



FACULTY OF SCIENCE  
BIOLOGY DEPARTMENT  
ANIMAL ECOLOGY AND SYSTEMATICS SECTION  
**LABORATORY OF AQUATIC ECOLOGY AND EVOLUTIONARY BIOLOGY**  
CHARLES DEBERIOTSTRAAT 32  
B-3000 LEUVEN



KATHOLIEKE  
UNIVERSITEIT  
LEUVEN

## **Functional-ecological study of biotic interactions in a damselfly along a latitudinal gradient.**

Applicant's name and affiliation: Ine Swillen, KU Leuven, Belgium

Host name and institute: Dr. Patrick Grillas, Station Biologique de la Tour Du Valat, Arles, France

We recently documented a latitudinal increase in size and growth rate, two traits that are known to shape prey vulnerability, in the widespread damselfly *Ischnura elegans*. However, knowledge on latitudinal patterns in biotic interactions is still largely lacking. In our study visit to Tour du Valat, we had several goals, all of which will be integrated in a latitudinal framework. Firstly, five ponds were sampled for local predator assemblages, to gain more insight in local predator densities. Secondly, we successfully conducted two enclosure experiments to estimate in situ predation pressure of *Anax* and *Aeshna* predators on larval *Ischnura elegans*. Thirdly, between 30 and 50 females from five populations were sampled to study morph differentiation between populations. Fourthly, 30 males from five populations were sampled to extend our dataset on parasite prevalence. Similar data will be obtained from other latitudes. Fifthly, we collected eggs from 20 females from two populations in order to start a common garden experiment at different temperatures in the laboratory in Belgium to study combined effects of temperature and predation risk on life history (e.g. body size), physiology (e.g. growth efficiency) and behaviour (e.g. foraging activity) and the resulting survival success of larvae in staged encounters with *Aeshna* predators.



Planned publications and further collaboration:

- Publication on latitudinal differences in behaviour, morphology and physiology in relation to predator presence of the damselfly *I. elegans* reared in a common environment experiment
- Further monitoring of French populations in a latitudinal framework

—

—