

Konkan Kanyal-Characters and performance of a newly discovered goat germplasm of Maharashtra

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India ranks first in the world for total goat population (120.6 million). Maharashtra possesses 10 million goats which contribute 0.45, 2.16 and 1.3 million of tonnes meat, milk and skin respectively. Osmanabadi and Sangamneri are the two known goat breeds of Maharashtra state of India listed among the twenty descript goat breeds of India (Acharya 1982). Besides these, there are some other populations in this state which appear to be different but have not been studied. Kanyal goats is one such populations, which exists in the Konkan region of Maharashtra state. In heavy rainfall area few goats can survive well but this new type of goat population which has been developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, through intensive selection survives well and performs satisfactorily. An attempt was made by the National Bureau of Animal Genetic Resources (ICAR), to study the distribution, morphology, performance and management practices of these goats in their native area.

The villages were selected in consultation with the incharge goat farm at Cattle Breeding Farm, Nileli of Dr Bala Saheb Sawant Konkan Krishi Vidyapeeth (DBSKKV), Dapoli. The tract comprised Kudal, Manegaon, Upaware, Nilleli, Nerule, Angiware, Adeli, Maton, Vatore Nemle, Kolgaon, Zarebambore, Kazubari, Adiware, Kudal, Manegaon, Amboli, Nilleli, Banda, belonging to Verungla, Nileli, Sawantwadi, Dodamarg, Malvan and Kudal talukas of district Sindudurg of Konkan region of Maharastra state. The team also visited Cattle Breeding Farm, Nileli of the DBSKKV, Dapoli where a flock of about 178 Kanyal goats is maintained. Body measurements on height at withers, body length, chest girth, paunch girth, face length, horn length, ear length, tail length of 219 goats and body weights of 252 animals of different age groups were recorded. Information

on management was recorded through interaction with farmers. Means and standard errors were estimated to know the average morphometric traits.

Breeding tract: Konkan region is marked by Sahvadri mountain range on eastern side, Arabian sea on western side, Gangavali river on southern side and Mayura river on northern side. Sindhudurg district in Konkan region, the habitat of Kanyal goats is situated between 15°37 and 16°40 North latitude and 73°19 and 74°18 East longitude. High rainfall from June to September accompanied by warm and humid climate throughout the year is the characteristic of west coast region (Konkan) of Maharashtra.

Konkan Kanyal goats are spreaded in different villages of Kudal, Dodamargi, Malvan, Verungla and Sawantwari tehsils of Sindhudurg district of Konkan region of Maharashtra state (Fig.1). About 180 animals of these goats are maintained in an organized way at cattle breeding farm, Nilleli of the DBSKKV, Dapoli.

Utility: Kanyal goats are reared by Dhangar and Maratha communities of the region for meat purpose. These goats are well adapted to typical agro-climatic conditions of the Konkan region.

Morphological characters: These goats are predominantly black in colour with white marking in a specific pattern (Fig. 1), however, brown coat with the similar pattern of white



Fig. 1–2 1. An adult doe; 2. Colour variants

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Table 1. Means along with SE of different body measurements of Konkan Kanyal goats

Age group	4–6 months		7–12 months		Adults (> 15 months)	
N	5	9	30	40	19	116
Sex	M	F	M	F	M	F
Height at withers	58.00±2.28	56.11±0.82	66.23±0.99	62.53±0.53	73.42±0.97	68.95±0.33
Length	57.80±2.35	56.56±1.54	64.47±1.11	59.98±0.56	70.74±1.11	66.86±0.36
Chest girth	53.78±2.77	53.40±1.69	62.40±0.78	61.33±0.54	72.37±1.12	69.53±0.43
Paunch girth	56.20±3.38	55.33±1.83	65.43±1.13	62.10±0.63	71.95±1.18	70.79±0.58
Face length	13.89±0.24	13.60±0.31	15.87±0.20	15.03±0.24	17.58±0.22	16.15±0.08
Horn length	5.78±0.55	5.00±1.30	10.13±0.48	8.13±0.33	15.88±1.00	13.04±0.32
Ear length	14.80±0.97	13.80±0.43	15.70±0.24	15.24±0.20	16.11±0.36	15.88±0.13
Tail length	12.44±0.32	12.00±0.41	15.47±0.34	13.55±0.19	16.32±0.34	14.71±0.11

Table 2. Body weights (kg) at different ages of Kanyal goats

Age groups (months)	Sex	N	Body weights (kg)
1–3	M	17	8.53±0.60
	F	12	8.04±0.66
4–6	M	8	13.50±0.73
	F	20	12.40±0.44
7–12	M	30	24.08±1.23
	F	40	19.39±0.48
Adults (> 15 months)	M	19	35.26±1.75
	F	116	29.64±0.45

or light brown markings were also available (Fig. 2). Ventral surface of the body is white and legs bear white stockings.

The prominent characters of Konkan Kanyal goats are — *body*: black/brown coat with white markings on collar, lower jaw and ventral surface, hair short, fine and silky; *head*: bilateral white strips from nostrils to ears; *forehead*: flat and broad; *ear*: black with white margins, flat, long drooping; *horn*: gray, pointed backward, cylindrical; *muzzle*: white; *legs*: long laterally black, medially white for knee to fetlock joint; *udder*: bowl shaped; *teats*: conical.

Body measurements: The estimates of biometrics for adult males and females taken for height at withers, body length, chest girth, paunch girth, face length, horn length, ear length, tail length are given in Table 1. The body weights of different age group animals from field were recorded and the average weights are given in Table 2. The body weights of adult male and females were 35.26 and 29.80 under field conditions. The birth weights recorded under farm conditions indicated the average weights of male and female kids as 2.275 and 2.055 kg which increased up to 24.29 and 20.44 kg, respectively, at 12 months age. The results showed age-dependent sexual differences in the body dimensions.

Production and reproduction: The average age at first kidding, kidding interval, twinning recorded under farm conditions were 2.161 kg, 545.82 days, 239.85 days, and 34.67% respectively (Annual Report 2008). As per the

information obtained from goat keepers through personal interaction during the survey, Kanyal goat is not a very good milch animal but yields 0.5 to 1.0 liter milk / day. The farm records revealed the average milk production per lactation to be 69.035 liter in a lactation period of 96.199±17.49 days and an average milk production 0.609±0.095 liter/day (Annual Report 2008).

Meat quality: The meat of Kanyal goats is red in colour with fine and firm fiber. A 14-month-old animal weighing 32.30 kg when slaughtered yielded hot carcass of 18.34kg, dressing percentage 56.78, bone percentage 14.24 and giblet percentage (heart, liver and spleen) 2.60 (Annual Report 2008).

Management: The Kanyal goats are mainly reared under free range system. In few cases, rearing under stall fed and semi stall fed conditions have also been observed. In the Konkan region feeds like *asana* (*Bridelia retusa*), *pangara* (*Erythrina incida*), *bhaind* (*Thespesia populini*), *dhaman* (*Greia tiliaefolia*), *jackfruit* (*Artocarpus heterophyllus*), *shivan* (*Gmelina aboria*), *umber* (*Fiscus glomerata*), *dhasari* (*Secuvangia leucupures*), *posari* (*Jasimum malbaricum*) containing 3.2 – 15.43% DCP and 46.44 – 75.68% TDN are commonly available for goat feeding. The growth performance of Konkan Kanyal goats maintained at Nilleli farm recorded for stall fed, semi-stall fed and grazing conditions indicated that the per day gain in body weight was 0.082, 0.080 and 0.030 kg respectively.

Konkan being the high rainfall zone, close housing is preferred for these goats where house is constructed with raised floor at a height of about 3–4 ft from the ground level (Fig. 4). This type of housing provides better ventilation and help in maintaining more hygienic conditions inside the house. Cage housing consisting of big bamboo basket (Fig. 3) is used for keeping the newly born kids.

The farm studies showed that Kanyal goats had 3.23% mortality as compared to 9.52% observed in other nondescript goats of the region. The mortality observed in these new type goats was due to food poisoning (0.50%0, blot/tympani



Figs 3–5. 3. Cage housing for kids. 4. Raised housing for adults. 5. A breeding buck.

(0.90%), lumber paralysis (0.60%), indigestion (0.60%), enteritis (0.30%) and accident (0.30%). No case of pneumonia was observed.

Breeding: The flock maintained at Nileli farm was developed by with the criteria fixed for selection from the native flocks existing with the farmers in the field. *Inter-se* breeding was carried out to propagate the population. The undesirable animals not meeting the selection criteria or having poor growth were sold out before attaining the age of maturity. But under field conditions due to lack of good breeding bucks, indiscriminate mating resulted into mixed flock. The bucks available in the field (Fig. 5) were found to be slightly deviating from the true characteristics of Kanyal goats.

Konkan Kanyal goats are medium sized having compact body meat purpose animals. They can withstand high rain fall, hot and humid conditions and thus found well adapted to the agro-ecological conditions of Konkan region as only about 3.0% mortality has been reported in this population. The overall performance of these new type goats is better than the other nondescript goats existing in the same area. Based on the observations, the Kanyal goats can be recommended as a new goat breed of Maharashtra state and can be exploited for improving the other local goat population of the area for meat purpose.

SUMMARY

This study was conducted on 252 animals of Konkan Kanyal goat population belonging to different sex and age groups existing in the different villages of Kudal, Dodamargi, Malvan, Verungla and Sawantwari tehsils of Sindhudurg district of Konkan region of Maharashtra state of India. The Kanyal goats are mainly reared under free range system. Animals are predominantly black with white marking in a

specific pattern, however, brown coat with the similar pattern of white or light brown marking are also available. The average body measurements for height at withers, body length, chest girth, paunch girth, face length, horn length, ear length, tail length were estimated. The body weights of adult male and females were 35.26 and 29.80 under field conditions. The average milk production per lactation was 69.035 liter in a lactation period of 96.199 ± 17.49 days and an average milk production 0.609 ± 0.095 liter/day. Average age at first kidding, kidding interval, twinning were recorded under farm conditions. The meat of Kanyal goats is red with fine and firm fiber. Close housing with raised floor are constructed for these goats. Only about 3.0% mortality was reported hence these are well adapted to the agro-ecological conditions of Konkan region. Based on the unique morphology and performance better than the other nondescript goats of the same area Konkan Kanyal goats can be recommended as a new goat breed of Maharashtra state which can be exploited for improving the other local goats for meat purpose.

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