

TRAINING COURSE

30 MAY – 3 JUNE 2016, INSTITUT PASTEUR TUNIS, TUNISIA

GENERAL CONTENT

MediLabSecure is a European project (2014-2017) aimed at preventing vector-borne diseases around the Mediterranean and Black Sea regions by creating new networks (human virology, animal virology, medical entomology).

The medical entomology network of laboratories (WP4) has been established in 2014. According to an assessment of needs, tailored trainings sessions are planned in 2015-2016, enabling laboratories to develop capacity building in mosquito vectors of arboviruses (sampling, determination, surveillance) and to enhance regional cooperation:

> 8-12 June 2015 – University Novi Sad, Serbia

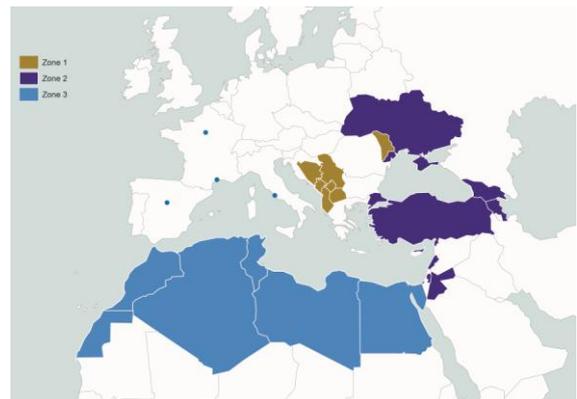
Concerned countries: Albania – Bosnia and Herzegovina – Kosovo – Montenegro – Moldova – Serbia – The Former Yugoslav Republic of Macedonia

> 7-11 September 2015 – Hacettepe University, Ankara, Turkey

Concerned countries: Georgia – Jordan – Lebanon – Palestine – Turkey – Ukraine

> 30 May – 3 June 2016 – Institut Pasteur Tunis, Tunisia

Concerned countries: Algeria – Armenia – Egypt – Libya – Morocco – Tunisia



OBJECTIVES OF THE TRAINING

The purpose of the training is the acquisition of essential knowledge and the development of skills in mosquito vector of arboviruses.

The aim of this course is:

- to develop capacity building in medical entomology and vector surveillance for laboratory staff of the MediLabSecure network;
- to provide the required skills (theoretical and practical) to conduct entomological surveys in the framework of surveillance, prevention and control of vector-borne diseases in the Mediterranean and Black Sea regions;
- to strengthen parties' ability to work together for their mutual benefit;
- to use concrete cases to build on lessons learned and apply concepts to practice.

Through an interactive and practical training approach, this course will focus on:

The basics (1 day): introduction to medical entomology, current mosquito borne diseases in the Mediterranean and Black Sea regions, surveillance strategies

Sampling (1 day): characterization of breeding and resting sites, setting up traps

Identification (2 ½ days): classification, morphology and development of arthropods, morphological identification of larvae and adult mosquito species, PCR detection methods

Risk assessment (½ day): methods for data management and analysis

	Monday 30	Tuesday 31	Wednesday 1	Thursday 2	Friday 3
	The basics	Sampling	Sampling / Identification	Identification	Identification / Risk assessment
9h00-9h30			Lecture	Lecture	Lecture
9h30-10h00	Welcome	Field activities			Lab activities
10h00-10h30		Trapping	Coffee break	Coffee break	Morpho. Identification
10h30-11h00	Lecture				Coffee break
11h00-11h30	Coffee break		Lab activities	Lab activities	
11h30-12h00			Morpho. Identification	PCR	
12h00-12h30	Lecture				Lecture / Roundtable
12h30-13h00					
13h00-13h30					
13h30-14h00					
14h00-14h30					
14h30-15h00			Lecture	Demonstration	Lab activities
15h00-15h30	Working group	Field activities	Lab activities	Lab activities	Quality control
15h30-16h00		Trapping	Morpho. Identification	PCR	
16h00-16h30	Coffee break		Coffee break	Coffee break	Coffee break
16h30-17h00	Lecture / Roundtable				Feedback /
17h00-17h30					Conclusion
17h30-18h00	Oral presentation				
18h00-18h30					

Lecture	Field activities
Working group	Lab activities
Oral presentation	Intro / Conclusion

Programme

Training course
Institut Pasteur Tunis, Tunisia
30 May - 3 June 2016



MONDAY 30

9:00	Welcome
10:30	Coffee Break
11:30	Lecture 1. Introduction to medical entomology (30'). <i>V. Robert</i> 2. Taxonomy and bioecology of the target mosquitoes: <i>Aedes</i> , <i>Culex</i> , <i>Anopheles</i> (30'). <i>F. Schaffner</i> 3. Surveillance and control of mosquito vectors: the basics (30'). <i>V. Robert</i>
13:00	Lunch
14:30	Working group 5' to describe a species <i>Into small group of 3 people.</i>
16:00	Break
16:30	Roundtable discussion Current mosquito borne diseases in the Mediterranean and Black Sea Regions (30').
17:00	Lecture 4. Sampling mosquitoes: theoretical approach (30'). <i>V. Robert</i>
17:30 18:30	Oral presentation 5' to describe a species <i>Each working group present their work.</i>

TUESDAY 31

8:00	Field activities Mosquito larvae sampling in wetlands, breeding sites mapping, trapping methods for mosquitoes
13:00	Lunch
14:30	Field activities Mosquito larvae sampling in wetlands, breeding sites mapping, trapping methods for mosquitoes
18:00	

WEDNESDAY 1

9:00	Lecture 5. Methods and tools for conservation of mosquito and interest of collection reference (30'). <i>A. Bouattour</i> 6. Methods and tools for identification of mosquito (30'). <i>F. Schaffner</i>
10:00	Coffee Break
10:30	Lab activities > Morphological identification of adults mosquito species (collected materials)
13:00	Lunch
14:30	Lecture 7. Data management (30'). <i>F. Schaffner</i>
15:00	Lab activities > Morphological identification
16:00	Break
18:00	Lab activities > Morphological identification

THURSDAY 2

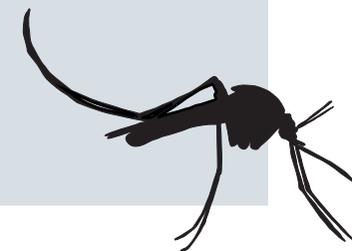
9:00	Lecture 8. Introduction to molecular identification (60'). <i>V. Robert</i>
10:00	Coffee Break
10:30	Lab activities > Molecular identification using collected mosquitoes: <i>Cx. pipiens pipiens</i> vs. <i>Cx. p. molestus</i>
13:00	Lunch
14:30	Demonstration Georencing
15:00	Lab activities > Molecular identification
16:00	Break
18:00	Lab activities > Molecular identification

FRIDAY 3

9:00	Lecture 9. Mosquitoes of Maghreb (30'). <i>A. Bouattour</i>
9:30	Lab activities > Morphological identification
12:00	Lecture 10. Risk assessment and implication in Public Health. <i>F. Schaffner</i>
13:00	Lunch
14:30	Lab activities Quality control > Identification of adults mosquito
16:00	Break
16:30	Conclusion
17:30	

Lectures

1. Introduction to medical entomology (30').
2. Taxonomy and bioecology of the target mosquitoes: *Aedes*, *Culex*, *Anopheles* (30').
3. Surveillance and control of mosquito vectors: the basics (30').
4. Sampling mosquitoes: theoretical approach (30').
5. Methods and tools for conservation of mosquito (30').
6. Methods and tools for identification of mosquito (30').
7. Data management (30').
8. Introduction to molecular identification (60').
9. Mosquitoes of Maghreb (30').
10. Risk assessment and implication in Public Health (30').



TRAINERS

The course will be facilitated by:



Vincent ROBERT (IRD, France) – Senior researcher, medical entomologist. Vincent is the key-expert of the medical entomology network (MediLabSecure). He has more than 30 years of experience in general and medical entomology mainly in tropical area (Africa and Madagascar). He conducted many researches on malaria and transmission of Anopheles. He also has a strong experience in teaching (Institut Pasteur) and publishing medical entomology books.



Ali BOUATTOUR (Institute Pasteur of Tunis, Tunisia) – Head of the Laboratory of Medical Entomology

Ali is the Tunisian lab member contact of the medical entomology network (MediLabSecure) and he kindly hosts this training. He has more than 20 years of experience in medical entomology, particularly mosquitoes, ticks and flea and epidemiological studies of tick-borne diseases.



Francis SCHAFFNER (AVIA-GIS, Belgium) – Medical entomologist

He has more than 28 years of experience in surveillance, control, taxonomy, ecology of insect vectors and epidemiology of human and animal vector-borne diseases (e.g. West Nile and Chikungunya fevers, bluetongue). He is a leader in European mosquito taxonomy and has published an identification and training program: 'The Mosquitoes of Europe' that is available on CD-ROM. Throughout his career much time was devoted to training and capacity building.

ABOUT THE COURSE

Duration of training: 35 hours

Location:

Institut Pasteur Tunis
13, place Pasteur, 1002 Tunis, Belvédère, Tunisia

Course format:

This course will consist primarily of: short lectures, field activities, laboratory activities, collaborative work (all trainees or by small group), oral presentation.

Resources:

A manual training (provided in USB key) will be given to participants, including course presentation and useful resources (guidelines, dichotomic key, computer-aided identification system, bibliography).

Course certificate and assessment:

Participants are expected to be present throughout the full duration of the course. Upon completion of the course, each participant will receive a certificate of participation provided that all sessions have been attended.

There is no formal examination but an assessment will be realized through a morphological ID individual evaluation.

Equipment and materials expected:

Trainees are invited to bring personal **laptop**, **field clothes** and **personal entomology equipment kit** (if they have).

CONTACT

The MediLabSecure Team (WP4) / mls.entomo@ird.fr

> **Vincent ROBERT** - Medical entomologist, PhD / vincent.robert@ird.fr

> **Marie PICARD** - Project manager WP4 / marie.picard@ird.fr

IRD (Institut de Recherche pour le Développement)

911 Avenue Agropolis / B.P. 64501

34394 Montpellier, FRANCE

tel: +33 (0)4 67 41 63 50