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**Managing Alien Species for Sustainable  
Development of Aquaculture  
and Fisheries**

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**Alien crayfish *Procambarus clarkii* as a carrier of the parasite *Aphanomyces astaci* in Italy: Evidence from digital images and molecular analysis**

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*Aphanomyces astaci*, an obliged parasite of freshwater crayfish, is the ethiological agent of the so called “crayfish plague”. Because of its large ecological and economic damages, it has been included in the list of the 100 worst alien species in Europe. Endemic of North-America, it can rapidly kill indigenous crayfish of Europe and Australasia. It spreads in association with its North-American crayfish hosts, *Orconectes limosus*, *Pacifastacus leniusculus*, and *Procambarus clarkii*. Surprisingly, *A. astaci* has never been recorded in Italy, notwithstanding that Italy has been the first country in Europe where outbreaks of the crayfish plague occurred in 1860. *Procambarus clarkii* is the most common North-American crayfish in Italy and might represent the main carrier of this parasite. We have analyzed samples of *P. clarkii* from different Italian populations by the use of high resolution microscopy, digital image analyzing software, and PCR diagnostic methods. For the first time, *A. astaci* colonies have been recorded on its cuticle with high resolution images and its occurrence in several Italian populations has been also confirmed by molecular tools.

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