Only a few farmers have single flocks. The flock consists of mostly breeding Doe and breeds able replacement females. The Buck and male goats are seen only in limited number. Even for 10-15 breed able Doe only one Buck is used. In some of the villages only one Buck is used for different flocks. The male Bucks are disposed from 6-8 months onwards. The females are disposed in 4-6 years of their age. All the young female goats born are retained every year.

#### 3.4.4. Breeding

The Buck is retained in the flock all through the day. Natural service is the only method of mating practiced in all the villages. The breeding season is mainly seen from September to March and the availability of fodder and

green grass and Buck is sexually more active in winter and spring. Mostly 70–80 percent of the animals is covered during this season and the kidding season starts in January and ends in April. The second breeding season is not prominent since the availability of grass and pasture is very limited in this period.

**3.4.5. Physical characteristics**

Most of the animals are white in colour. The intensity of colour varies from white to yellowish tan and black patches. The survey revealed that 72 percent of the animals are in white, 15 percent in yellowish tan and 13 percent in light brown or black spots are found on the body.

Some of them have black and brown markings on the forehead, inner parts of thigh and lower abdomen. The typical character of the breed is a highly convex nose line with a tuft of hair known as Roman nose or parrot mouth appearance. The goats have corrugated twisted, short and flat horns in both sexes. In bucks, the horns are medium sized and 10-15cm and doe less than 10 cm. The ears are long and pendulous 20-25 cm in length; tubular and tube opening is towards the front. The pendulous lobules called wattles are seen in 76 percent of the females and 68 percent of the males. The coat is hairy and never shorn. A thick growth of hair is present on the buttocks as feathers. The tail is medium and 6–17 cm in length.

**3.4.6. Body weight**

The data of body weights of different age groups are presented in Table 1. In the present study, the sex had a significant ($P<0.05$) effect on the body weights of groups at 3–6 and 6–12 months of age; whereas no significant effect was observed for body weights of groups at 0–3 months and above 12 months of age. Saini et al. (1988) observed that the body weights were higher in males than females at 0–3 and 3–6 months of age, although not significant. However, a significantly higher weight in males than females was detected in animals of 12 months of age (Saini et al., 1988). Rout et al. (1999) reported that female Jamunapari weighed about 3.7 kg at birth, 18.6 kg at six months, and 39.7 kg at 12 months. Growth rate averaged about 81.3g/day up to three months, and 122g/day thereafter. Male Jamunapari attained about 48.8 kg body weight by 12 months under good husbandry. Patnaik et al. (1988) found that weight at birth and after three month was 2.3 ± 0.1 and 9.4 ± 0.6 kg, respectively, which was higher than the present findings. In contrast, Nath and Chawla (1978) and Patnaik et al. (1988) reported significant influences of gender on birth weight.

**3.4.7. Morph metric measurements**

The morph metric measurements of Jamunapari goat such as horn length, ear length, ear width, tail length, withers height, chest girth, body girth, hip height and body length are presented in Table 1. The sex had a significant ($P<0.05$) effect on the horn, ear and tail lengths at above 12 months of age. In general, young kids (0–3 months) were statistically similar for most of the morph metric traits. Significant differences were observed as the ages of animals advanced.

indicating the variation in growth rate between male and female goat. The body measurements at 0–3 and 3–6 months of age were higher than the values reported by Saini et al. (1988). The tail length and height at withers at 12 months of age were higher than the values observed by Hassan et al. (2010).

**4. Concluction**

On the basis of above observations it can be concluded that Jamunapari goat is tall sized, dual purpose goat and well adapted to the environmental conditions of the Mahoba district of the Bundelkhand region such as heat, cold, humidity, water scarcity and seasonal fluctuation in feed availability in terms of quality and quantity as well as disease outbreaks. It shows excellent feed conversion efficiency under extreme conditions. The Jamunapari goat is preferred by local farmers because of their high milk production and high dressing percentage. The results of the present study also revealed that there is a vast scope for increasing the productivity of this breed.

Goat farming forms a major source of livelihood for the farmers of the study area because of the increased demand for milk and meat and low initial investments when compared with large animals. It attracts other small, marginal and landless farmers also to start a goat farm. Even though the Jamunapari goat is generally maintained on grazing alone, their milk and meat yield is as good as that of any other goat breeds of the country. The non-availability of good quality fodder and balance ration in the study area was the major constraint in the farming system; hence the farmers need to be educated on the importance of cultivating different fodder varieties and

**Table 1**
Average (±S.E.) body measurements (cm) and body weight (kg) in Jamunapari goat.

| **Age groups** | **0–3 months** | | **>3–6 months** | | **>6–12 months** | | **above 12months** | |
|---|---|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female | Male | Female |
| Body weight (kg) | 9.16a±0.16(48) | 7.98a±0.11 (62) | 15.32a±0.24 (44) | 13.08b±0.17 (58) | 21.64a±0.19 (54) | 19.59b±0.15(81) | 28.89a±0.18 (41) | 26.23a±0.12(96) |
| | | | | **Body dimension** | | | | |
| Horn length (cm) | 1.86a±1.40 (48) | 1.71b±1.82 (62) | 4.12a±0.95 (44) | 4.01a±1.14 (58) | 9.58a±2.26 (54) | 8.72b±1.97 (81) | 14.91a±3.45 (41) | 10.31b±2.25 (96) |
| Ear length (cm) | 8.21a±2.01 (48) | 7.68a±2.46 (62) | 12.49a±3.25 (44) | 10.82a±3.10 (58) | 17.72a±2.49 (54) | 15.31a±1.98 (81) | 25.13a±3.59 (41) | 23.75b±3.41(96) |
| Ear width (cm) | 2.98a±1.98 (48) | 2.12a±1.01 (62) | 4.31a±0.69 (44) | 2.61a±1.24 (58) | 6.61a±2.09 (54) | 5.84a±1.86 (81) | 8.89a±1.75 (41) | 7.53b±1.42(96) |
| withers Height (cm) | 53.15a±0.42 (48) | 51.64a±0.86 (62) | 58.21a±1.26 (44) | 56.45b±1.41 (58) | 64.43a±2.53 (54) | 61.22b±2.19 (81) | 73.39a±2.46 (41) | 67.59b±2.83(96) |
| Chest girth (cm) | 54.26a±3.15 (48) | 52.87a±2.91 (62) | 59.73a±3.48 (44) | 57.61b±3.27 (58) | 67.51a±4.75 (54) | 63.49b±4.82 (81) | 79.38a±6.11 (41) | 76.33b±5.49(96) |
| Body girth (cm) | 57.31a±6.24 (48) | 55.64a±5.82 (62) | 61.56a±7.48 (44) | 58.87a±6.34 (58) | 73.19a±6.11 (54) | 71.55b±6.76 (81) | 82.65a±7.33 (41) | 79.34a±7.91(96) |
| body length(cm) | 69.43a±3.53 (48) | 67.51a±3.44 (62) | 80.61a±6.81 (44) | 78.89b±5.62 (58) | 92.13a±7.39 (54) | 89.86b±6.83 (81) | 113.65±8.40 (41) | 104.37b±7.67(96) |
| Hip height (cm) | 50.13a±3.26 (48) | 48.61a±2.67 (62) | 55.68a±3.51 (44) | 55.49a±4.35 (58) | 63.48a±4.39 (54) | 61.87b±4.10(81) | 74.51a±5.71 (41) | 72.73b±5.27(96) |
| Tail length (cm) | 6.65a±0.18 (48) | 6.97a±0.95 (62) | 9.32a±1.20 (44) | 9.89a±2.46 (58) | 13.12a±2.10 (54) | 14.51a±1.60 (81) | 16.81a±1.92 (41) | 17.66b±2.04(96) |

*value in parenthesis indicate angular transformed values.

balance ration for feeding goat. The farmers are also to be trained on the scientific management practices such as deworming, vaccination, castration, selection and breeding, etc. to increase the productivity of these goats. Technical, extension and marketing support should be provided to the farmers so as to make goat production a profitable enterprise for all sections of society irrespective of caste, creed, land holding, etc.

**Acknowledgements**

We convey our thanks to Dr S.C. Singh, S.M.S. (Horticulture) K.V.K. Lalitpur, for allowing us to make this study. We also convey our thanks to the staff of the K.V.K. Belatal Mohoba, meteorological department of district Mohoba and all farmers in collection of data for the study. We are grateful to authors of various articles which have been noted in the study.

**References**

Ekambaram, B., Gupta, B.R., Prakash Gnana, M., Sudhaker, K., Reddy, V.R., 2011. Housing,breeding and management practices of Mahabubnagar goats. Indian J. Anim. Sci., 81(8), 875-879.

Hassan, M.R., Talukder, M.A.I., Sultana, S., 2010. Evaluation of the production characteristics of the Jamunapari goat and its adaptability to farm conditions in Bangladesh. Bangladesh Veter., 27(1), 26 – 35.

Nath, I., Chawla, D.S., 1978. A study on birth weight of Beetal, Alpine and Beetal x exotic crossbred kids. Indian Veter. J., 55, 306-309.