

PHENOTYPIC CHARACTERIZATION OF KOMBAI DOG AND DOCUMENTATION OF ITS REARING PRACTICES IN ITS BREEDING TRACT OF TAMIL NADU STATE

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ABSTRACT

The present study was carried out to document the physical and morphometric characteristics of Kombai dog found in Theni district of Tamil Nadu, India. The physical and morphometric traits were recorded from adult male and female Kombai dog which are more than two years of age. The other managerial practices and breeding characters of this dog were obtained from the dog owners through direct interview schedule. The coat colour of Kombai dog is light brown to tan. The dogs are aggressive towards strangers and obedient with the owners. The height at withers in adult males is 60.38 ± 0.35 cms and in female is 55.66 ± 0.37 . The body weight of adult Kombai dog were 22.42 ± 1.14 and 21.73 ± 2.14 kg, respectively in male and female dogs. Due to the above measurement range, Kombai dogs categorised under the category of mid-sized hound (Mid-sized hound dog - height 51-70 cm and body weight between 20-40 kg).

Key words: Kombai dog, phenotypic characters, rearing practices, Tamil Nadu

Introduction

India is having an ironic genetic resource in livestock when compare to the other parts of the world. Most of our native livestock are having well adoptive characters to endure all the adverse climatic condition. But, due to the introduction of exotic livestock with a badge of high productivity masking the distinct characteristics of our own livestock population and they lose their popularity among the livestock farmers. Like livestock, our indigenous dog breed also loses its popularity among the pet owners and they are fascinating towards the exotic dog breeds. But the awareness arises among the people about the natural way of living, there is huge demand for all indigenous agriculture and livestock farming. The above situation is true in domestic dog breeds and there is huge demand for indigenous dog breeds among pet lovers.

Dog breeds like Rajapalayam, Chippiparai, Kanni and Kombai are well known among the pet lovers and all are having their native tract in the southern districts of Tamil Nadu, India. Rajapalayam and Chippiparai are recognised as a breed by National Bureau of Animal Genetic Resources (NBAGR), Karnal, India. In this circumstances, Kombai dog, a hound dog variety found in Theni District of Tamil Nadu State, India is in a need of recognition as a breed by an authoritative body like NBAGR/ registered club like KCI for further popularisation among the pet lovers. Keeping this in mind the present study has been conducted to document the physical and morphometric characteristics of Kombai dog which will be used as a foot stone for further studies about the Kombai dog.

Materials and Methods

For this study, a structured questionnaire was prepared to gather information on various aspects via common managerial practices followed in Kombai dog rearing, socio economic profile of the owners, physical characters and reproductive characters of Kombai dog. ICAR- NBAGR

guidelines for phenotypic characterization was used as a base with slight modification.

Information was collected from the Kombai dog owners with an experience of more than 5 years. The dogs of above one year of age maintained under various management conditions were randomly selected to record the phenotypic characters. Age of the dogs was recorded based on the personal interactions and also by perusing the available records with the breeders/ dog owners. Physical traits were recorded from 25 male and 36 female dogs. The age of the animals was ascertained based on interview and records of individual dogs available with the dog owners.

The live weight of the dogs was recorded using portable digital spring weighing scale to the accuracy of 10 grams. Pregnant bitches were excluded from weighing. The basic biometrical measurements were recorded in the normal standing position of the dog in a levelled surface using graduated plastic tape to the accuracy of one cm. The morphometric traits under study included head circumference, neck length, body length, length of head, abdominal girth, height at withers, neck circumference, tail length, ear length and ear width (Yilmaz, 2007).

Results and Discussion

The Morphometric traits and body weight of adult Kombai dog were listed in the Table 1.

History, origin and distribution

The name for the Kombai dog is derived from its place of its origin, i.e. Kombai village of Theni district in Tamil Nadu. Due to the good guarding nature, it got popular among the pet lovers, and spread throughout the district as well as neighbouring district like Madurai and Virudhunagar districts. Surfing information about this dog revealed that, this dog has utilised for hunting of deer, wild boar, and bison before the ban

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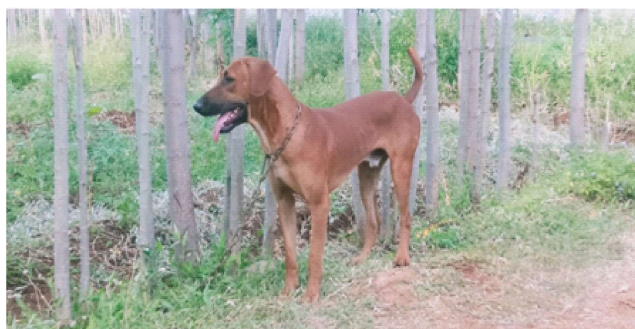


Fig 1: Kombai dog- adult male

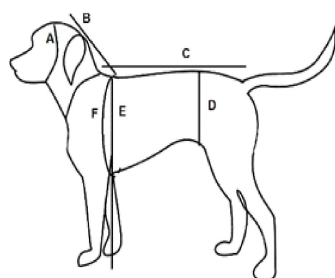
on hunting. Further, the above districts are geographically located at the foot hills of Western Ghats and are having fertile farm lands and vast area of horticulture crops. Thus, for the guarding of such farm lands and horticulture field, Kombai dog was the only choice due to its hardy nature, best guarding behaviour and better adoptability.

Physical traits

The Kombai dog is medium sized and well equipped with a strong muscular body, powerful jaws, and strong legs. It has a moderate sized head that is proportionate to its well-developed compact body. It is having black mouth and pendant ears. This breed normally has a rich red or brown coloured coat and a black mask. In rare, few dogs having a black coloured stripes all over the body like tiger and are called as Pulisarl Kombai (Puli means Tiger). The tail is long and carried curved. Some of the information in internet said that, a black colour stripe, runs down the length of the back of the Kombai dog and continues up to the end of the tail. But, none of a dog is having such colouring pattern and these stripes are noticed in puppies and will disappear after 4- 6 month of age. The ears were medium in size, flat and drooping. Tip of the ear is blunt in nature.

Morphometric traits

Kombai dogs are medium sized dogs. The height at withers in adult males are (60.38±0.35 cms) higher than the adult female (55.66±0.37.) Adult males are few centimetres taller than their counterpart. The chest girth of adult male and female Kombai dogs were 75.08±0.35 and 71.4±0.37 cm. Body length of Kombai dog was 59.23±0.26 and 55.08±0.31 cm, respectively for adult male and female. Paunch girth was 56.31±0.47 and 55.92±0.35, respectively for adult male and female Kombai dog. Ear length was 33.50±0.57 and 32.88±0.24 cm, respectively in adult male and female Kombai dog. Width of the ear was 7.08±0.15 and 6.95±0.14, respectively



- A. Head circumference
- B. Neck length
- C. Body Length
- D. Abdominal girth
- E. Height at withers

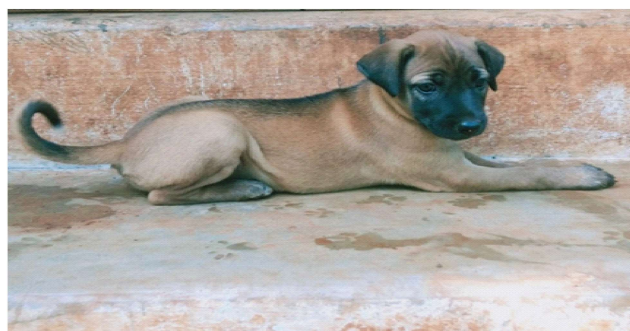


Fig. 2: Kombai Pup

Table 1: Morphometric traits and Body weight of Adult Kombai dog

Traits	Male (In cms)	Female (In cms)
Length of Head	21.96±0.31	21.28±0.2*
Circumference of the head	35.04±0.46	35.98±0.39*
Length of neck	19.38±0.45	19.00±0.29
Circumference of the neck	44.31±0.37	44.44±0.26
Chest girth	75.08±0.35	71.4±0.37**
Abdominal girth	56.31±0.47	55.92±0.35
Height at wither	60.38±0.35	55.66±0.37**
Body length	59.23±0.26	55.08±0.31**
Tail length	33.50±0.57	32.88±0.24
Ear length	11.54±0.18	11.8±0.14
Ear width	7.08±0.15	6.95±0.14
Body weight (in Kgs)	22.42± 1.14	21.73±2.14

**P<0.001. *P<0.05.

in male and female dog. Significant difference was found between the sex in length of head, circumference of the head, chest girth, height at withers and body length

Breeding management

The male Kombai dogs show courtship behaviours at an early stage without protrusion of the reproductive organ and ejaculation. They show successful mounting, coitus lock and impregnate the bitches only after 12-14 months of age. The age at maturity in females was 14-16 months and the same was slightly earlier in the bitches which are reared by the kennel owners under good feeding regimen and nutritional supplement. Bitches maintain under good feeding management shows two breeding cycles in a year. But most of the bitches show three cycles in two years. Litter size ranges between 2 and 8 with an average litter size of 5 pups per whelping and the number of pups increase with the age of the dam.

Health care management

When compare with exotic breeds of dog, incidence of

diseases is low in Kombai dog. Parvo viral infection and canine distemper are some of the health problems reported by the surveyed dog owner. Only 60 percent of the surveyed population vaccinated their dogs for all the diseases. Majority of the dog owners (85 %) of the population were followed proper vaccination schedule for their dog.

Feeding management

Most of the surveyed population (74%) did not prepare any special food for their dogs/pets. Whatever they were preparing for their family use has been share with them. The dogs maintained under kennel setup were provided with non-vegetarian food regularly. They provide commercial dog feed for puppies up to the age of 45 days (Up to the sale of puppy).

Housing management

Majority of the Kombai dog owners (65 per cent) maintain their dog with an individual shelter provision inside their house or farm land. In organised kennels, Female and male are maintained separately. The females in oestrus were allowed for mating with a selected male in a separate room. In kennels, the bitches nearing whelping were housed separately until one month of postpartum.

The height at withers in adult Kombai dog was lesser than the Rajapalayam dog breed, another dog breed found in Tamil Nadu (Selvakkumar *et al.*, 2014 & Raja *et al.* 2017). Height at wither of Kombai dog was similar to Labrador Retriever dog (AKC, 1994). The body weight of adult Kombai dog were 22.42 ± 1.14 and 21.73 ± 2.14 kg, respectively in male and female dogs. As per the classification of hound dogs by Yilmaz *et al.* (2007), Kombai dogs falls under the category of mid-sized hound (Mid-sized hound dog - height 51-70 cm and body weight between 20-40 kg). The chest girth of adult male and female Kombai dogs were 75.08 ± 0.35 and 71.4 ± 0.37 cm and it was higher than the Rajapalayam dog reported by Selvakkumar *et al.* (2014) and Raja *et al.* (2017). Body length of Kombai dog was 59.23 ± 0.26 and 55.08 ± 0.31 cm respectively for adult male and female which is lower than the findings of Selvakkumar *et al.* (2014) in Rajapalayam dog which was 60-63 irrespective of the sex.

Only 60 percent of the surveyed population vaccinated their dogs for all the diseases. Majority of the dog owners (85 %) of the population were followed proper vaccination schedule for their dog. These findings were similar to the finding of Selvakkumar (2021) in Rajapalayam dog. Similar findings were reported by Hedge *et al.* (2009) in Akola city of Vidarbha region in Maharashtra state.

The research findings on Preference of breed and feeding practices for dog rearing in Nagpur city of Maharashtra revealed that most of the dog breeders fed their dog with the feed prepared for their family 2 to 3 times a day (Sawaimul *et al.*, 2009) and in the present study, nearly 75 percent of the dog owners do not prepare a special food for their dogs and share the food prepared for their use.

Conclusion

Based upon the body weight and other morphometric traits, Kombai dogs are fall under the category of mid-sized hound dog. Majority of the dog owners were not following the full vaccination schedule and deworming schedule for their dogs. Recognition by NBAGR is timely need for this dog for

conservation and popularization.

Conflict of interest

Authors have no conflict of interest in this study.

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