

PHYSICAL AND PERFORMANCE CHARACTERISTICS OF RAJAPALAYAM DOGS OF TAMIL NADU

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Abstract: The Rajapalayam dog, a medium-sized, sight-hound breed seen in south India, is studied to assess the distribution and breed characteristics. The breeding tract is Rajapalayam taluk in Virudhunagar district of southern Tamil Nadu. The trademark features are white coat, pink nostrils, golden brown eyes, broad chest and tucked up abdomen. The overall means of body length, height at withers and chest girth in adults were 58.26 ± 0.62 , 58.46 ± 0.60 and 63.88 ± 0.90 cm respectively. Sex had significant effect ($P < 0.05$) on body length and chest girth and highly significant effect ($P < 0.01$) on height at withers. This study shows that Rajapalayam breed is a unique germplasm, requiring immediate conservation measures.

Keywords: Morphology, morphometry, performance characteristics, Rajapalayam dog.

Introduction

Rajapalayam is the most popular dog in south India and one of the four indigenous breeds of dogs available in the state of Tamil Nadu. It was described as the companion of royalty and aristocracy in southern India, particularly in the town of Rajapalayam in Virudhunagar district (Srinivasan, 2011) and also known as Paleiyakaran and Poligar Hound. These dogs were in fact trained to fight and mercilessly attack the British Cavalry during the Carnatic Wars. Only a few preliminary studies have been made so far about this wonderful breed. Hence the present study was undertaken to assess the breed characteristics using morphometric measurements and physical traits.

MATERIALS AND METHODS

The study was carried out during December, 2013 in Rajapalayam town of Virudhunagar district in southern Tamil Nadu. A total of 50 dogs reared at different villages were used in this study. Age of the dog was recorded as per the information provided by the owners. Various physical traits like body colour, shape of face, eyes, nostrils, patches present

on the body and morphology of ear, chest, abdomen and tail were recorded after careful visual as well as physical examination.

Morphometric measurements were recorded in cm with a precision of 0.5 cm when the animal was in normal standing position. The morphometric parameters such as body length, length of head, length of muzzle, length of tail, height at withers, height at rump, chest girth, belly girth, ear length and ear width were recorded as suggested by Gonzalez *et al.* (2011) and Leite *et al.* (2011). The data collected were subjected to standard statistical analyses as per Snedecor and Cochran (1989). Student's "t" test was carried out to find any significant difference in body length, height at withers and chest girth between sexes.

RESULTS AND DISCUSSION

The main breeding tract of Rajapalayam dogs was found to be the Rajapalayam taluk in Virudhunagar district. The dogs were also bred in and around the Rajapalayam area, such as Muhavoor, Ayyanarkovil, Sundaranachiapuram, Malayadipatti, Seithur and Duraisampuram. More than 150 Rajapalayam dogs are being reared in the main breeding tract itself. In addition, eight (5 females and 3 males) adult dogs are also being maintained in the Dog Breeding Unit, Veterinary Hospital, Chennai under the Animal Husbandry Department, Govt. of Tamil Nadu. This centre breeds the Rajapalayam dogs and puppies are sold to needy pet owners in and around Chennai city. The breeding tract is having a sub-tropical climate and generally dry. Annual rainfall of the breeding tract varied from about 724 to 913 mm (the average being 799.8 mm). The relative humidity ranges between 65 and 85 percent in the mornings. The annual mean minimum and maximum temperatures are 23.78°C and 33.95°C respectively.

The predominant body colour of Rajapalayam dog is pristine white (Fig. 1 to 3) and rarely brown spot markings are found on the back and sometimes on ears. The skin is tight and pink in colour. The coat is short, smooth and beautiful. The dogs have dome shaped head which is white in colour with pink nostrils, golden brown eyes and white eyelashes. The ears are semi-drooping or pendant. The neck is splendour, short and muscular. The body is compact with broad chest and tucked up abdomen giving an appearance of hound type dog. Legs are long, moderately muscular and strong enabling them for fast running. The tail is long, slightly curved upwards and is thin towards the end. The number of dogs maintained by the villagers has gone down in recent days. Most of the purebred animals are now with the village breeders only. The unique features such as broad muscular chest, tucked up waist,

pristine solid white coat, a pink nose and golden-coloured eyes were also observed in an earlier study by Ravimurugan and Kumaravelu (2008).

The means for various morphometric measurements are furnished in Table 1. The overall means for the principal body measurements such as body length, height at withers and chest girth were found to be 58.26 ± 0.62 , 58.46 ± 0.60 and 63.88 ± 0.90 cm respectively. The tail length averaged 34.28 ± 0.49 cm. There was a highly significant ($P < 0.01$) difference between sexes for height at withers. In body length and chest girth also, sex was found to differ significantly ($P < 0.05$). Previous study by Porchezian and Sundaravinayaki (2010) on 20 Rajapalayam dogs showed higher height (66.4 ± 0.54 cm), girth (67.7 ± 0.33 cm), body length (68.01 ± 0.62 cm), tail length (41.7 ± 0.33 cm), ear length (12.6 ± 0.27 cm) and ear width (11.1 ± 0.23 cm).

The mean height at withers suggest that Rajapalayam is a medium-sized dog according to Yilmaz and Ertugrul (2011) who classified the medium sized dogs based on height (51-70 cm). The mean belly girth and chest girth indicate the hound type as in sight hound anatomy, the hound type dogs should have a deep chest and narrow abdomen. Mean height observed in the present study is shorter than that of Rampur Greyhound (60-75cm) and Saluki (58-71cm) dogs (Yilmaz and Ertugrul, 2011).

Breeding of Rajapalayam dogs is done by natural service. In a single whelping, four to eight puppies (Fig. 2) are delivered. The age at first heat in female dogs ranged from 12 to 16 months. They are first allowed for mating at around 20 month of age and their age at first whelping ranged from 22 to 26 months. Usually in a year, single whelping takes place with a whelping interval of 8 to 10 months. Most of them use the males from the same litter for breeding which would result in considerable amount of inbreeding. Probably, this has led to birth of blind or deaf puppies. These dogs are fed twice a day. No separate housing is provided. Pups are dewormed once in a month up to three months of age. Adult dogs are dewormed once in three months. All dogs are regularly vaccinated against rabies while multicomponent vaccines are not regularly administered. They are found to be very affectionate and caring to the owner and at the same time wary of strangers.

This study shows that Rajapalayam dog breed is a medium-sized indigenous sight hound dog of Tamil Nadu. The population size of this breed is decreasing and purity of the breed will be at risk in future. It is high time to initiate conservation of this unique canine genetic resource.

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Table 1. Mean \pm S.E. (cm) of body measurements of adult Rajapalayam dogs

S.No.	Morphometric variable	Male (n = 9)	Female (n = 26)	Overall (n = 35)
1	Body length	60.67* \pm 1.09 (5.40)	57.42* \pm 0.68 (6.07)	58.26 \pm 0.62 (6.32)
2	Length of head	16.67 \pm 0.69 (12.37)	16.25 \pm 0.30 (9.54)	16.36 \pm 0.28 (10.23)
3	Muzzle length	9.78 \pm 0.15 (4.51)	9.54 \pm 0.13 (6.78)	9.6 \pm 0.10 (6.29)
4	Tail length	35.55 \pm 1.01 (8.57)	33.85 \pm 0.56 (8.43)	34.28 \pm 0.49 (8.62)
5	Height at withers	61.22** \pm 0.94	57.5** \pm 0.65	58.46 \pm 0.60

		(4.60)	(5.74)	(6.07)
6	Height at rump	61.55 ± 1.03 (5.01)	57.65 ± 0.67 (5.93)	58.66 ± 0.63 (6.34)
7	Chest girth	67.11* ± 1.65 (7.40)	62.77* ± 1.00 (8.16)	63.88 ± 0.90 (8.40)
8	Belly girth	51.89 ± 1.94 (11.25)	48.88 ± 1.32 (13.77)	49.66 ± 1.11 (13.22)
9	Ear length	11.33 ± 0.55 (14.63)	10.52 ± 0.25 (12.36)	10.73 ± 0.24 (13.25)
10	Ear width	5.44 ± 0.15 (8.52)	5.58 ± 0.43 (39.17)	5.26 ± 0.15 (17.62)

Figures in parentheses indicate percent co-efficient of variation. * - Significant ($P < 0.05$); ** - Highly significant ($P < 0.01$).



Fig 1. Rajapalayam male dog **Fig 2.** Rajapalayam female with pups **Fig 3.** Rajapalayam young dogs