

## 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)

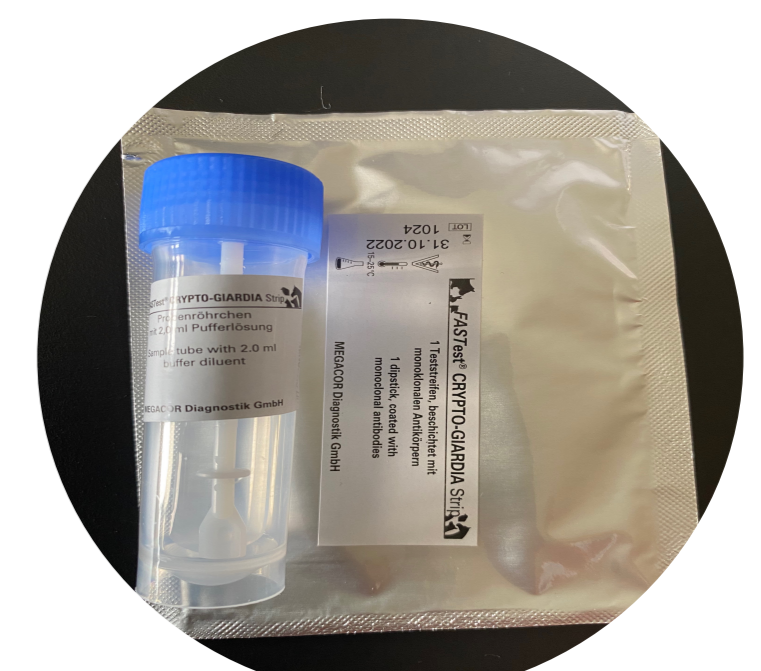
### COPROLOGICAL ANALYSIS



33% ZnSO<sub>4</sub> centrifugal-flotation technique



Sedimentation technique with Urantest Copro®



Rapid immunocromatographic assay with FASTest® Crypto-Giardia Strip

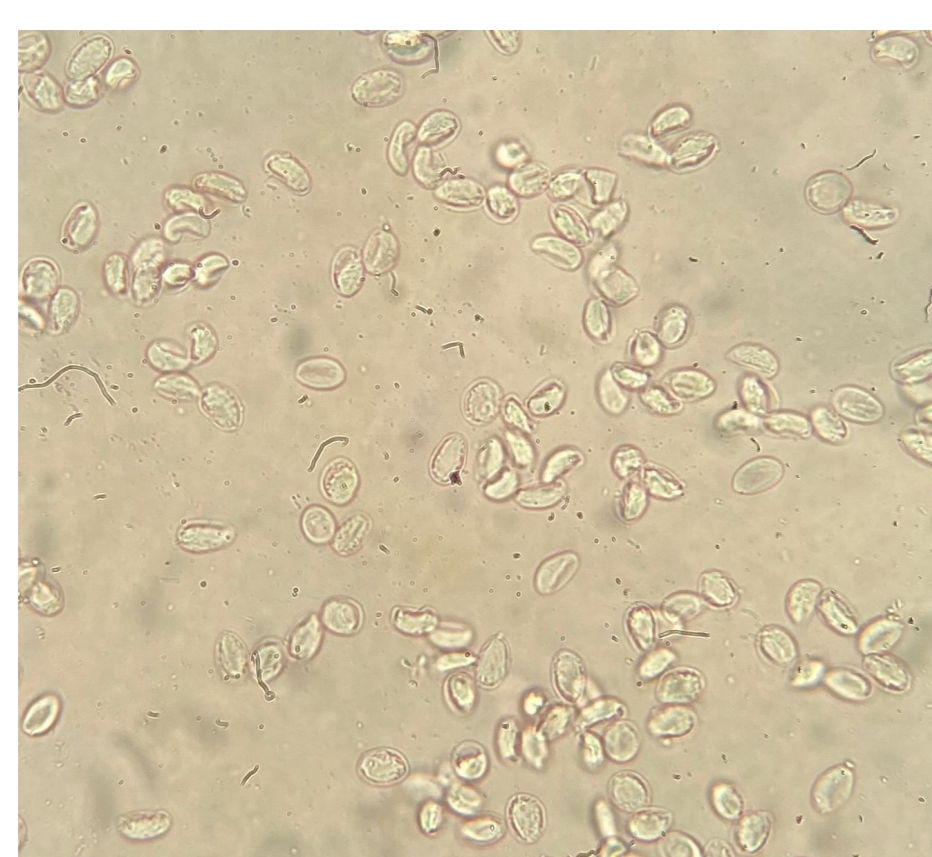
## RESULTS

- **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**

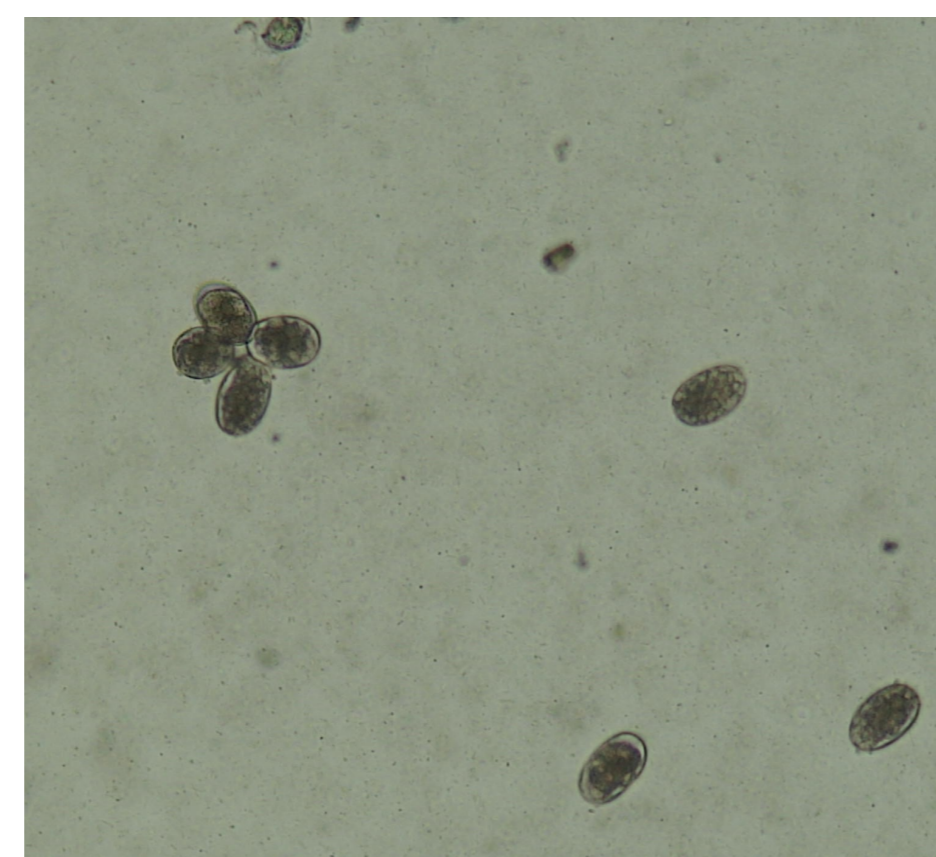
Parasites detected	Positivity (%)	Positive samples (n=29)	Nº of positive samples according to the technique used		
			33% ZnSO <sub>4</sub> flotation technique	Sedimentation technique	Rapid immunochromatography
<i>Giardia</i> sp.	24,14%	7	6	0	1
Hookworms	3,45%	1	1	0	-
<i>Toxocara canis</i>	3,45%	1*	1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

\**T. canis* was detected in one sample by both ZnSO<sub>4</sub> flotation and sedimentation techniques

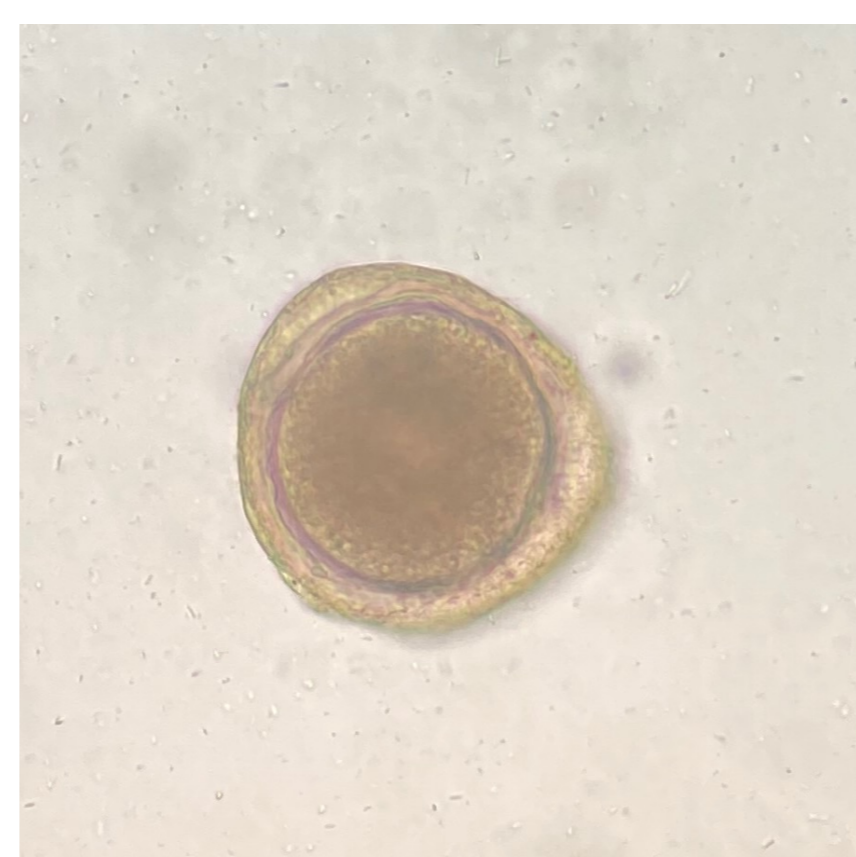
**Table 1:** Results for the coprological analysis and its classification according to the diagnostic technique used



**Figure 1:** *Giardia* sp. cysts



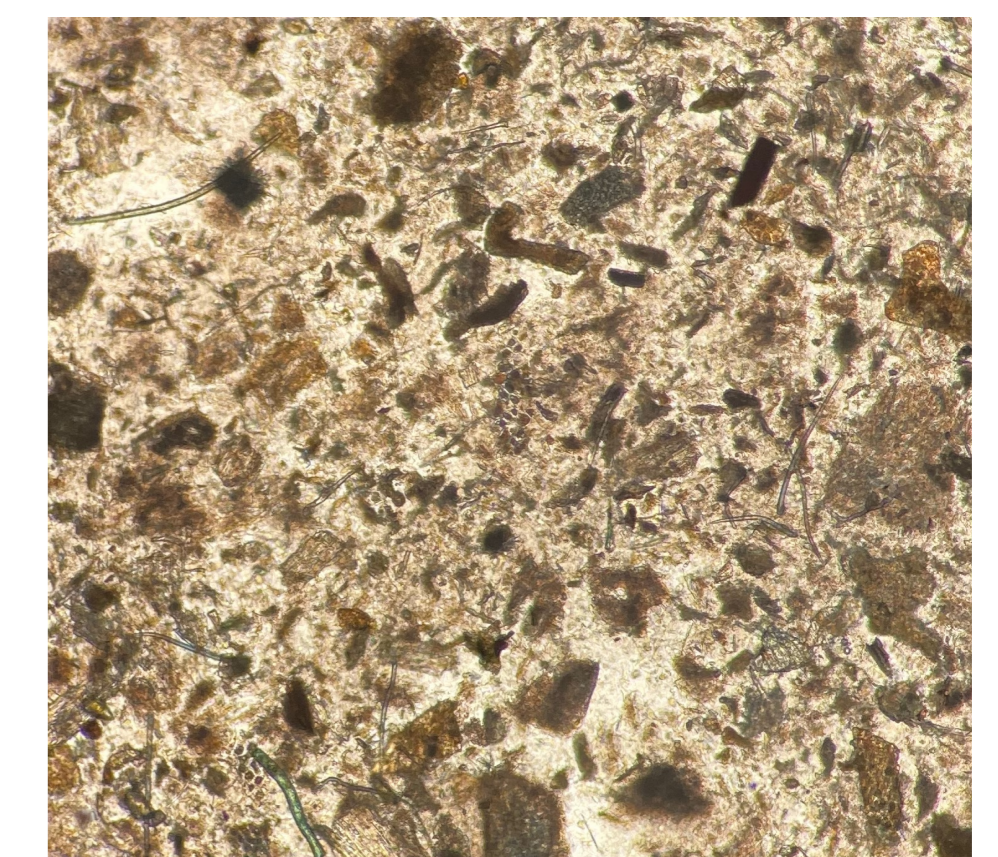
**Figure 2:** Hookworms eggs



**Figure 3:** *Toxocara canis* egg



**Figure 4:** positive sample in the immunochromatographic assay



**Figure 5:** background from sedimentation technique

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

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

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

<sup>a</sup> Active pharmaceutical ingredient

<sup>b</sup> 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% ZnSO<sub>4</sub> 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** ( $p>0,05$ )