

Encadrement :

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Titre du stage :

***Bd*-infection dynamics on a host under stress**

Mots clés :

Résumé (150 mots maximum) :

Europe's Amphibians are threatened by a new emerging infectious disease, chytridiomycosis, caused by the pathogen *Batrachochytrium dendrobatidis* (*Bd*). This disease is known to be a proximate driver of rapid species declines and extinctions in five continents. It is now clear that *Bd* infects populations and species widely across Europe. It is also clear that, in some regions, populations and possibly species are undergoing rapid catastrophic declines as a result of the infection, and that the infection has caused local extirpations. However, the extent that this invasive infectious disease is impacting on amphibian biodiversity across Europe is almost completely unrecognised, despite clear signs that there is a widespread and urgent problem. To understand the host and diseases dynamics we need to be able to correctly parameterize models for which we need to conduct experiments under controlled conditions. This student work will contribute to this by evaluating the impact of low-temperature stress imposed on tadpoles and toadlets of *A. obstetricans* on the virulence of *Bd*. Stress from low temperatures, as e.g. found during nights in mountain lakes in spring and autumn, may reduce the possibility of an immune-response by the tadpoles, favouring the propagation of *Bd* across the individual. The thesis will include field work, lab work (animal experiments), as well as genetic work.

Deux références bibliographiques:

Johnson PTJ, Paull SH (2011) The ecology and emergence of diseases in fresh waters. *Freshwater Biology* 56:638-657

Marquez M, Nava-Gonzalez F, Sanchez D, Calcagno M, Lampo M (2011) Immunological clearance of *Batrachochytrium dendrobatidis* infection at a pathogen-optimal temperature in the hylid frog *Hypsiboas crepitans*. *Ecohealth* (in press).

Techniques mises en œuvre:

Statistical analyses, PCR, DNA extraction, behavioral observations

Compétences particulières exigées:

Knowledge of population genetics and statistics are advantageous