

EPIDEMIOLOGICAL STUDY ON ENDOPARASITES IN DOGS, IN SOUTHERN ROMANIA

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• Abstract

Endoparasites are the most common pathogens in dogs worldwide and of high relevance for the both veterinary medicine and public health, as some of them have also zoonotic potential. The aim of this study was to investigate the prevalence and intensity of endoparasite infections in dog populations in Southern Romania, according to their lifestyle. In total, 190 faecal samples were collected, individually for owned ($n=91$) and stray ($n=59$) dogs and collective ($n=40$) for the shelter dogs. All faecal samples were examined by using the Mini-FLOTAC technique for microscopic detecting and counting of parasite stages (helminth eggs or protozoa oocysts); the intensity of infection was expressed as eggs (EPG) or oocysts (OPG) per gram of faeces. Overall, 64.7% (95% CI: 57.49 - 71.52) of the samples were positive for at least one parasite infection, with higher prevalence in shelter and stray dogs, of 95.0% (95% CI: 83.08 - 99.39) and 91.5% (95% CI: 81.32 - 97.20), respectively, than in owned dogs (34.1%; 95% CI: 24.45 - 44.75). Among the parasites identified were helminths and protozoa, with the following prevalence and intensity (EPG or OPG: mean/maximum): Ancylostomidae, 40.0% (572/2370), *Trichuris vulpis*, 35.3% (284/3360), *Toxocara canis*, 22.1% (205/3120), *Toxascaris leonina*, 13.2% (503/4230), *Eucoleus* (syn. *Capillaria*) spp., 1.6% (62/125) and *Cystoisospora* spp., 1.6% (950/1085). The findings of the present study revealed a high prevalence and diversity of parasite infections, including parasite of zoonotic risk, in all dog categories, which must become a real concern for the both animal and public health..

• Introduction

- Endoparasites are among the most common pathogens in dogs, which are of high concern for both veterinary medicine and public health, due to their zoonotic involvement (Mitrea, 2011; Scaramozzino et al., 2018; Raza et al., 2018).
- Periodically conducting investigations on the presence and factors involved in transmission of endoparasites infections can help identify and possibly reduce the risk factors for animal and public health and as well for environmental contamination (Enăchescu et al., 2011; Costin et al., 2011).

❖ Aim of the study:

- to investigate the prevalence and intensity of endoparasites in dogs in Southern Romanian,
- to identify the associated risk factors.

• Materials and methods

➤ Animals and samples:

- A copro-parasitological study was carried out during of 2022-2024 period, in dogs originating from Bucharest and six counties (Prahova, Teleorman, Călărași, Giurgiu, Ilfov, Dâmbovița) in Southern Romania, including:

- stray dogs ($n=59$)
- shelter dogs ($n=446$),
- owned dogs ($n=91$)



fecal samples

- individually from stray and owned, dogs ($n=150$)
- collective from shelter dogs ($n=40$) (one / cage; each cage with 10-15 dogs)

- MiniFlotac: a quantitative method to determine the intensity of the identified endoparasites, by counting the eggs/oocyst per gram (EPG/OPG) of faeces (Maurelli et al., 2014; Ioniță & Mitrea, 2013).

➤ Investigations:

Mini FLOTAC technique
Microscopical examination
Confirm diagnosis

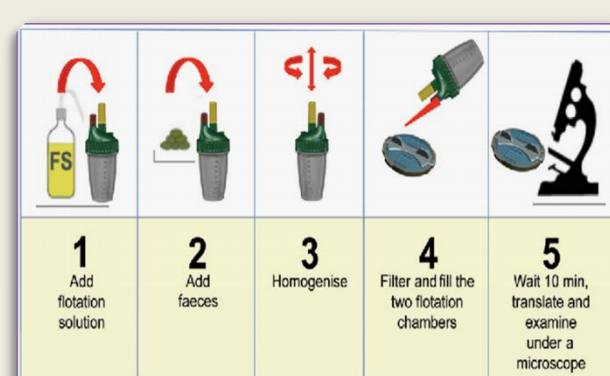
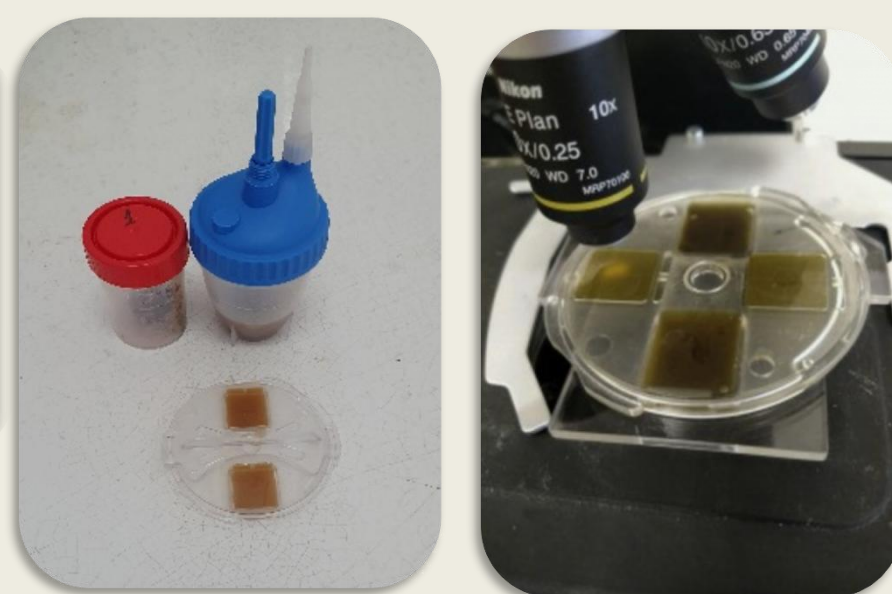


Figure 1. The work flow of the Mini-FLOTAC technique



• Acknowledgement

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• References

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• Results and Discussion

- 64.7% of samples were positive for at least one parasite infection, with significant prevalence values registered according to the lifestyle and age category (Fig. 2, 3).
- Among the parasites identified were helminths and protozoa, with the following prevalence and intensity (EPG or OPG: mean/maximum): Ancylostomidae, 40.0% (572/2370), *Trichuris vulpis*, 35.3% (284/3360), *Toxocara canis*, 22.1% (205/3120), *Toxascaris leonina*, 13.2% (503/4230), *Eucoleus* spp., 1.6% (62/125) and *Cystoisospora* spp., 1.6% (950/1085). (Fig. 4).

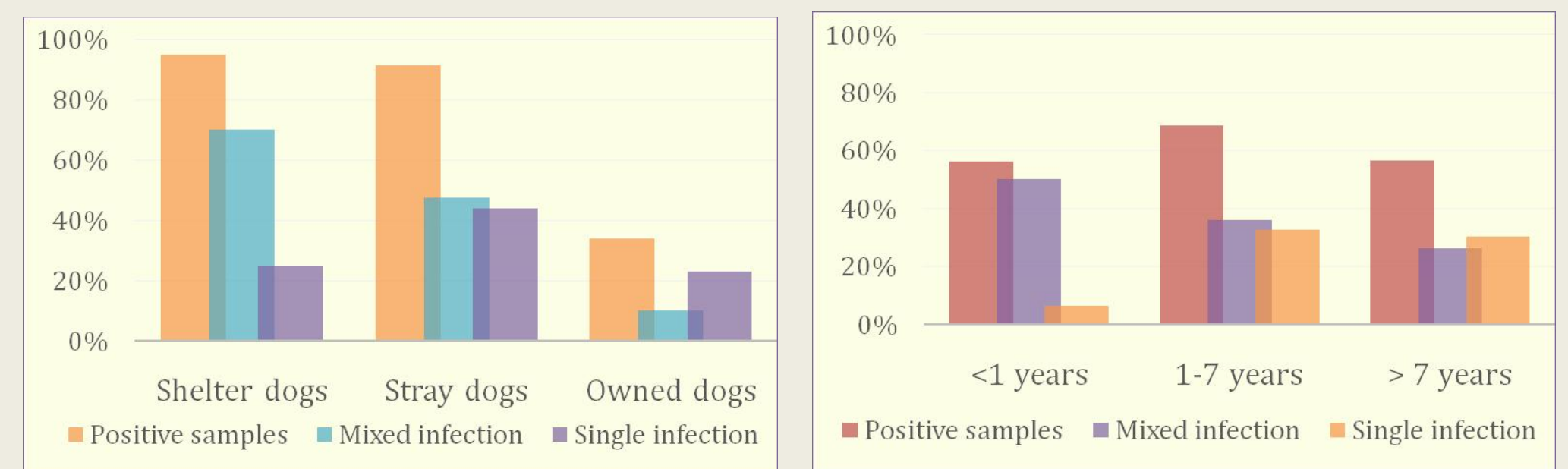


Figure 2. Prevalence of endoparasite infections in dogs, Southern Romania (according to the lifestyle and age category)

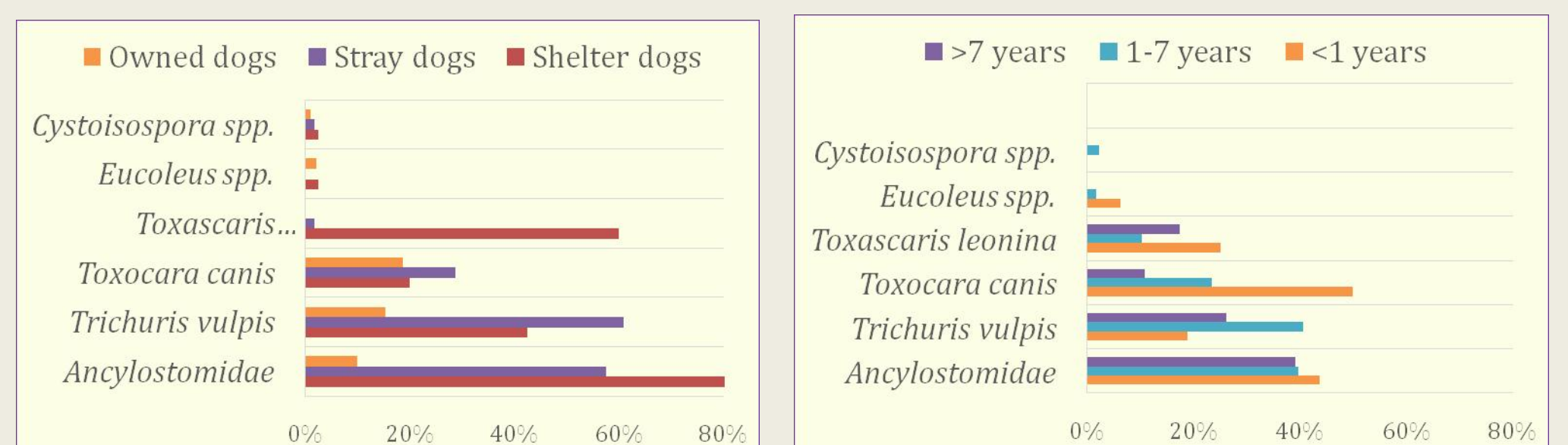


Figure 3. Endoparasitic infections stratified by species in dogs, Southern Romania (data stratified according to the lifestyle and age category)

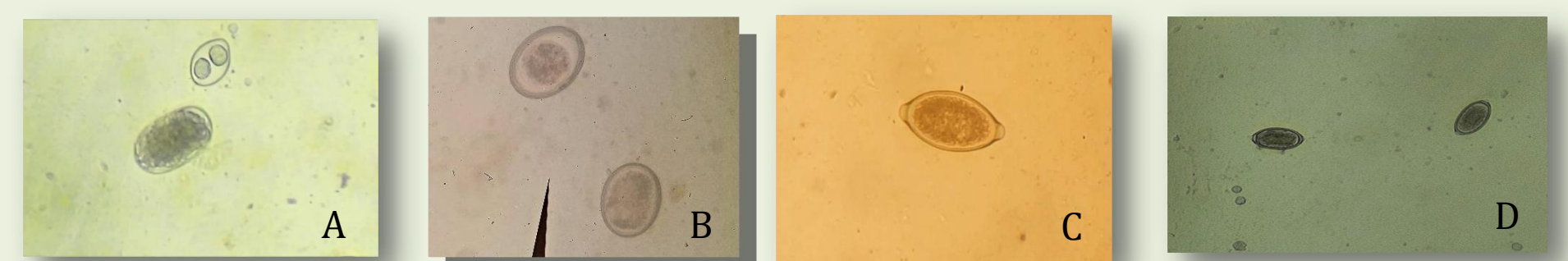


Figure 4. Endoparasitic stages microscopically identified in faeces in dogs, from Southern Romania: A) eggs of Ancylostomidae & oocysts of *Cystoisospora* spp. (x20); B) egg of *Toxocara canis* & *Toxascaris leonina* (x20); C) egg of *Trichuris vulpis* (x20); D) eggs of *Eucoleus* spp. (x10); E) (x10); F) (x10)

• Conclusions

- The findings of the present study revealed a high prevalence and intensity of parasite infections, including parasite of zoonotic risk, in all dog categories, in Southern Romania.
- In addition to the dispersal of potentially pathogens, the inadequate disposal of dog feces in public spaces leads to the increased spread of zoonotic parasites, which must become a real concern for both animal and public health.