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Gastro-intestinal parasites of domestic, semi-domestic and stray dogs in Hantana, Kandy district

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Gastrointestinal (GI) parasites in dogs are found worldwide but they are more prevalent in the tropics and subtropics, especially in developing countries where communities are socioeconomically challenged. Some of these infections are zoonoses.

Faecal samples were collected from stray, domestic and semi-domestic dogs from Hantana (n=30/group) immediately after defecation, between June 2010 and March 2011. Samples were processed using modified salt flotation, Sheather's sucrose flotation and by direct iodine smears according to the WHO guide for morphological identification. Some helminth identifications were confirmed by amplification of ITS 2 and COI regions using appropriate primers. *Toxocara* and *Toxascaris* eggs were cultured to obtain larvae. Of the 90 dogs examined, 81 (90.0%) were infected with one or more GI parasites. Mixed infections were more common (72.8%) than single infections (27.2%). Prevalence of infection was higher in the stray dogs (93.3%) than in semi-domestic dogs (86.7%) and domestic dogs (86.7%), but this difference was not statistically significant (χ^2 test, P>0.05). However, worm burden and number of parasite species were much lower in domestic dogs. A total of 13 parasite species were found, of which *Ancylostoma sp.* was the most prevalent (73.3%). Other parasites found were *Toxocara canis* (27.8%), *Spirocerca lupi* (22.2%), *Entamoeba sp.* (17.7%), *Toxascaris sp.* (12.2%), *Trichuris vulpis* (12.2%), *Blastocystis sp.* (12.2%), *Strongyloides sp.* (11.1%), *Isospora sp.* (7.8%), *Capillaria aerophyla* (5.6%), *Giardia sp.* (2.2%), unidentified trematode sp. (2.2%) and *Cyclospora sp.* (1.1%). More females were infected with GI parasites than males, with a significant difference among the stray dogs (χ^2 test, p=0.0152). This may be due to immune suppression of females during pregnancy and lactation. No significant differences were detected in the prevalence of GI infections between puppies and adults.

The high prevalence of GI parasites, especially zoonotic species such as *Ancylostoma, T. canis, Strongyloides, T. vulpis* and *Toxascaris* may constitute a threat to the residents of Hantana and authorities should provide regular mobile veterinary clinics and educate the public. The use of broad scale anthelmintics may be the reason for the lower helminth species diversity and worm burden in domestic dogs. Regular deworming with specific antihelminthics and anti-protozaon treatments after faecal examinations should be carried out.

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