

## **E0097 Studying the presence of free-living amoeba in parks and recreational areas in Leicester, UK**

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**Background:** *Acanthamoeba* spp., *Naegleria fowleri*, and *Balamuthia mandrillaris* are considered emerging human pathogenic free-living amoebae (FLA), producing severe infections in both immunocompromised and immunocompetent humans. Although FLA have been found in virtually any environmental compartment, little is known about the potential role of wild animals as reservoirs for FLA. The aims of this study were: a) to identify the presence of FLA in animal faeces collected from urban parks in Leicester (UK); b) to identify if animal samples require pre-concentration to improve their detection.

**Materials/methods:** Duplicates of 50 animal faecal samples were collected in March 2016: 13 from Castle Gardens (LE1 5WH), 28 from Abbey Park (LE4 5AQ) and 9 from the River Soar footpath between both parks. Only fresh samples were selected and collected on days where there had been no precipitation in the preceding 48 h.

**Results:** A veterinarian identified the animal species as 20 avian (10 waterfowl, 8 pigeons, 2 uncertain); 24 canine (15 dog, 8 fox, 1 uncertain), 2 cats, 1 herbivore and 3 unidentifiable. Duplicates of each sample were pre-concentrated using the routine coprological method, modified Telemann and MIF (merthiolate-iodine-formaline). The DNA was extracted from each sample (fresh and pre-concentrated) using the Fast-DNA-Spin kit following previously described methodology. The QIAamp micro DNA extraction kit was used to remove PCR inhibitors. A triplex real-time TaqMan PCR assay was performed to detect FLA; positive controls for the three amoebae were used. All samples assessed for FLA were negative.

**Conclusions:** Results were inconclusive as all samples were negative for FLA. However, understanding the zoonotic potential of animals in the presence and distribution of FLA in the environment is critical to protecting the public from these emerging human pathogens. Although the study of FLA in mammals is rare, studies have described the presence of *Acanthamoeba* spp. and other FLA in the gastrointestinal tract and faeces of cow, pig, and squirrel representing a potential source of transmission for these opportunistic parasites. Further studies are needed to determine the appropriateness of using pre-concentrating methods in future monitoring studies to determine the presence of FLA in mammals as our results were inconclusive.