BIOLOGIE DES ORGANISMES ET DES POPULATIONS

M1 bop - 2011-2012
Proposition de stage

Encadrement :

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Titre du stage :

Interaction between constitutive and inducible resistance in *Arabidopsis thaliana*

Mots clés :

Plant-herbivore interaction, insect resistance, trade-off, plant defenses, gene expression

Résumé (150 mots maximum) :

Plants are constantly under insect herbivore attack. To defend themselves, they deploy a whole variety of physical and chemical barriers. Defense traits can either be expressed constitutively, or only induced after herbivory. A growing body of literature is showing genetic variation in the level of constitutive and inducible defenses, and it has been shown that the two can trade-off across genotypes of a species. We here propose to study constitutive and inducible resistance in the genetically tractable model system *Arabidopsis thaliana*. Previous work has shown that constitutive gene expression related to defense against insect chewing herbivores is very variable across *A. thaliana* genotypes. Based on previous gene expression data, we will select high and low constitutive gene expressible genotypes to perform insect bioassays and gene expression analyses on previously induced or healthy plants. Data will provide insights into evolution and mechanisms of defense strategies in plants.

Deux références bibliographiques:

Rasmann, S., et al. 2011. Direct and indirect root defences of milkweed (*Asclepias syriaca*): trophic cascades, trade-offs and novel methods for studying subterranean herbivory. - Journal of Ecology 99: 16-25.

Ahmad, S., et al. 2011. Genetic dissection of basal defence responsiveness in accessions of *Arabidopsis thaliana*. - Plant Cell and Environment 34: 1191-1206.

Techniques mises en œuvre:

Plant-insect bioassays, Metabolomics , Gene expression analyses

Compétences particulières exigées:

Basic knowledge of plant-insect interaction , Basic knowledge in molecular techniques