

Book of Abstracts



CrayfIT

Regional European IAA Meeting



5 – 8
September
2023

Pavia, Italy

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How much do crayfish plague and microsporidiosis affect the conservation status of the white-clawed crayfish *Austropotamobius pallipes* complex in Trentino (NE Italy)?

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The white-clawed crayfish *Austropotamobius pallipes* complex is an endangered species, with decreasing trend in distribution and abundance throughout Europe. One of the causes of decline is the widespread invasion of alien crayfish and the associated spread of infectious diseases, primarily of the crayfish plague caused by *Aphanomyces astaci*. Although this disease usually causes mass mortality in *A. pallipes*, some wild populations appear to be resistant or/and tolerant towards *A. astaci*. A further disease, poorly investigated and understood, is microsporidiosis, i.e., the porcelain disease, caused by the microsporidian parasites *Astathelohania contejeani* and *Nosema austropotambii*. We present the results of a 2021-2022 monitoring survey, aimed at mapping the distribution of *A. astaci*, *A. contejeani* and *N. austropotambii* in the wild populations of *A. pallipes* in Trentino. We applied non-invasive sampling methods to collect cuticular swabs from 17 of 44 known populations, concurrently collecting eDNA at one of the sampling sites, to investigate the presence of *A. astaci* and if possible, identify its genotype through molecular analyses. Sixteen 16 specimens from 5 populations showed abdominal muscles with macroscopic signs of porcelain disease, tissue from these specimens were collected and subjected to molecular evaluation to confirm the presence of microsporidia and identify the species. *Aphanomyces astaci* was detected in 5 populations and the presence of a low pathogenic genotype (genotype A) was confirmed in one of them. The presence of *A. contejeani* was identified in 5 populations. In 2 of them, *N. austropotambii* was detected in co-infection with *A. contejeani* in the same individual.

Keywords: *Aphanomyces astaci*, cuticular swab, microsporidia, co-infection

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