

### A3 - Detection of Opportunistic Parasites in Public Parks in Alcalá de Henares (Madrid, Spain)

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Opportunistic parasites such as Free Living Amoebae (FLA) and Microsporidia can cause serious diseases in case of immunosuppression or a weak immune system like the one in infants and the elderly. FLA can cause Central Nervous System, eye or skin infections depending on the species. FLA do not require a host to complete their life cycle, thus they are commonly isolated from water or soil.

Microsporidia are intracellular parasites that can cause intestinal and other infections in all types of animal. Due to their zoonotic potential, they can infect all animal phyla, so that humans can be easily exposed to them in the environment.

Because of this, the aim of this study was to evaluate the presence of FLA and Microsporidia in urban parks in Alcalá de Henares (Madrid) in soil, water and fecal samples.

Five parks were selected and 28 dust samples (soil and kid's sandbox), 4 water samples (ornamental fountains and drinkable water) and 5 mammal feces were collected in total.

FLA was analyzed in soil and water samples by a *triplex* Real Time PCR with 3 TaqMan® probes for *Acanthamoeba*, *Balamuthia mandrillaris* and *Naegleria fowleri*. No positive results were found. On the other hand, Microsporidia were detected in all types of sample using a SYBR Green Real Time PCR that allows distinguishing phylum Microsporidia, reaching to species level in the case of *Encephalitozoon bienewisi*, *Enterocytozoon hellen/ intestinalis* and *E. cuniculi*. All fecal samples were positive for *E. hellen/ intestinalis*. Only one water sample was positive for phylum Microsporidia but negative for the above species. In the dust samples, 15 were positive for at least 1 type of microsporidia; in total 2 samples were positive for *E. cuniculi*, 2 for *E. bienewisi*, 7 for *E. hellen/ intestinalis* and 6 for undetermined species.

At the sight of the results we can confirm that fecal contamination in urban parks can be a potential health risk as Microsporidia, with fecal oral transmission, has been found in a high number of samples. Conversely, urban park soils do not seem to present a source of FLA infection in the studied area.