

**MORPHOLOGICAL AND MOLECULAR ANALYSIS OF MICROFILARIA
AMONG DOGS IN SELECTED DIVISIONS IN THE
KURUNEGALA DISTRICT, SRI LANKA**

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Kurunegala district in Sri Lanka is an endemic region for canine filariasis with limitations in recent studies. The high vector density in Kurunegala and its large canine population enables the transmission of canine filariasis. Since all Sri Lankan canine filaria are zoonotic, they have the potential to spread and cause disease in human hosts, threatening the filariasis-free national status. The main objective of this study was to determine the overall microfilaria prevalence among dogs in Kurunegala. In addition, this study also aims to determine if there is an association between canine filariasis and factors like age, sex, and the urban/ rural nature of dog locations. A total of 70 blood samples (calculated using the Ministry of Health 1:6 dog to human population ratio) according to 3 criteria; age (< 1 yr., 1-3 yrs., and >3 yrs.), sex (male and female) and urban/ rural nature (based on population density), were collected from dogs in 14 veterinary divisions in Kurunegala selected by simple random sampling. All samples were subjected to morphological analysis by the modified Knott's test and Leishman stain. Positive microfilaria samples were used in molecular analysis targeting the 5.8S-ITS2-28S region. A higher overall prevalence rate was observed in the Modified Knott's test (32.8%) relative to the Leishman stain (30.0%) due to it being a concentration technique. The main filarial parasite identified was *Dirofilaria repens*, which was confirmed by molecular characterization (Fragment size 484 bp). *Dirofilaria immitis* was not observed during this study. This study did not find a statistically significant association between the sex ($p = 0.179$), urban/rural nature ($p = 0.088$) and age ($p = 0.133$) of dogs with the prevalence of canine filariasis. The continuous presence of canine filariasis at relatively high rates in this region highlights the need for greater disease surveillance, vector control methods, and awareness among dog owners.

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