

Intestinal Parasites in Dogs from the Center-west of Portugal

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Summary

Environmental contamination by dog faeces in public areas is considered a risk factor to Public Health. Therefore, during a period of five years (2000-2005) a parasitological study on dog faeces was performed in Center-West region of Portugal. Coprological exams were performed.

Out of 2806 samples analysed, 792 (28,23%) showed eggs/oocysts of intestinal parasites, with higher prevalences in rural areas (53,35%). Specimen eggs belonging to the families Taeniidae, Dipylidiidae, Ancylostomatidae, Ascarididae, Trichuridae and Spirocercidae and oocysts from Eimeriidae and Sarcocystidae, were identified.

The results obtained pointed out to the continuity of prophylactic measures which has already been implemented in the studies areas.

Introduction

Environmental contamination by dog faeces in urban and rural public spaces is considered a risk factor to Public Health, as dogs can be carriers of pathogenic agents transmissible to human.

The purpose of this study was to identify the type and degree of parasitological contamination by dog faeces in pavements, streets, gardens and children's playgrounds of urban and rural areas of Ribatejo-Oeste (RO) and Vale do Tejo (VT) regions in Center-West of Portugal.

Materials and Methods

During a period of five years (2000-2005), a parasitological study on dog faeces was performed in 13 urban and 41 rural areas of RO and VT. In urban areas, faeces samples were monthly collected from soil, during one complete year, with a total of 2433 samples. Between May and August 2005, in the rural areas faeces samples were acquired from 10% of the dog population of these areas, during the official anti-rage campaign, with an overall of 373 samples. Coprological exams, using Willis technique and spontaneous sedimentation were performed.

Results

Out of 2806 samples analysed, 792 (28,23%) showed eggs/oocysts of intestinal parasites. The prevalences were higher in rural areas with a global rate of 53,35%. This predominance was also observed in the study by regions, with 56,28% in RO and 36,36% in VT regions. In general, results evidenced were always superior in RO region in opposition to the VT region (Fig. 1).

Intestinal parasites eggs or oocysts were identified as belonging to parasites of the followings families: Taeniidae (1,14%), Dipylidiidae (3,66%) (PLATYHELMINTHES), Ancylostomatidae (71,97%), Ascarididae (15,91%), Trichuridae (29,92%), Spirocercidae (0,12%) (NEMATODA), Eimeriidae (2,02%) and Sarcocystidae (0,38%) (APICOMPLEXA).

Spirocercidae and Sarcocystidae were only observed in samples from urban areas. The higher prevalence was observed on the Ancylostomatidae and Trichuridae families and their major values were reached in the rural areas (Fig. 2).

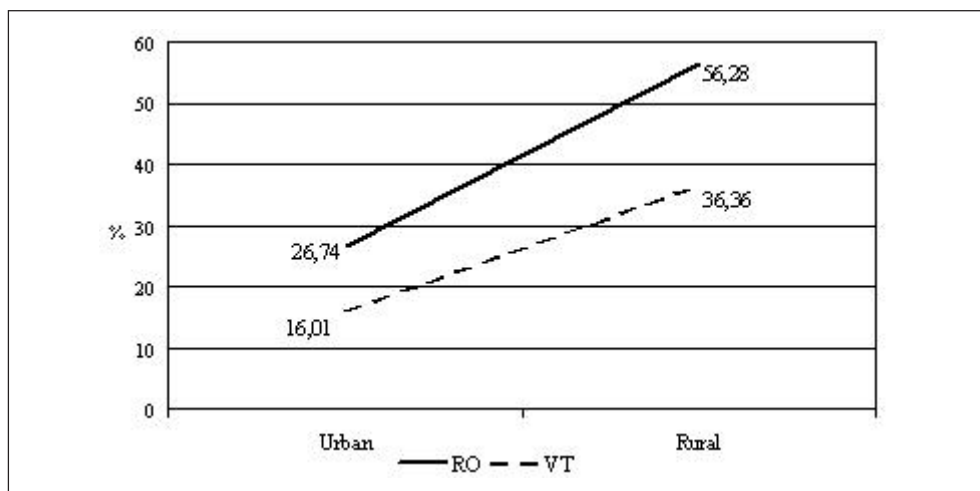


Figure 1 – Prevalences of intestinal parasites in dogs from rural and urban areas of the Ribatejo-Oeste (RO) and Vale do Tejo (VT) regions.

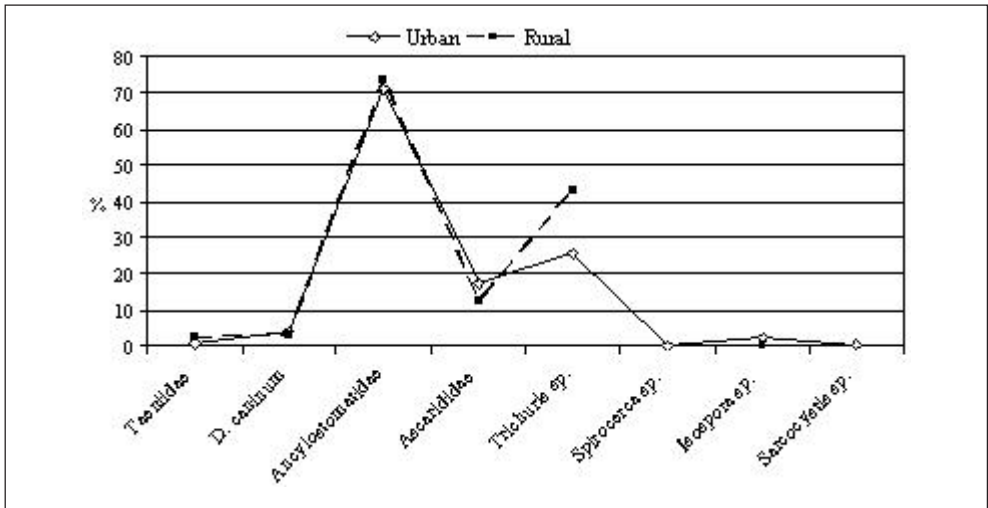


Figure 2 – Eggs/oocysts output of intestinal parasites in dogs from rural and urban areas of Ribatejo-Oeste and Vale do Tejo regions.

Simple infections were predominant, however, in the rural areas, double associations were 13,96% higher than those registered in urban neighbourhoods.

Infections were more severe in the VT region, where the parasitological diversity were higher and multiple infections (double, triple and superior) were always greater than those observed in the RO regions, with 23,26 %/ 18,74 % in the urban and 40,00 %/32,40 % in the rural areas, respectively.

Conclusions

The type of parasitism and the prevalence found in dogs from the analysed regions was similar to other results mentioned by several authors in Portugal (Travanca & Grácio, 1997; Crespo *et al.*, 1998; Crespo & Jorge, 2000) as well as in other countries (Hoffman *et al.*, 2000; Kagira & Kanyari, 2000; Dunn *et al.*, 2002; Andresniuk *et al.*, 2003; Fourie *et al.*, 2003).

The highest *Toxocara* sp. values observed in urban areas, suggest that sampling was mainly performed on puppies faeces, in which this kind of parasitism is more frequent. In contrast, the rural areas exhibit a majority of a hunting dog population, with older animals. Another contrast was verified on parasite diversity, which was minor in the rural areas, where oocysts of *Sarcocystis* and *Isospora* had not been noticed. This fact could be associated with the period of sampling that took place during the warmer months, when environmental conditions are not suitable for the protozoa life cycle.

Although a great spatial variability in the environmental contamination by immature stages of dog parasites was registered during this study, the results

obtained show a major level of contamination in rural areas, increasing the environmental risk of acquiring infection, for animal and man.

In fact, in some of the studied areas control measures had already been implemented by governmental entities. However, the need still exists to incentive the population to cooperate with those entities in order to increase our environmental quality of urban and rural areas.

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