CHARACTERISING AND ALTERING THE NUISANCE AND DESIRABLE MICROBES ASSOCIATED TO CULTIVATED ALGAE: EMERGING CONCEPTS FROM OOMYCETE AND FUNGAL PATHOGENS

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Résumé

Research in the past 5 years has uncovered an immensely diverse and apparently monophyletic clade of obligately intracellular, marine oomycete pathogens that infect algal hosts

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such as diatoms, green, red and brown seaweeds. Metabarcoding studies suggest that they are widespread globally and sometimes abundant; thus, they might play an important role in regulating phytoplankton dynamics, as well as threatening the cultivation of red algae. Here, I will review the state of the art concerning the diversity of these intracellular oomycetes and present several initiatives aiming at accelerating their taxonomic description, their physiological and ecological characterisation. In the second part of the talk, I will present our recent findings on the importance, structure, cultivability and resilience of the bacterial microbiota during the infection of cultivated *Haematococcus* spp. by the fungal pathogen *Paraphysoderma sedebokerense*: in addition to evidencing non-random reduction of the microbiota during cultivation, these new data give clues on the possibilities of exploiting bacteria associated to this microalga towards biocontrolling the fungal pathogen. These concepts will be put in perspective with the wider context of developing biosecurity and disease management methods towards the resilience and sustainability of algal aquaculture.

Mots-Clés: microbiota, pathogen, aquaculture, alga