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BRIEF COMMUNICATION

THE FREQUENCY RATE OF *Toxocara* SPECIES CONTAMINATION IN SOIL SAMPLES FROM PUBLIC YARDS IN A URBAN AREA "PAYATHAI", BANGKOK, THAILAND

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SUMMARY

Toxocara species are most common roundworms of Canidae and Felidae. Human toxocariasis develops by ingesting of embryonated eggs in contaminated soil. There is no previous report of *Toxocara* contamination in the soil samples from the public areas in Bangkok. For this reason our study have been carried out to examine the frequency of *Toxocara* eggs in public yards in Bangkok, Thailand. A total of 175 sand and clay samples were collected and examined for parasite eggs. According to this study, *Toxocara* eggs were detected from 10 (5.71%) of 175 soil samples. The high rate of contamination in this study implies the importance of the control of this possible zoonotic disease: control of abandon of dogs and cats, is still necessary.

KEYWORDS: *Toxocara*; Soil.

Toxocara species are most common roundworms of Canidae and Felidae. Both *T. canis* and *T. cati* are considered the causative agents of human toxocariasis[2]. *T. canis* is well-known by its unique transmission mode, transplacental migration, in the definite host. The infection rates are very high in dogs. Human toxocariasis develops by ingesting of embryonated eggs in contaminated soil.

From the reviewed literature we have found that, in Japan, the frequency rate of *Toxocara* eggs in sandpits in public parks ranged from 19.2 to 68.8%[5] and 63.3%[4]. In London, GILLESPIE *et al.* also reported the contamination of sandpits in parks and gardens with *Toxocara canis* was 6.3%[2]. In Spain, more than 67% of parks and 1.24% of soil samples were contaminated[3]. In Italy, the contaminated soil with *Toxocara* spp. of urban and suburban area was 63.6%[1].

There is no previous report of *Toxocara* contamination in the soil samples from the public areas in Bangkok. For this reason our study have been carried out to examine the frequency of *Toxocara* eggs in public yards in Payathai Subdistrict, Bangkok, Thailand. The surveyed area was about 0.5 acre. A total of 175 sand and clay samples were collected on grid from sandpits in the public yards surrounding the building. At each site, the top - soil sample, less than 2 cm depth, in an area of approximately 1 ft^2 was dug up.

All 175 samples were examined for parasite eggs according to the method reported by UGA & KATAOKA[5]. Briefly, a fresh soil sample of 2 g per each place was taken to the laboratory. About 2 g of powdery and wet sand was suspended in about 3 ml of aqua solution for 10 minutes. After the precipitation, the precipitant was then removed onto a microscopic slide, covered by coverslip, and examined for parasite eggs or oocysts.

According to this study, *Toxocara* eggs were detected from 10 (5.71%) of 175 soil samples. Of these ten positive samples, five were the *Toxocara canis* and the others were *Toxocara cati*. The density of infection for each sample was one egg per field (X400). The contamination rate in this area compared to above reported was lower. Since the setting of this study is in the capital in Thailand where the promotion of sanitation has been continuously done, the low frequency can be expected. However, we still detect the contamination hence the control of this possible zoonotic disease, control of abandon of dogs and cats, is still necessary. The study of the infection in the population in this study area is planned for our future study.

RESUMO

Freqüência da contaminação por *Toxocara* em amostras de solo de parques públicos da área urbana "Payathai", Bangkok, Tailândia

Espécies de *Toxocara* são os ascarídeos mais comuns de canídeos e felídeos. A toxocaríase humana se desenvolve através da ingestão de

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ovos embrionados presentes no solo. Não existe nenhum relato prévio da contaminação de *Toxocara* em amostras de solo de áreas públicas em Bangkok. Devido a isso, nosso estudo visou o exame da freqüência de ovos de *Toxocara* em Parques públicos em Bangkok, Tailândia. Em um total de 175 amostras de areia e barro pesquisou-se a presença de ovos de helmintos.

De acôrdo com este estudo, os ovos de *Toxocara* foram encontrados em 10 (5,71%) das 175 amostras de solo. A elevada taxa de contaminação demonstrada neste estudo implica na importância do controle desta possível doença zoonótica: controle de cães e gatos abandonados é ainda necessário.

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