SHORT TERM SCIENTIFIC MISSION (STSM)
SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: CA17108 - Aedes Invasive Mosquitoes
STSM title: Identification of mosquitoes (Diptera: Culicidae) as a tool for an external quality assessment
STSM start and end date: 07/06/2021 to 12/06/2021
Grantee name: Georgios Balatsos

PURPOSE OF THE STSM:

In the current Short Term Scientific Mission (STSM) the first objective was to gain experience with the identification of mosquitoes (Diptera: Culicidae) as a tool for an external quality assessment at University of Novi Sad, Faculty of Agriculture Laboratory for Medical and Veterinary Entomology.
The second objective was to be trained with the native and invasive mosquito surveillance equipment and techniques that has the Department and the using of morphological keys for mosquito's taxonomy.
Finally, this STSM provided the opportunity for me to acquire a set of practical skills for the laboratory and field work and improve my dexterity. Not only this STSM allowed me to do better my practical work but also offered me an ideal opportunity to advance my knowledge on mosquitoes' identification, which is important for our capacity building and quality control. I consider gaining more experience in this field will help my future development as a researcher.
In conclusion, I firmly believe that this Short Term Scientific Mission at the University of Novi Sad, Faculty of Agriculture Laboratory for Medical and Veterinary Entomology under the guidance of Professor Dusan Petric helped me to our future goal to improve protocols for external quality assessments on insects as nuisance or vectors.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

During the first day (7/6/2021) focus was mainly to presented the methodology of entomological surveillance that follow for detection of West Nile virus in order to understand the aim and goals from monitoring procedure. In addition, they introduced me to the native species of mosquitoes that are endemic in Serbia and the mosquito identification process via morphological keys for mosquito's taxonomy.
Furthermore, during the next two days (8/6 – 9/6/2021) carbon dioxide traps were set up in various parts of Serbia (Figure 1a). A total number of traps were 30 and installed on 8/6 and collected on 9/6. The duration of CO2 traps in the field was 24 hours and the distance traveled was about 840 kilometers (420 per day). Also, we collected *Culex spp* eggs from breeding sites in front of some houses where we placed the CO2 traps which had small ditches with stagnant water in order to transfer them to the laboratory for rearing (Figure 1b). The nets from the CO2 traps placed to dry ice concerning the transportation to the laboratory, for proper storage (avoid virus disintegration) and further study.

Figure 1a. CO2 trap in the field

Figure 1b. Culex spp eggs collected in the field

Figure 1c. mosquito indetification under the stereoscope

During the fourth, fifth and sixth day (10/6 – 12/6/2021) the collected mosquitoes were thoroughly studied, counted and identified according to morphological keys under the stereoscope (Figure 1c). The diversity of mosquito species in each trap was so intence that was very helpful to my training on indetification.
The native species recognized which I was not familiar and do not appear in Greece generally were:

1. *Aedes vexans*
2. *Aedes sticticus*
3. *Aedes rossicus*
4. *Aedes cinereus*
5. *Aedes annulata*
6. *Cq. richiardii*
7. *An. hyrcanus*
8. *An. plumbeus*

After counting the mosquito species, the results were recorded in a special database for statistical computing and graphics analysis.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

During my stay at the University of Novi Sad, Faculty of Agriculture Laboratory for Medical and Veterinary Entomology I believe that I have accomplished the main goal of my Short Term Scientific Mission, which was to get familiar with surveillance of native and invasive mosquitoes, mosquito taxonomy via morphological keys, using the equipment, data and the experience of their researchers. Moreover, my participation in the process of the entomological surveillance for West Nile virus in Serbia was a great experience for me in order to improve protocols for quality assessments on insects as nuisance or vectors.

FUTURE COLLABORATIONS (if applicable)

We continue to collaborate by exchanging ideas about mosquito traps and their efficacy, field techniques for a better result and the interrelation of both native and invasive mosquito species in our countries. Hopefully we will establish collaboration for further research on these topics between our Institute and the researchers team involved in this STSM from the Faculty of Agriculture Laboratory for Medical and Veterinary Entomology of University of Novi Sad.

The STSM grantee
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Date: 6/07/2021

Signature