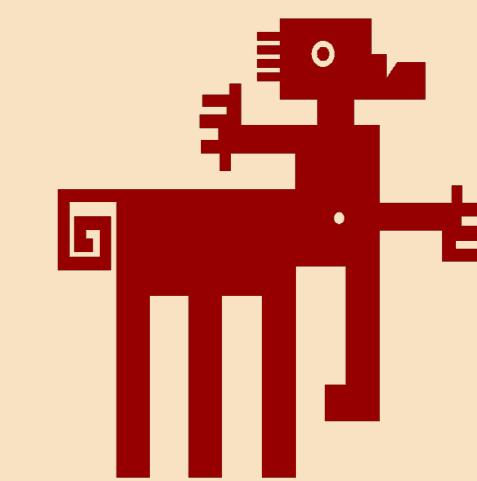


POTENTIALLY ZOONOTIC INTESTINAL PARASITES IN SHELTER DOGS



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INTRODUCTION

Canine shelters provide suitable conditions for the occurrence and spread of parasitic infections, especially intestinal parasites that spread by the oral-faecal route. Some of them as *Giardia* sp., *Cryptosporidium* spp., *Toxocara canis*, hookworms and *Echinococcus* spp. can represent a potential public health risk since natural transmission of parasitic infections from dogs to man may occur. Therefore, **the aim of this study was to detect intestinal parasites in shelter dogs, with special emphasis in those potentially zoonotic.**

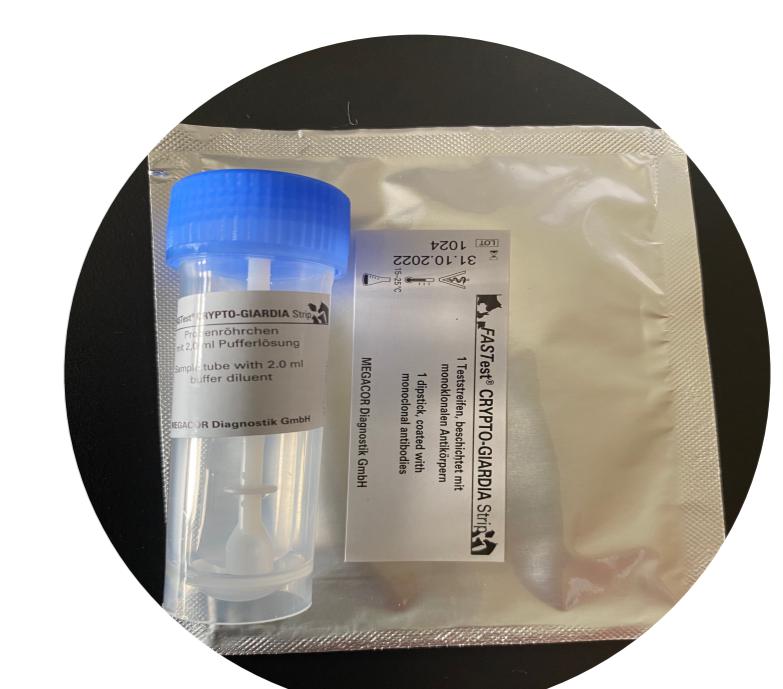
MATERIAL AND METHODS

- Fresh stool samples** were collected from different shelters.
- Deworming protocol and living conditions** were asked.
- A macroscopical examination and evaluation of faecal consistency*** were performed.

*By The Waltham Faeces® Scoring System that varies between grades 1 ("bullet like" stool) and 5 (entire liquid stool)

33% ZnSO₄ centrifugal-flotation technique

Sedimentation technique with Uranotest Copro®



Rapid immunochromatographic assay with FASTest® Crypto-Giardia Strip

RESULTS

- 29 samples** were collected from 4 different shelters from Barcelona and Tarragona.
- Animal were living in **communal cages** of 3-4 individuals.
- The overall **positivity** was 31,04% (n=9/29)
- The **faecal consistency** varied between **grades 2,5 and 5**

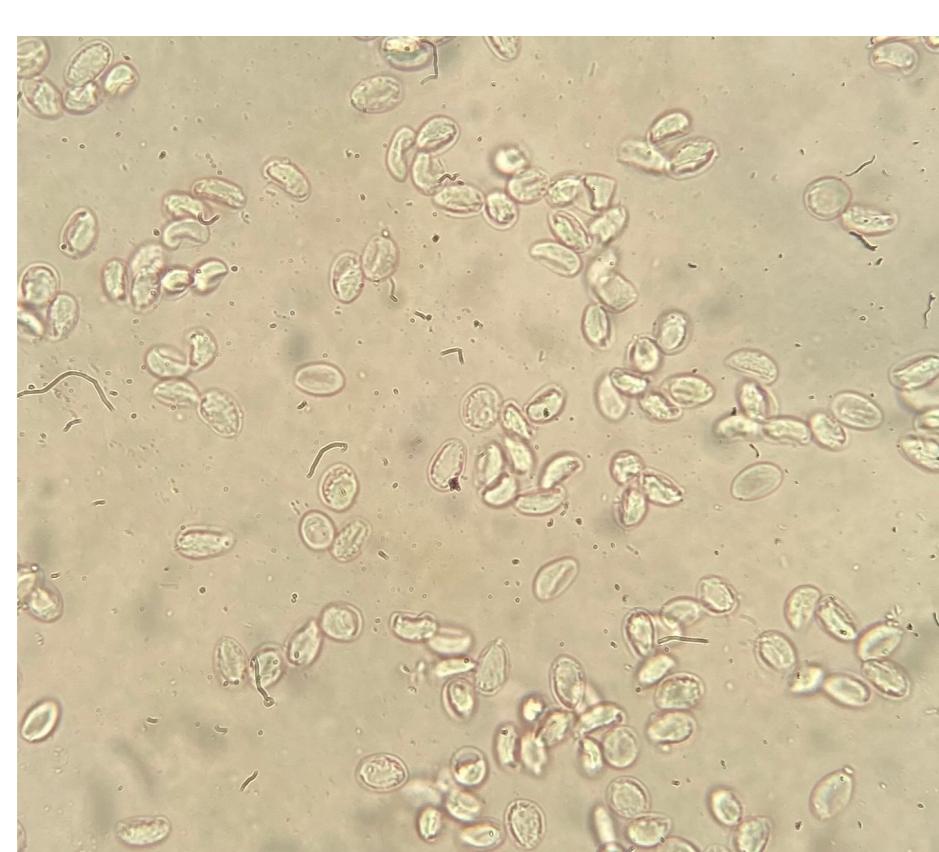
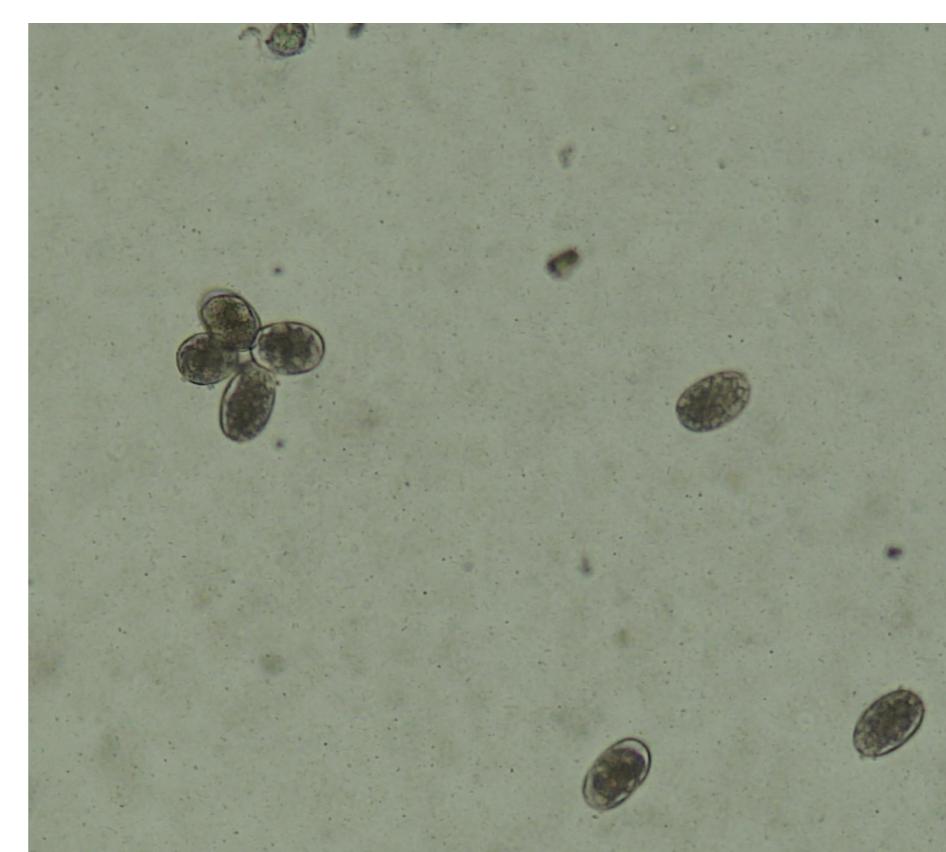
Figure 1: *Giardia* sp. cysts

Figure 2: Hookworms eggs

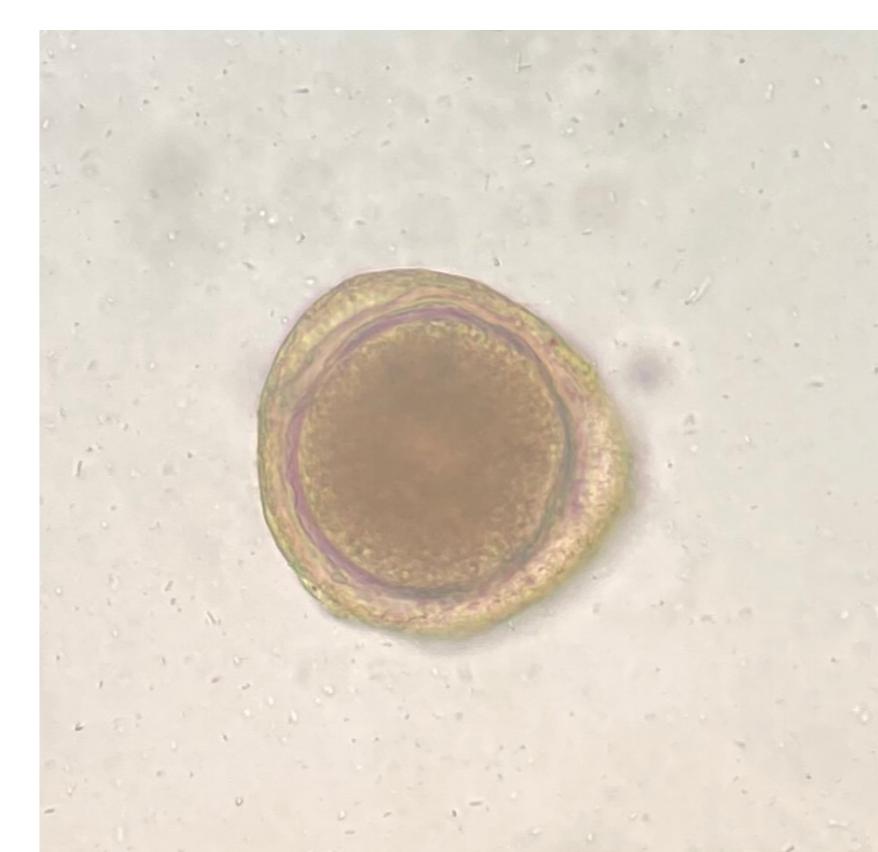
Figure 3: *Toxocara canis* egg

Figure 4: positive sample in the immunochromatographic assay

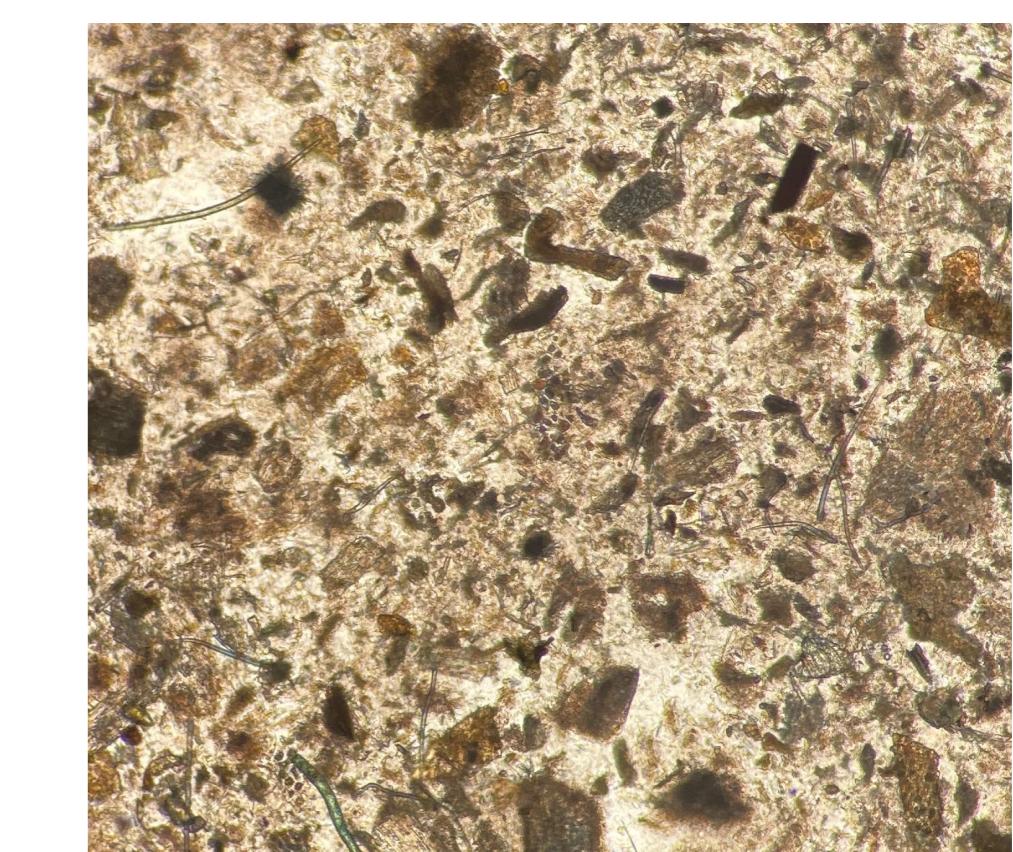


Figure 5: background from sedimentation technique

Parasites detected	Positivity (%)	Positive samples (n=29)	Nº of positive samples according to the technique used		
			33% ZnSO ₄ flotation technique	Sedimentation technique	Rapid immunochromatography
<i>Giardia</i> sp.	24,14%	7	6	0	1
Hookworms	3,45%	1	1	0	-
<i>Toxocara canis</i>	3,45%	1*	1	1	-

**T. canis* was detected in one sample by both ZnSO₄ flotation and sedimentation techniques

Table 1: Results for the coprological analysis and its classification according to the diagnostic technique used

Presence of intestinal parasites	Faecal consistency		9
	Soft stools (grade 3,5 – 5)	Normal stools (grade 1– 3)	
Positive dogs (+)	5	4	9
Negative dogs (-)	13	7	20
Total	18	11	29

Table 2: Comparison between faecal consistency and the presence of intestinal parasites ($p>0,05$)

Shelters	API ^a	Dosage	Frequency	Positive samples for each parasite		
				<i>Giardia</i> sp.	<i>T.canis</i>	Hookworms
Shelter 1		Single dose	Every 6 months	3	0	0
Shelter 2	PPF ^b	Single dose	Every 3-4 months	0	0	0
Shelter 3		Single dose	Every 3-4 months	4	1	1
Shelter 4		3 days dose	Every 3-4 months	0	0	0

^a Active pharmaceutical ingredient

^b Pyrantel, praziquantel and febantel combination

Table 3: Deworming protocol and positive samples for each shelter

CONCLUSIONS

- All the parasites found were potentially zoonotic.
- Giardia* sp. is the most frequent infection compare to helminth infection.
- The 33% ZnSO₄ centrifugal-flotation technique has given better results than sedimentation technique.
- No statistically significant differences were found between faecal consistency and the presence of intestinal parasites ($p>0,05$)