

Molecular techniques for characterising mite and tick communities: applied aspects

The Acari, including both mites and ticks, are a diverse group of organisms with a worldwide distribution, frequently occupying extreme habitats and performing essential ecological functions. However, due to their size, they are difficult to identify and study. They have their own particularities that require specific techniques and approaches.

Training and education in Acarology is becoming more and more rare. There are few existing specific educational programmes in Europe, even though the need for expertise on mites and ticks has increased. Indeed, these species are being increasingly studied with respect to their roles as biological control agents, ecosystem engineers, parasites of species of conservation concern and disease vectors.

From 08 / 07/ 2019 - 9h
to 12 / 07/ 2019 - 17h

30 h

The objective of this 5 day course is to focus on practical and analytical molecular approaches for studying mites and ticks, **from taxonomic to population genetic levels**. It specifically aims to show how molecular approaches can be used to characterise these communities and how this knowledge can then be used for applied aspects, such as the implementation of biological control measures.

Goals

- Acquire broad-knowledge about molecular techniques and their use in applied science (i.e. biological control)
- Understand the principles of Barcoding for species identification: advantages and pitfalls
- Understand population genetic tools and analyses for studying mite and tick communities and invasion pathways
- An introduction to NGS technologies for assessing trophic interactions
- Interpretation and analysis of molecular results with case studies



METHODS
And TEACHING

Interactive lessons

E-learning facilities

Case studies and exercises

Practical work including DNA extraction, amplification and sequencing

FOR WHO?

Researchers, lecturers, masters and PhD students

Price

...800.. € net including taxes/participant

SPECIAL PRICE FOR STUDENTS: 600 € net including taxes/ participant

Lunches included in the registration fee

Accommodation at Montpellier SupAgro student residence= 200 € / week

Teaching team

Marie-Stéphane Tixier, Montpellier SupAgro

Lise Roy, University of Montpellier

Maria Navajas, INRA

Karen McCoy, CNRS

Alison Duncan, CNRS

Serge Kreiter, Montpellier SupAgro

Jean-François Martin, Montpellier SupAgro

Alain Migeon, INRA

Martial Douin, Montpellier SupAgro

Philippe Auger, INRA

Tentative schedule

	Morning	Lunch time	Afternoon
08/07 9h	Welcome and coffee		
08/07 9h30	Introduction to the course		
08/07	10h-12h. What we know-exchanges-debates-quiz		General introduction on molecular techniques on mites: an overview
09/07	Barcoding of Life and Biological control		Practical work DNA extraction and PCR
10/07	Analyses of data, barcoding exercises		Whole genome analyses - transcriptomic
11/07	Population genetics for mites		Exercise case studies population genetics
12/07	NGS techniques for biological control		Exercise-Case study NGS



Contents and key words

- Molecular identification
- Population genetics
- Molecular analytical issues
- Community ecology
- Biological control issues

Deadline for registration
30/05/2019

Contact

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Une formation certifiée