



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 – within 15 days after the end of the visit)

Topic of the visit

Assessment and evaluation of current and advanced maize-based systems of the MBCS (RA2.6b) with DEXiPM

1. Information about researcher and sending partner

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Professional status: Post-doctoral Research Associate

Sending partner: CNR

Institute/Department/Research Unit: IBAF

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

2. Information about hosting partner

Hosting partner: INRA

Institute/Department/Research Unit: Unité Eco-Innov

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* For senior scientist indicate the name of the collaborating colleague

3. Information about the visit

Starting date: 31/08/09

Ending date: 30/09/09

(please specify starting date and ending date for EACH period of mobility, add lines if needed)

Total duration *(number of weeks):* 4

4. Description of the activities and outcomes

Background and context: Environmental and social sustainability become new challenges for modern agriculture beside economic performances and food safety. Crop protection which is depended mainly on pesticide applications should be put in question, whereas “rational” applications of alternative control methods (genetic, cultural, biological and physical) have proved to be efficient. In this context, advanced or innovative protection strategies for maize-based cropping systems exploring the potential of new approaches or new technologies are studied within the MBCS group (RA 2.6b- ENDURE project). However, before being tested in fields, these innovative systems need to be assessed for their sustainability in order to select the most promising ones.

Objective: The objective of this mobility plan was to assess the environmental, economical and social sustainability of current and advanced maize based systems, described by each participating region/country of the MBCS group (RA2.6b), by getting familiar and using DEXiPM for arable crops, a qualitative and multi-attribute model for *ex ante* assessment of systems developed by INRA, within the EU project.

Activities carried out: Research activities included the following steps: (1) gathering the qualitative data for the assessments by receiving current and advanced system descriptions from all participating region/country of the MBCS group; (2) entering the data in the DEXiPM model; (3) analysing and evaluating the sustainability of the systems described by each region/country; (4) comparing the current with advanced systems proposed for each region/country. During these activities the need for better representation of some environmental attributes of the model (pesticide mobility and pesticide ecotoxicity) led to further research on the way these parameters should be estimated. The outcome of this research was an alternative way for better estimating the above parameters which were applied to maize related pesticides.

5. Links between visit activity and ENDURE

The visit was in relation to DR2.19 of the RA 2.6b 'MBCS' and in general with the RA2.6 'Arable Crops System Case study'

6. Impact

Added value for the researcher: The visit allowed me to improve my knowledge on DEXiPM model which is a promising tool for *ex ante* assessment and will be very useful to me for future evaluations of cropping systems, but also to interact with the INRA researchers and gain from their expertise in modelling for integrated crop protection.

Added value for sending partner and hosting partner:

This opportunity has been profitable for CNR and all partners involved in the MBCS (RA2.6b) as the task to evaluate current and advanced systems was achieved, whereas INRA and the developers of the DEXiPM model had important feedback for the further development of the model. Adaptations were proposed, discussed and accepted for some environmental parameters of the model such as pesticide mobility and eco-toxicity estimation. Results obtained from this activity are going to be published in the near future, confirming the importance of this collaboration.

Date of submission

02/10/09



Dr. Maurizio Sattin
IA3 activity leader

Approved