

Parasitic helminth stages among companion animals and in soil of selected public and home environments of Gampaha and Colombo districts, Sri Lanka.

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INTRODUCTION & AIM

- Soil contamination with canine & feline excreta is widespread posing a public health hazard in the form of zoonotic soil transmitted helminth (STH) infections.
- Scientific data on STH infections among companion animals and soil contamination rates with STH stages were limited in Western Sri Lanka.
- The aim was to describe the rates of zoonotic STH infections among companion animals and STH stages in soil in Western Sri Lanka.

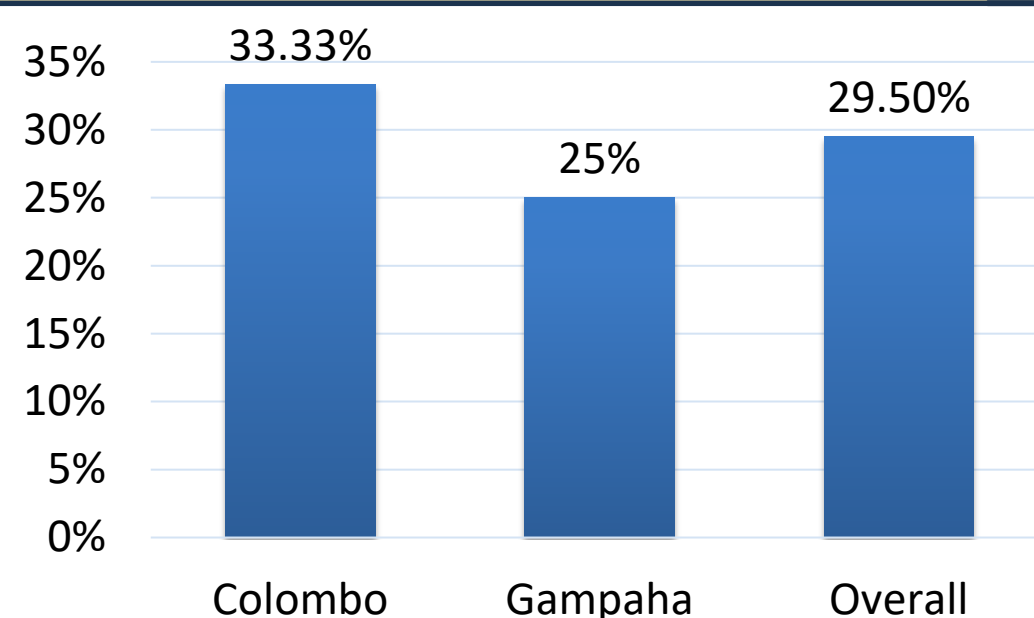
METHOD

- A descriptive study was conducted in Colombo and Gampaha districts from May 2024 – January 2026,
- Fecal samples were collected from veterinary clinic attendee cats and dogs in Colombo District and examined microscopically for parasite stages using direct wet smears.
- Species identification was based on morphology.
- A questionnaire was administered to gather data on deworming history, defecation habits of animal participants.
- Sub-surface soil samples(200 g) were collected from randomly selected public and private premises using a 15×15 cm template.
- Soil samples were processed for helminth ova using the MgSO₄ flotation technique; Soil sifted →1g washed with 0.1% Tween 20 → mixed with saturated MgSO₄ flotation solution → centrifuged 500g/5 min →topped-up with Mgso4, coverslip kept for 5min on top, examined microscopically for helminth ova.
- Helminth larvae in soil were detected using the Baermann funnel technique; 5–10g soil submerged in water for 24h → fluid centrifuged → sediment examined for helminth larvae, identified morphologically.
- Data was analyzed using descriptive statistics.
- Ethical clearance was granted by the Ethics Review Committee, Faculty of Medicine, University of Kelaniya, Sri Lanka.

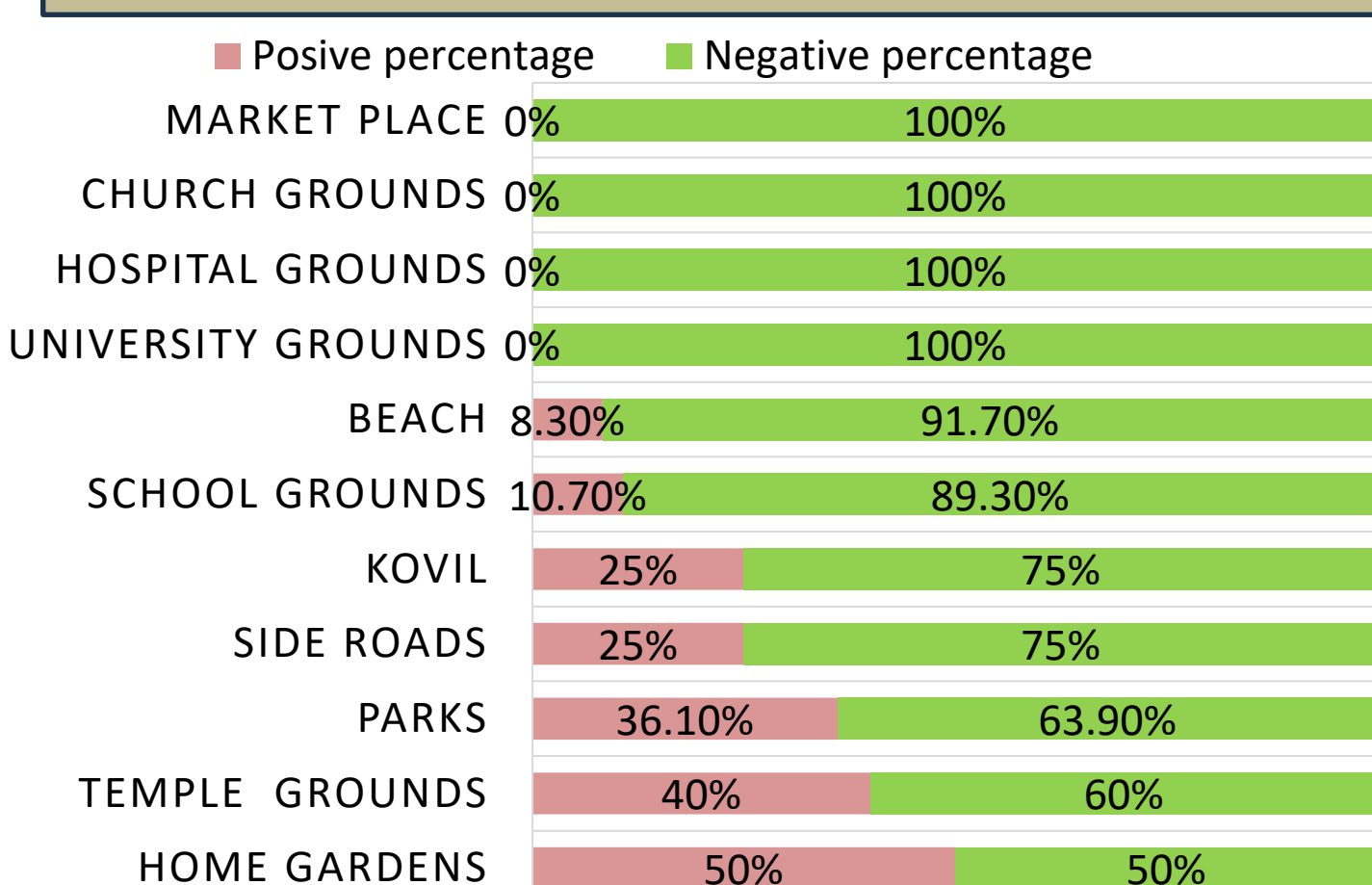
RESULTS & DISCUSSION

- 200 samples of soil were examined; Colombo n=108 & Gampaha n=92

District-wise and Overall STH prevalence in soil



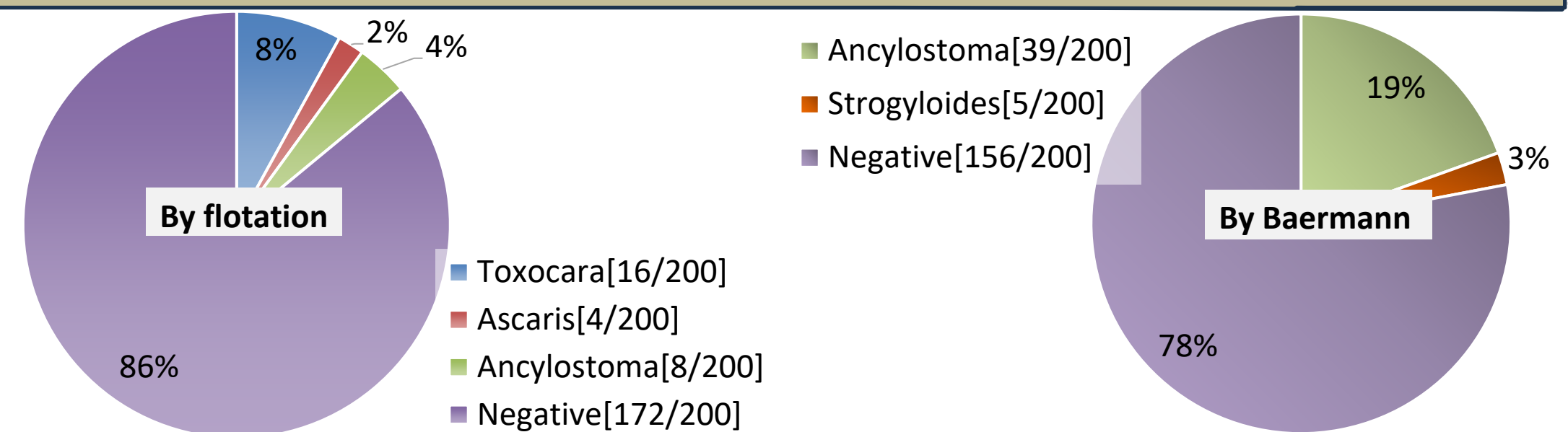
Soil contamination percentage in different environments



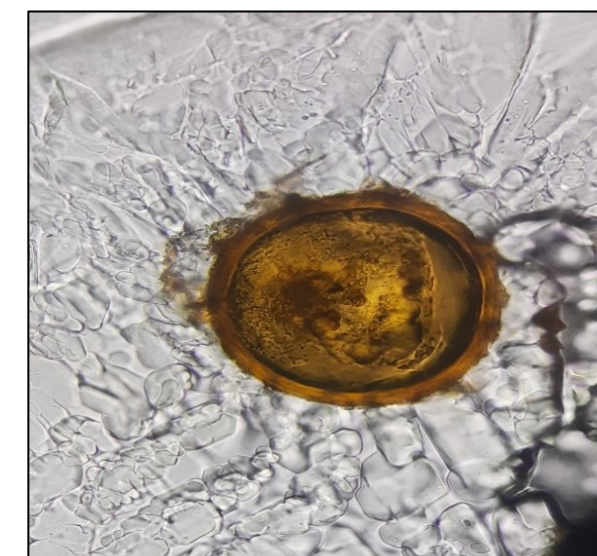
- The environments with the highest rates of soil contamination were home gardens (50%), Buddhist temple grounds (40%) and parks (36.1%)

- The underlying reasons for this outcome; majority (88.2%;15/17) of animal participants surveyed habitually defecated within the home-compound and many Buddhist temples in Sri Lanka provide refuge to stray cats and dogs.

Distribution of helminth species in soil detected by Baermann & flotation method



- *Toxocara spp* ova in soil were higher in the present survey (8%) compared to a survey carried out in the past in Gampaha and Kandy which reported contamination rates of 4% and 4.5% respectively(2).
- The presence of *Strongyloides stercoralis* larvae in soil (3%) was unexpected, as only a few previous reports exist despite its zoonotic potential.

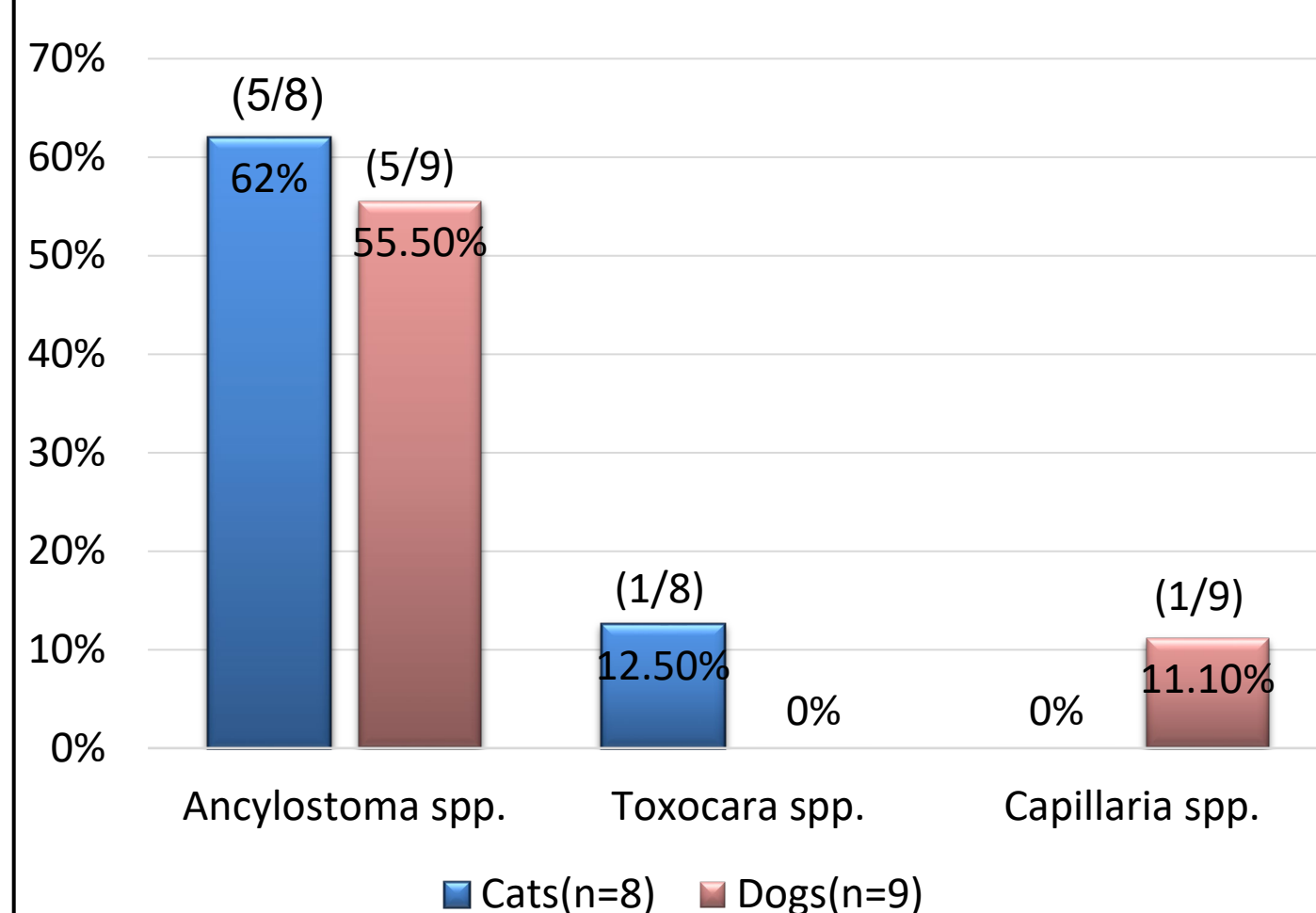


Ova of *Ascaris lumbricoides* x 400



Strongyloides sp. larvae x400

Prevalence of STH in animal excreta



- Overall prevalence of zoonotic hookworm infection was high, despite over 70%of animals being dewormed within the past 3 months.
- Species diversity was low in the current study, compared to past surveys, probably an effect of the small sample size(1,2)

CONCLUSION

- There appears to be widespread soil contamination with zoonotic STH stages in western Sri Lanka posing a threat to public health.
- We recommend health education of the public, routine deworming of pet-animals with effective anthelmintics, regular use of footwear, and use of protective gear & appliances during skin contact with soil such as when engaged in horticulture, and recreational activities.

FUTURE WORK / REFERENCES

1. Perera PK, Rajapakse RP, Rajakaruna RS. Gastrointestinal parasites of dogs in Hantana area in the Kandy district. *J Nat Sci Found Sri Lanka*. 2013;41:81–91.
2. Wickramasinghe H, Galgamuwa LS, Iddawela D. Canine intestinal parasitic infections and soil contamination by *Toxocara* spp. in selected areas of Sri Lanka. *Trop Parasitol*. 2020 Jul-Dec;10(2):114-119. doi: 10.4103/tp.TP_62_19. Epub 2021 Jan 25. PMID: 33747878; PMCID: