

COST Action Number TD1303 European Network for Neglected
Vectors and Vector-Borne Infections (EURNEGVEC)

STSM Report: Maria João Martins Vila-Viçosa

STSM title: Biology, collection, identification and monitorization of Simuliids

Host institution: Aleksandra Ignjatovic-Cupina. University of Novi Sad, Faculty of Agriculture, Department for Environmental and Plant Protection, Laboratory for Medical and Veterinary Entomology; person in charge: Dr Aleksandra IgnjatovicCupina, e-mail: cupinas@polj.uns.ac.rs

STSM period: from 07-07-2014 to 14-07-2014

Beneficiary (Applicant): Vila-Viçosa, Maria João Martins, Universidade de Évora (Portugal)

COST STSM ReferenceNumber: COST-STSM-TD1303-17267.

Reference code: ECOST-STSM-TD1303-070714-044126

Approved amount: 900€

- **The purpose of this STSM** was the comprehensive acquisition and improvement of practical skills of blackfly (Diptera: Simuliidae) sampling procedures, to furnish background information on the biology, morphology and behaviour of blackflies, to study blackfly identification and preservation procedures. It was a great opportunity to learn and practice collecting material which was studied later in the laboratory and to exchange ideas with all members of the STSM group.

- **Description of the activities carried out during the STSM** comprised the sampling of blackfly populations in different types of breeding habitats (creeks, streams and rivers), under different environment conditions (water temperature, current velocity, depth, bottom structure, presence and type of aquatic

and riparian vegetation). Special attention was given to standardization of sampling procedures, that is required for monitoring of blackfly populations, such as selection of sampling zones and immature stages niches, timing of sample collection and influence of the collector's experience on sampling results, sampling frequencies, observation of the dominant stage/instar, methods for adult collections. The identification of the material was based on morphology with special attention to particular morphological characteristics relevant for identification, including the introduction to the manipulation and processing methods for the preparation and conservation of larvae, pupae and adults, as well as external examination and dissection procedures used for morphological identification at genus, species complex and species level. The appropriate observation of morphological patterns was conducted by magnification obtained by the use stereo microscope. The identification of species was done according different identification keys related to the European blackfly fauna. All stages of black flies were stored in 100% ethanol. Furthermore, the free access to collections of blackflies stored at the host institution allowed the training in identification of higher number of species, including those that were not collected during the field trips conducted within STSM.

- **The main results obtained by STSM** were very interesting and diverse provided knowledge, skills and opportunities to conduct simuliid studies. The STSM resulted in collection and identification of variety of species belonging to *Simulium*, *Wilhelmia*, *Nevermannia*, *Eusimulium* and *Trichodagmia* subgenus. Among them, *Simulium(Simulium) ornatum* Meigen, 1818 (complex), amammophilic and anthropophilic polivoltine blackfly was the most frequently encountered simuliid taxa in the visited habitats. This blackfly is also known as a pest aggressively biting both humans and animals, as well as the confirmed vector of *Onchocercalinealis* and *O. tarsicola* filarial worms, parasiting cattle

and deersin some parts of Europe, respectively. At international basis, created data can be compared and correctly interpreted. With the training during this STSM and present ongoing work, personally I expanded my theoretical and practical knowledge and skills relevant to develop scientific work in the field of simuliids presented at international meetings and published in 1 or 2 peer-reviewed journals.

- **Future collaboration with the host institution.** The present STSM provided excellent basis for extension of the established collaboration with the host institution, which will be realized by further joint research activities and publication of scientific results.
- **Foreseen publications/articles resulting from the STSM (if applicable)** Apart of the STSM results will be presented at international meetings and published in 1 or 2 peer-reviewed journals.
- **Confirmation by the host institution of the successful execution of the STSM.**

Herewith, I confirm the participation of Maria João Vila-Viçosa, Reference code ECOST-STSM-TD1303-070714-044126, to the STSM organized by the University of Novi Sad, Serbia, Faculty of Agriculture, Department for Environmental and Plant Protection, Laboratory for Medical and Veterinary Entomology and I confirm the correctness of the present report. The active and committed participation of Maria João Vila-Viçosa contributed to the successful execution of this STSM.

Novi Sad, 25th July, 2014



Dr Aleksandra Ignjatović Čupina

- **Other:** I would like to express my gratitude to the host institution and Dr Aleksandra Ignjatovic Cupina for the hospitality and the wonderful interchange in this partnership

Report done on 24/July/2014

Applicant and STSM participant:

Maria João Vila-Viçosa