

A Study on Kenguri as Mutton Breed of Sheep in Southern Karnataka, India

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Abstract: Kenguri sheep breed from Koppal and Raichur districts of Northern Karnataka is gaining popularity as meat sheep in Southern Karnataka. Semi-structured interview schedule was used to obtain information from traders and farmers. Male lambs of about two month age from their home track are traded at Shandys of south Karnataka. Market price of lamb ranges from 2000 to 2600 rupees based on the season of sale and demand. Local farmers rear the animals for about twelve months then after send them to the market. Period of rearing depends on season, crop harvesting and future festivals. The average flock size is 12 and average body weight at 3 months, 6 months and one year are 13.2 kg, 24.2 kg and 35.2 kg respectively. Morphometric measurements as length, height and heart girth did not differ significantly between lambs from different areas. Growth of lambs from urban and peri-urban was significantly better compared to lambs from rural areas.

Key words: Kenguri • Southern Karnataka • Meat • Growth

INTRODUCTION

Kenguri is a sheep breed of Karnataka. The home tract of the breed is Koppal and Raichur district of Northern Karnataka. In its home tract, the breed is non-migratory. The body colour of the animal is dark brown colour or coconut colour. In most of the cases the animal has white colour on its forehead and sometimes on the legs and other parts of the body. Some animals are known to have black belly. Ears are medium long and droopy. Tail is short and thin. Males are usually horned than females. The farmers maintain an average flock size of 85. The animals are usually reared on natural grazing pastures during cooler hours of the day. These sheep graze on the crop stubbles, barren land and roadsides. Supplementary feeding is rare. The sheep are taken to the source of water two to three times a day. Animals are usually housed in a fenced enclosure during night. The fence is prepared from bushes, other locally available material or iron wires whereas the shed is thatched with tree branches and crop by-products. Sheep house is either part of owner's house or adjacent to it. Mortality

rate in these sheep is about 7% in adults and about 8-10% in lambs [1]. The breed is becoming a popular choice for stall-feeding and as small flock rearing in Southern Karnataka. Population of Kenguri breed in southern districts of Karnataka is increasing and was around twenty five thousand five hundred heads as per 18th livestock census data [2]. Population of the breed in southern districts of Karnataka is increasing at the rate of 24% per annum. The present study was designed to know the distribution, market trends, rearing pattern and growth parameters of the Kenguri sheep in southern Karnataka.

MATERIALS AND METHODS

Kenguri sheep is traded at various popular shandys of Southern Karnataka. Among them, Gandasi sandy of Hassan district is selected for collection of data. The post facto experimental design was conducted by using a semi-structured interview schedule. Information on source of animals, method of procurement, age and selling price of lambs, season of lean and maximum sales were obtained from animal sellers and the information on cost and age of

purchased lambs, method of selection, season of purchase, method of rearing, availability of feed source and planned duration of rearing were obtained from lamb buyers. The methodology followed by farmers for selecting the fattened sheep was also observed. Data on morphometric traits as length, height, hearth girth, body weight and age based on dentition of three, six and twelve month Kenguri sheep were collected from Kenguri rearers three each from rural, peri urban and urban area. Monthly body weights upto one year was collected. Observations were made at three stages of the growth coinciding the marketing age preferred by the farmers. Market trends, feeding, housing and rearing practices adopted by Kenguri rearers of the region are also studied. Procedure NLIN of SAS 9.2 statistical software was used for estimation of growth parameters. The Brody curve exponential function $W_t = A - (A - W_0)e^{-k(\text{Age}_t - \text{Age}_0)}$, where parameters A is asymptote or weight at twelve months of age, W_0 estimated initial weight at $\text{Age}_0 = 2$ months and k is maturing rate index.

RESULTS AND DISCUSSION

Animal Source and Market: Gandasi of Hassan district is the largest sandy in South Karnataka for the trading of Kenguri sheep may be due to that Kenguri is more preferred by the farmers of Semimalnad region in Hassan where green fodder is available throughout the year. The population of Kenguri in Hassan district is 46.4% of that in South Karnataka. Moderate trading of Kenguri sheep also takes place at some shandys of Tumkur and Mysore districts. Ten to fifteen middle men from villages near Gandasi are involved in the trade. They purchase the male lambs of around two months age from Sindanur and Kumkumpalya shandys of Gangavati and Koppal districts of north Karnataka, or directly from farmers though a middle men of that area. The animals are transported in a medium sized trucks with capacity ranging 150 to 250 lambs. During transportation period of around 12 to 14 hours, lambs are rarely fed and some said to feed neem leaves. Water will be given once in the midway and once just before shifting to sandy. Sandy takes place on every Thursdays, Kenguri trading begins early in the morning and will be almost complete by noon. Only male lambs are traded. Maximum demand for lambs is during the month of March and April. During the period, eight to ten truck load of lambs are traded per day. During other months of the year four to six truck load of lambs are traded per day. Traders purchase lambs in bulk from home track at an average cost of rupees 2000- 2200 during peak season and

rupees 1800-2000 during lean season. Transportation cost per load is around 6 to 8 thousand. The Middle men will be in constant touch with the agents from home track regarding availability of lambs, distress sales and price fluctuations. The lambs of around two months are sold at rupees 2000 to 2300 during lean season and 2400 to 2700 during peak season.

Animal Purchases: The local sheep rearers purchasing lambs, falls into three categories based on animals purchased. First Urban sheep rearers purchasing less than five animals, constitutes about 22 percent sales. Second Peri-Urban sheep rearers purchasing less than twenty lambs and constitutes about 48 percent sales and Third Rural sheep rearers purchasing more than 20 lambs and constitute 30 percent sales. The overall average flock size is 12. The Kenguri lambs are reared separately and never mixed or reared along with local sheep.

Selection of Lambs: The purchasing price of the lambs mostly depends on flank width and fullness of lambs than the weight of lamb. The maximum purchases will be during the month of March and April, so that they can rear the lambs for 8 months to one year and sell the fattened lambs during November and December coinciding the festivals of Eid and Christmas. Few purchases coinciding crop harvesting and other local festivals are also done. The fattened lambs are marketed between eight months to one year. The lambs are rarely reared beyond one and half year.

Feeding of Lambs: The sheep reared in rural, peri-urban and urban areas were observed. In the rural areas rearing is solely on grazing leftover of the harvested fields. The feeding in and around Hassan was comparatively better in nutritive value. This is evidenced by the diversity of animal species maintained by the farmers under mixed farming. Besides, the number of sheep and goats that pass by through this district by the nomads, indicates that the pasture lands available are enough in quantum. In peri-urban areas it is semi-intensive system which is characterised by allowing the animals for grazing for 8 hours and then were fed with some minimal supplemental concentrate during night time. The concentrate included grains maize, jowar, ragi and kinkis with horse gram. Daily 50 to 100 grams of combination or single source of grains are fed during evening /night times for supplementary feeding. In the urban areas, the animals were solely fed and maintained on the stall-fed condition with tree leaves,

leftovers of vegetable and grains of petty provision stores. One or two goats which were reared at the household level or in front of petty shops with the vegetable wastes are being slowly replaced by Kenguri sheep.

It was found that in rural areas the sheep were reared only on grazing till six months of age. A few farmers gave supplementation of concentrates in later age and before selling. The reason for giving concentrates only in later age may be to compensate lesser growth compared to younger age and less availability of greens. Under all these type of rearing practices, Kenguri sheep had performed well indicating that these animals are best suited for any type of rearing pattern besides adjusting with the type of weather conditions varying from dry to semi-arid to rainfed in the Hassan region and on a whole coinciding with the same weather in other parts of southern region of Karnataka.

Housing: The housing that was provided were very economical. In rural areas, the farmers made an enclosure with the fencing material made of wood. The roofing was of thatched roof made of coconut leaves. In peri-urban areas, some provided the thatched roofing enclosure outside their house and some had accommodated with one or two cattle they had maintained in the cattle shed and other had provided a apart within the farmers own house. In the urban areas, it was solely on stall-fed during night time and during the day the animals were tied in front of the vegetable shops /provision stores.

Sale of Fattened Lambs: Fattened lambs are sold at sandy or butchers directly purchase animals from farmers field. The cost of the animals sold ranges from rupees 120 to

200 per kilogram live weight of the animal based on age and health conditions. The animals are not actually weighed, but are assed for live weight, meat yield and to some extent the quality of meat by checking certain morphological areas of the body. Animals dentition is observed for assessing age. Irrespective of the age group of the animals, the farmers prefer to check two areas on the animal body, one is lumbar region and other is the medial aspect of the upper thigh in the hind limb. In the lumbar region, flank width and fullness were graded. Higher flank width and flank fullness or muscular covering of lumbar spines indicates higher meat yield. In hind limb, the depths of the thigh muscle, skin tightness are observed. Higher thigh muscle mass indicates better meat yield and meat cut value and tight skin at thigh region indicates feeding / starving status of animals. Few farmers also look for heart girth in predicting the live weight, quality and yield of meat. Naveen kumar *et al.* [3] has also reported accurate prediction of live weight based on flank width and heart girth in Kenguri sheep. The data on body weight from two months to twelve months were subjected to growth analysis. Suitability of exponential and logistic model for growth were analysed. Brody curve of exponential model was found to be most suitable and parameters were estimated by Gauss- Newton Iterative method of Non linear procedure and the estimated curve is $Wt=39.676-(39.676-8.3665)e^{0.1443(Age_i-2)}$ where Wt is predicted weight at Age_i (Fig.1).

The market rates differed with the age group of these animals. The lowest rate was for the 2 months animal varying from 2000 to 2200 depending on the season. The next age group which were more in number were 4-6 months and 8-10 months. The rate for a 4-6 month sheep had minimum variation between Rs 3650-4000 and that of 8-10 months age was between Rs 4500-5500 per animal

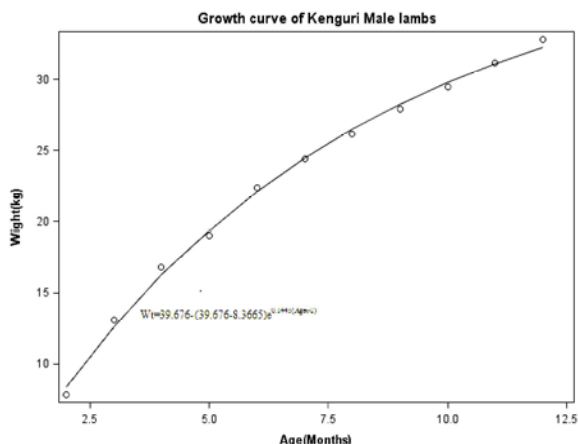


Fig. 1: Growth curve of Kenguri lambs from Southern Karnataka Adult Kenguri sheep

Table 1: Mean and Standard error of Morphometric measurements on Kenguri lambs at 3, 6 and 12 months of age from Urban, Peri-urban and Rural areas in South Karnataka

	3 months				6 months				12 months			
	Height	Length	Heart girth	Weight	Height	Length	Heart Girth	Weight	Height	Length	Heart girth	Weight
Urban	37±2.0 (5)	34±1.0 (5)	41±0.2 (5)	13.6±0.3 (5)	69±3.0 (5)	64±3.2 (5)	71±3.0 (5)	23.6±2.0 (5)	76±3.2 (6)	73±3.5 (6)	88±2.3 (6)	36.5±2.2* (6)
Peri Urban	37±1.2	34±0.8	40±1.0	13.4±1.0 (10)	68±3.2 (10)	65±3.2 (10)	71±2.4 (10)	22.2±2.4 (10)	75±3.5 (12)	73±3.0 (12)	87±3.5 (12)	35.8±2.0* (12)
Rural	38±2.4 (18)	34±1.2 (18)	40±0.8 (18)	13.2±0.8 (18)	70±3.0 (22)	63±2.8 (22)	72±2.0 (22)	21.4±1.2 (22)	75±3.5 (20)	74±3.0 (20)	84±3.5 (20)	32.4±1.8 ^a (20)

Means with different superscript differ significantly $P < 0.05$.

The values in the bracket indicate the number of animals evaluated

respectively. Apart from this, the preference for different age group of the sheep differed with the region of the district. The rural people preferred the sheep of one to two months of age group. The animals of 4-6 months were preferred by the people of urban and peri-urban areas. This actually coincided with the way these people reared the animal. As the rural farmers depend on grazing and does not feed the animal with extra concentrates due to their financial status, they require longer period of rearing to attain marketing weight, hence they procure the animals of 2 months of age. The urban people the sheep are maintained by intensive feeding, rear for lesser duration hence also purchases animals of around 4 months age.

The mean and standard deviation of morphometric measurements are presented in Table 1. The body length and body height did not differ significantly between rearing region at different age group. Heart girth and body weight did not differ significantly between rearing areas at 3 and 6 months of age. The body weight of lambs from Urban and Peri Urban areas were significantly more ($p < 0.05\%$) compared with lambs of Rural area which may be attributable to supplementary feeding. Body weight of lambs from Urban as compared with peri-urban areas was more but not significant. Overall average of the body weight of Kenguri sheep at 3 months, 6 months and one year were 13.4±0.2kgs, 22.2±0.3kgs and 35.3±0.8 kgs respectively which was higher than that reported for the breed from their home track [4]. The increased body weight may be due to lamb selection, availability of quality pasture and supplementary feeding. The body weight are almost in the same range as one predicted for the Kenguri breed from [5]. The body weight of Kenguri lambs are higher than that of other sheep breeds of Karnataka. The body weight at 3, 6 and 12 months in Hassan [6], Mandya and Bellary breed [7, 8] are 13.1, 17.1 and 22.2 kgs.; 14.1, 19 and 25.7kgs.; 11.7, 15.6 and 22.13kgs respectively. Better weight gain of Kenguri breed giving more returns per se than other breeds justifying the farmers preference for the breed.

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