

Present knowledge on aphanomycosis in crayfish plague — distribution, transmission, diagnosis

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Cray fish plague affecting preferently European fresh water crayfish was described in the midst of 19th century in Europe a short time after transfer of American species to Europe. Only in the thirties of the 20th century, the causing agent *Aphanomyces astaci* could be detected. *A. astaci* is surviving in water only short time depending on water quality and temperature, but can survive in infected animals as reservoir for a very long time. *A. astaci* induce mycelia in the cuticula of affected animals which typically develop loss of extremities, uncoordinated movements and death after about a week. In contrast to less or more resistant American species which mostly survive European crayfish show a mortality of about 100 percent. The exact diagnosis is very difficult since the cultivation of the causative fungus needs a long time and is often not very successful by overcrowding other aquatic fungi. Therefore the diagnosis was regularly confirmed by experimental contact infection, which also needs a long time. However even these cohabitation trials do not give an answer of an unapparent infection of American species. During the last years we could establish PCR techniques which allows a high specific rapid diagnosis. By this way it is also possible to test clinical healthy American crayfish for the presence of *A. astaci*. Broad studies in Austria, Czech Republic, France, Germany and Switzerland confirmed, that in most regions populated by American species crayfish plague is endemic. Therefore areas free of the disease have to be protected especially by effective control of crayfish populations and avoidance of contact to American crayfish. By this way it could be shown that populations of endogenous crayfish can be conserved. The main danger is the involuntary introduction of infected animals into water system by fish transfer, use of contaminated tackling, escaping of infected food animals and release of Aquarian animals into brooks.