Street “Alexander Mojsiu”, No. 80, Tirana, Albania, Pr. IPH, Tel +3554682069698; 0674072701

COST Action TD1303 : European Network for Neglected Vectors and Vector-Borne Infections (EurNegVec).

STSM Report

“Evaluation and harmonization of adult sand fly and mosquito sampling methods”.

Kosovo-Serbia
22/06/2014 to 29/06/2014

Enkelejda Dikolli (Velo)

Tirana, on 17 July 2014

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1. Purpose of the STSM

Short Term Scientific Missions (STSM) "Evaluation and harmonization of adult sand fly and mosquito sampling methods." (Host institution: UNIVERSITY OF NOVI SAD; Period: 22/06/2014 to 29/06/2014; Reference code: COST-STSM-ECOST-STSM- TD1303-17007; Approved amount: EUR 600) in collaboration with Prof. Dušan Petrić and according to the Work Plan previously provided.
Short Term Scientific Missions was aimed at strengthening the existing networks between laboratories and fostering and standardizing the collaboration on state-of-art entomological methods relation with vector phlebotomine sand fly species in the field conditions. Research done contributed to the TD1303 COST Action objectives of "One Health" concept in the ecology of vector-borne diseases (WG1) and investigating rare and emerging vector-borne pathogens (WG5). It also allowed participants to exchange experience in laboratory and field research methods, learn new techniques and gain access to specific environmental/epidemiological conditions concerning parasite and vectors, not available in their own countries. During the study, every participant exchanged its experience in the field of insect vectors. In particular, one new entomologist and one MSc students has been trained on the study of sandflies and mosquitoes sampling techniques and identification.

2. Description of the work carried out during the STSM

a) Field sampling - Countries-wide collections targeting VL endemic sites.

Within June 2014, 371 sand flies and 2672 mosquitoes specimens were collected in Kosovo and Serbia, with the aim of providing information on sand flies and mosquitoes species distribution and prevalence, and to search for *sand flies virus* infections in putative vectors by means of molecular methods. The survey included a total of 42 sites.

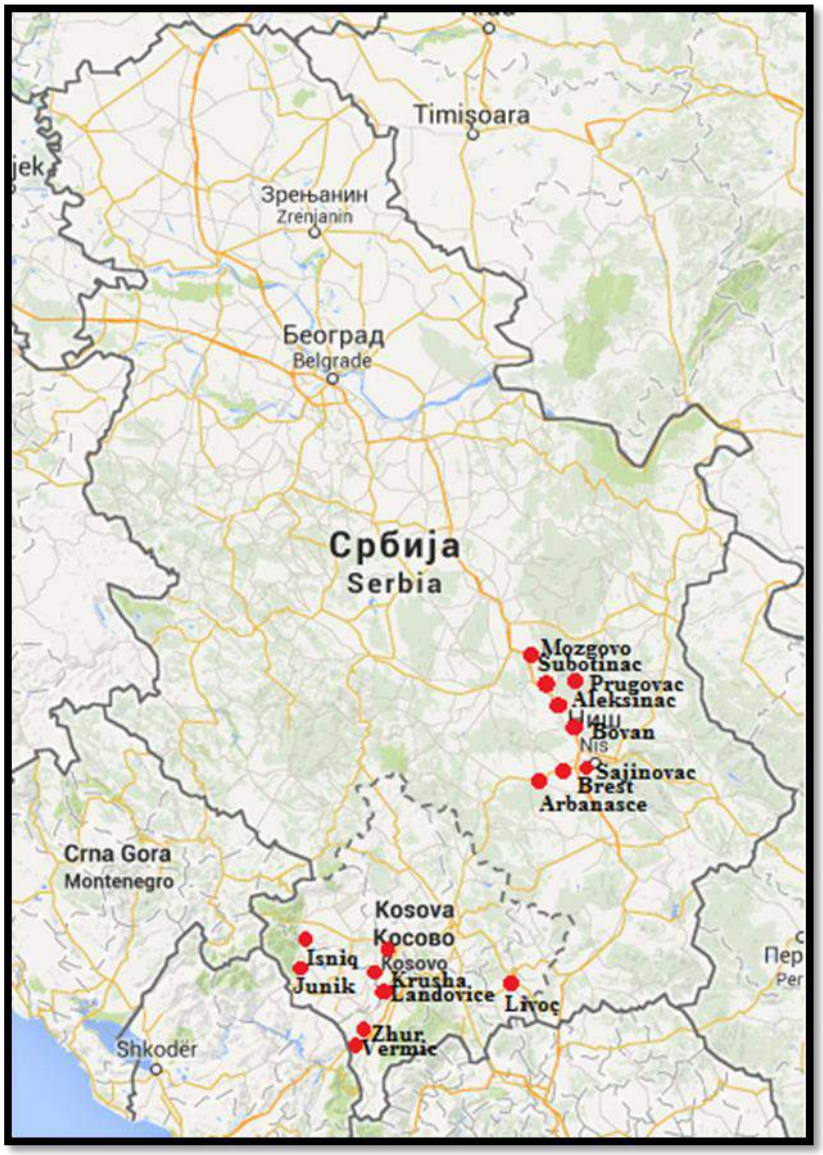

Figure 1. Field Study Locations.

Target areas consisted urban and rural environment, small villages or peri-urban quarters of towns where VL cases were recently reported in resident population. Sites consisted of cow barns, dog kennel and chicken pens near houses. A census of potential sand fly hosts revealed communities made of dogs (1-2), cats (1-2), cows (1-17), sheep (0-10), swallows (0-5 nest), chickens (5-15)(2) pony (3). Altitudes of sites varied between the districts, ranging 337.-636 m a.s.l.

b) Sand fly collection

Catches were performed through three methods, (i) standard CDC miniature light traps (Hausherr's Machine Works, Toms River, NJ, USA, Jon Hook Company); (ii) IMT (Insect Monitoring Trap) baited with light and dry ice and (iii) sticky paper. 1-3 CDC light trap or IMT trap, per site were set in covered or protected habitats such as in or near animal shelters, in courtyards adjacent to houses or under the eaves of buildings. Traps were suspended so that the attracting light source was approximately 1.5 meters above the ground and were operated from one hour before sunset until one hour after sunrise the following morning. The light traps were retrieved each morning. An average of 5-7 sticky traps (white paper soaked in castor oil) were used in each station for one night.
Collected insects, sand flies and mosquitoes were stored in boxes with dry ice, in order to maintain proper temperature for pathogen/virus survival. Adult female of Anopheles sp. blood feed or/and with eggs were divided in individually in plastic cups with filter paper and proper humidity in order to allow them to lay the eggs for identification into species level. In addition, larvae and pupae of mosquitoes were collected in some sampling points directly from the water and were brought alive into the lab. All sand flies specimens collected, were dissected and two last segments of the abdomen were stored in alcohol 70% for identification. The rest of the body were stored in individual eppendorf tubes to be molecularly screened for presence of pathogen. Males and females were separated prior to identification to species level. Mosquitos' specimens were identified into genus level and stored into dry ice.

3. Description of the main results obtained

During the STSM, the following insect species were collected:

SANDFLY

Sandflies from Serbia and Kosovo;

	Serbia	Kosovo	Total
Female	36	154	190
Male	17	127	144
No abdomen	1	7	8
Sticy Papers	2	27	29
Total	56	315	371

Collected sandfly numbers for each location;

Serbia;

Loc. Code	Location	Sandfly (CDC+SP)
SRB-1	Aleksinac / Kraljevo	12
SRB-2	Aleksinac / Kraljevo	3
SRB-3	Aleksinac / Kraljevo	0
SRB-4	Aleksinac / Kraljevo	0
*SRB-5	Brest	6
*SRB-6	Arbanasce	9
SRB-7	Prugovac	4
SRB-8	Prugovac	7
SRB-9	Subotinac	2
SRB-10	Mozgovo	1
SRB-11	Bovan	2
SRB-12	Jugbodanovac	8
SRB-13	Šajinovac	0
SRB-14	Šajinovac	0
Total		54

Kosovo;

Loc. Code	Location	Sandfly (CDC+SP)
KOS-1	Vermice	1
*KOS-2	Vermice	29
KOS-3	Vermice	2
KOS-4	Zhur	5
KOS-5	Zhur	15
KOS-6	Landrovice	8
KOS-7	Landrovice	22
KOS-8	Krusha E. Madhe	0
KOS-9	Krusha E. Vogel	0
KOS-10	Junik	48
KOS-11	Junik	18
KOS-12**	Junik	1
KOS-13	Isniq	0
KOS-14	Isniq	0
KOS-15	Turjake	0
KOS-16	Livoc	2

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KOS-17	Livoc	2
KOS-18	Livoc	3
KOS-19	Cernice	4
KOS-20	Cernice	4
KOS-21	Semetishti	98
*KOS-22**	Semetishti	4
KOS-23	Nishor	11
KOS-24	Semetishti	4
KOS-25	Peçan I. Vogel	0
KOS-26	Peçan I. Vogel	0
KOS-27	Studençan	34
KOS-28	Studençan	1
Total		315

*Same location used twice

**Traps are fell down or stop working

MOSQUITO

Mosquito (Culex / Aedes / Anopheles) samples from Serbia and Kosovo;

	Serbia	Kosovo	Total
Culex sp.	1465	95	1560
Aedes sp.	280	493	773
Anopheles sp.	19	178	197
Others	35	77	112
Total	1799	843	2642

Tables will be updated according to the results of detailed laboratory studies.

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Novi Sad, 04/07/2014

Confirmation by the host institution of the successful execution of the STSM

I herein confirm the report of Dr. Enkelejda Dikolli (Velo) regarding the COST - STSM-ECOST- STSM-TD1303-17007 in Serbia.

Novi Sad, 4th July 2014

Yours sincerely

Prof. Dr. Dušan Petrić