

Teaching Session:

«Molecular Tools to Identify Psyllid Species that Vector Phytoplasmas: Practical and Conceptual Overview»

COST Action 0807, Working Group 2 «Insect Vectors»

Location: Montpellier, France

Dates: 01/10/2012 and 5/10/2012

Organizers: Institut National de la Recherche Agronomique (INRA) Montpellier

Organizing Committee: Dr. N. Sauvion, Dr. B. Jarausch

Aim

Only specialized taxonomists can differentiate the psyllid species that vector phytoplasmas because of the morphological similarity of the most important genus, *Cacopsylla*. It is only recently that keys have been developed for this group (<http://www.psyllidkey.info/>). The limitation inherent in morphology-based identification systems signals the need for new approaches to vector identification. DNA-based identification systems are today reliable, cost-effective and accessible solution for students and researchers.

The goal of the teaching session will be to acquire an overview of the conceptual and methodological approaches in molecular taxonomy/phylogeny, and to understand how to develop molecular tools for species identification. For example, the concepts of species, cryptic/sister species and related species will be developed; the interest / limit / difficulties of developing the molecular tools will be presented; and the Barcode of Life project will be detailed. In addition to the formal presentations, practical sessions will be organized (DNA extractions, test of sets of primers; design of primers, etc.).

Accommodation (very near the City Center of Montpellier): about 50 €/night

http://www.appartcity.com/apparthotel-montpellier-saint-roch/ R_12_33 /accueil-residence.htm

PROGRAM

	Morning	Afternoon
Monday , 1 October	Arrival	Reception of the participants
Tuesday , 2 October	Welcome; Presentation 1	Practical Session 1
Wednesday , 3 October	Practical Session 2	Presentation 2
Thursday , 4 October	Presentation 3	Practical Session 3
Friday , 5 October	Practical Session 4	Departure

Practical Session 1

From sampling to the database indexing; DNA extraction step1

Practical Session 2

DNA extraction step2

Practical Session 3

PCR

Practical Session 4

Discussion on PCR results

Presentation 1

“Evolutionary history of the insects: focus on the vectors of phytoplasma”

David Ouvrard (French / British Museum): Psylloidea

- Visit of the LNPV (National Laboratory of Plant Protection)
- Visit of the Insect library

<http://www1.montpellier.inra.fr/CBGP/?q=fr/content/collections>

Presentation 2

“When the morphological identification is difficult even impossible: the case of some psyllid groups”

Nicolas Sauvion (BGPI, Montpellier)

Presentation 3

“Molecular primers for phylogenetic analysis”

Gaël Kergoat (CBGP, Montpellier)

“New approach to resolve the phylogenetic relationships: the phylogenomic”

(CBGP, Montpellier)

“The INBIP, the international network for barcoding of invasive and pest species”

Jean-Yves Rasplus (CBGP, Montpellier), in charge of the program for the insects