



**European Network for the durable exploitation of crop protection strategies**

**IA3 Activity: Human resource exchange**

**ENDURE - Internal Mobility**

***Final activity report***

*(The form has to be filled in and sent to the activity leader – message should be sent to his p.a. [federica.piccolo@ibaf.cnr.it](mailto:federica.piccolo@ibaf.cnr.it) – within 15 days after the end of the visit)*

**Relationship of arthropods to their habitats at landscape scale**

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**1. Information about researcher and sending partner**

**Name and surname:** Andrea Veres

**Professional status:** post doc (*PhD student, post-doc, junior or senior scientist*)

**Sending partner:** SZIE

**Institute/Department/Research Unit:** Plant Protection Institute

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**Supervisor name\*:**

**Supervisor e-mail\*:**

**Supervisor phone number\*:**

\*Supervisor information only for PhD student, post-doc and junior researchers

**2. Information about hosting partner**

**Hosting partner:** Rothamsted Research

**Institute/Department/Research Unit:** RRES Ecosystem Dynamics and Biodiversity Group, Department of Plant and Invertebrate Ecology

**Address:** Ecosystem Dynamics and Biodiversity Group, Department of Plant and Invertebrate Ecology, Harpenden, Hertfordshire, AL5 2JQ. United Kingdom (*street, postal code, city*)

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### **3. Information about the visit**

**Starting date:** 29th of June 2010

**Ending date:** 15<sup>th</sup> of July 2010

**Total duration** (*number of weeks*): 2

### **4. Description of the activities and outcomes**

#### **Background and context:**

The aim of the mobility was to contribute to the ENDURE session at the workshop of IOBC Landscape Management for Functional Biodiversity working group in Cambridge and to further elaborate and publish the GIS data of my research work done in Hungary. These data were on habitats (greenhouses and other land cover features) and arthropod abundance (*Frankliniella occidentalis*, *Thrips tabaci*, *Orius* spp.) measured by using different methods. Spatial statistic methods are needed to analyse the relationship between the abundance of insects and the landscape structure, therefore we collaborated in using the software SADIE (Spatial Analysis by Distance IndicEs) developed by RRES ([http://www.rothamsted.ac.uk/pie/sadie/SADIE\\_home\\_page\\_1.htm](http://www.rothamsted.ac.uk/pie/sadie/SADIE_home_page_1.htm)).

#### **Objective:**

- to contribute to the ENDURE session at the workshop of IOBC Landscape Management for Functional Biodiversity working group
- to find appropriate statistical method to model insect population
- to describe the relationship between the *Orius* spp. and the landscape structure
- to publish results

#### **Activities carried out:**

Participating at the workshop of IOBC Landscape Management for Functional Biodiversity working group in Cambridge:

Poster:

Veres A., Kotán A., Fetyko K., Orosz Sz. és Tóth F. (2010): Innovative methods for measuring *Orius* spp. (Anthocoridae) abundance at a landscape scale. IOBC wprs Bulletin 56: 135-138

Presentations:

Veres A., Petit S., Conord C., Lavigne C. (2010): A literature review on impacts of landscapes characteristics on densities of pests and on their regulation by natural enemies, IOBC wprs Bulletin 56:129-133

Petit S., Lavigne C., Ferguson A., Tixier F., Bohan D., Denholm I., Otto S., Alomar O., Veres A., Eggenschwiler L., Bocci G., Moonen C., Golla B., (2010): Conservation biological control at landscape level: measuring and modelling, , IOBC wprs Bulletin 56: 87-93.

Statistical analysis of *Orius* abundance data using the software SADIE (Spatial Analysis by Distance IndicEs).

## **5. Links between visit activity and ENDURE**

As a member of RA2.3 working group I was contributing to the session organized by ENDURE at the workshop of IOBC Landscape Management for Functional Biodiversity working group in Cambridge.

The results of the statistical analysis on *Orius* abundance data will enable further cooperation in publishing together with the members of the RA2.3 activity group even after ENDURE terminates. First these results contribute both to methodology for measuring and modelling the relation of arthropods to their habitats at landscape level, which is an important topic for the group (see also in the position paper presented by the RA2.3 group at the IOBC workshop Petit et al 2010). Second the study provides information about the ecology of the predatory bug *Orius* spp. , which has an important conservation biological control potential and so it is a potential study organism for the member of the group.

I spent a 6 months post-doc period and a 3 months mobility at the INRA Avignon doing a meta-analysis of literature data related to the topic crop density and arthropod abundance (RA2.3 Exploitation of landscape and community ecology working group). This identified the lack of hard evidence for a relationship between landscape and the performance of beneficial arthropods. My data were used to test for this link, so this mobility placement further contributed to RA2.3 activity.

## **6. Impact**

### **Added value for the researcher:**

The mobility scholarship provided me the opportunity to participate on the workshop of IOBC Landscape Management for Functional Biodiversity working group to present results of ENDURE RA2.3 activity. I could further collaborate with RRES to elaborate my data with a specific spatial statistic tool (SADIE). We found appropriate statistical tools to analyse *Orius* abundance data of my research. I got familiar with using this software, so I could apply this for similar approaches also in the future. We are interested in further collaboration with my supervisor.

### **Added value for sending partner and hosting partner:**

Both the sending and the hosting partner institute profit from publishing results together in the future, and this effective collaboration provides also opportunities for further projects. The sending institute profits from presenting the research activity carried out at the institute and contacting potential partners for further collaboration. It also profits from the new expertise of the researcher on spatial analysis tools. The hosting institute had the

opportunity to apply their software on independent data and also to test it for large scale experiments.

**Date of submission**

1th of November 2010



Dr. Maurizio Sattin  
IA3 activity leader

Approved

