

COST FA0807

Short course on insect molecular taxonomy (Ivrea, November 5th and 6th 2012)

Introduction on systematics and taxonomy, from phylogeny to intraspecific variability. Molecular taxonomy versus traditional taxonomy

Integrative taxonomy

Cryptic species

Molecular markers and tools for the study of genetic variability of insects

Mitochondrial DNA

Ribosomal DNA

Other marker sequences

RAPD markers

Microsatellite markers

A new molecular tool for insect species/biotype identification: High Resolution Melting analysis

Phylogenetic tree analyses and softwares for insect phylogeny - evolution studies

Case studies of molecular identification of insect species/biotypes

Plant- and leaf-hoppers

Whiteflies

Hymenopteran parasitoids

**Lab sessions on the identification of plant- and leafhopper vectors of phytoplasmas
(Grugliasco, November 7th to 9th 2012)**

Morphology-based identification of plant- and leaf-hoppers

DNA extraction from Cixiidae and Cicadellidae samples

PCRs of mitochondrial and ribosomal targets

DNA purification from amplification products and from gels for sequencing

RFLP assays to identify plant- and leaf-hoppers at the species level

Computer room session (analysis of mitochondrial and ribosomal sequences, virtual RFLPs and species-specific primer design)

Class on the development of new molecular species-specific assays (strategies, troubles and pitfalls in designing species-specific PCRs, RFLPs and real time PCR; targets other than mitochondrial and ribosomal genes in molecular taxonomy; how to identify with molecular tools dry specimens from collections/museums)

General discussion and conclusion