# Prevalence and molecular identification of*Hepatozoon* infection inworking dogs of the Sri Lanka Air Force, free-roaming, and privately-owned dogs: an island-wide survey

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**Introduction and Objectives:**Canine hepatozoonosis is a tick-borne protozoan disease caused by *Hepatozoon* spp. Two species are currently known to infect dogs: *Hepatozoon canis* and *H. americanum*. Although *H. canis* generally causes a chronic infection with relatively mild clinical alterations compared to *H. americanum*, infections by *H. canis* can be life-threatening.

**Methods:** An island-wide survey of canine hepatozoonosis infection was carried out, collecting blood samples from dogs in the Sri Lanka Air Force (SLAF) establishments, free-roaming and privately-owned dogs. Giemsa-stained thin blood smears were observed under light microscopy. Microscopically positive samples were subjected to DNA isolation using 18S rDNA gene primers and sequencing. Sampling was carried out from 2016 to 2019. A total of 668 dogs were sampled, comprising 173 dogs in the three SLAF establishments, 115 free-roaming and 90 owned dogs living in proximity to SLAF establishments and 90 free-roaming and 200 owned dogs that were taken to veterinary clinics island-wide.

**Results:** Only one privately-owned dog (prevalence = 0.15%) from the Colombo Pet Clinic was infected with *Hepatozoon*. It was a two-year-old male Dachshund with clinical signs. Later in 2020, 65 dogs at the Katunayake SLAF establishment were resampled and one dog (prevalence = 1.5%) was found infected - a nine-month-old male Labrador with clinical signs. Phylogenetic analysis of the sequence from the privately-owned dog confirmed the *Hepatozoon canis* and showed that it had close affinities to Indian and Italian species.

**Conclusions:** Results show a very low prevalence of *Hepatozoon* infection among dogs in Sri Lanka. However, it is important to examine blood samples of these dogs for parasite DNA as infections may go undetected if only microscopy is used in diagnosis. Especially free-roaming dogs without clinical signs could have microscopically negative low parasitemia and may act as reservoirs of infection.

*Keywords: Canine hepatozoonosis, Military Working dogs, Hepatozoon canis*

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