



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. denise.barreiro@ibaf.cnr.it – within 15 days after the end of the visit)

Topic of the visit

1. Information about researcher and sending partner

Name and surname: Denise Fu Dostatny

Professional status: Scientist

Sending partner: Plant Breeding and Acclimatization Institute (IHAR)

Institute/Department/Research Unit: National Centre for Plant Genetic Resources

Address: IHAR Radzików, 05-870 Błonie

E-mail and phone number of the researcher: d.dostatny@ihar.edu.pl (0048) 725 36 11 ext. 262

Supervisor name*: -

Supervisor e-mail*: -

Supervisor phone number*: -

2. Information about hosting partner

Hosting partner: RRES

Institute/Department/Research Unit: Plant and Invertebrate Ecology Dept. (PIE)

Address: Rothamsted Research, Harpenden, Hertfordshire, AL5 2JQ Herts UK

Supervisor name*: Jonathan Storkey

Supervisor e-mail*: jonathan.storkey@bbsrc.ac.uk

Supervisor phone number*: (0044) 01582 763133 ext 2550

3. Information about the visit

Duration: 7 weeks (with an interval of one week between 06/04/09 and 12/04/09)

Starting date: 03/03/2009

Ending date: 25/04/2009

4. Description of the activities and outcomes

Background and context: *maximum 10 lines*

The training was related to the activities of the Endure RA 4.5: "Weed biology and management". In the last decades considerable transformations occurring both in natural communities, and communities of segetal weeds have been observed. The foregoing process results from many factors including the excessive use of chemicals, as herbicides, mainly in organic system of farming. In order to reduce the doses of herbicides we need to have more information on the biology and phenology of each weed species. This knowledge also allowed us to plan a properly weed management and will be integrated into a generic modeling framework.

Objective: *maximum 10 lines*

- to calculate a seedling relative growth rate of annual weeds species from Poland and from UK;
- to compare seedling relative growth rates of common and rare weeds species from Poland and from UK;
- to parameterise a simple simulation model of early seedling growth
- to compare the different growth rates of weeds during the early part of vegetation season;
- literature search on one weed species: *Avena fatua* in order to characterise its physiology and competitive behaviour.
- to analyse different data of weed-crop competition and to compare recent approaches on plant traits for the definition of functional groups of weeds.

Activities carried out:

Seeds of 5 common and 7 rare species from Poland and UK were germinated on filter papers in Petri dishes (*Agrostemma githago*, *Bupleurum rotundifolium*, *Camelina alyssum*, *Lithospermum arvense*, *Neslia paniculata*, *Scandix pecten-veneris*, *Valerianella dentata*, *Avena fatua*, *Ceutarea cyanus*, *Chenopodium album*, *Echinochloa crus-galli*, *Galinsoga parviflora*). After that all species were sown in pots in a outdoor sand bed in five replicate block and two sowing dates (in a total of the 120 pots). The green area of leaves and stems was measured by a Delta-T leaf area meter. Also the dry weights of the each plant collect part was determined.

The data gathered during this visit have been organized in a datasheet and handled to Dr. Storkey for a further computational analysis. The analysis is expected to be completed by the end of 2009. The results will be used to built a empirical model of yield loss based on relative weed green area (Storkey, 2004).

Other activity carried out during the stay has been a literature search on one weed species, *Avena fatua* in order to characterise the biology, phenology and competitive of this species.

5. Links between visit activity and ENDURE

The training was correlated with the activities of the Endure RA 4.5: "Weed biology and management". The results can be used to characterize parameters in the Weed Traits Database (WTDB) and to identify key parameters in weed population dynamics (in weed model).

The material found in the literature search supplemented the data entered in the Weed Traits Database of the activities of the Endure RA 4.5

6. Impact**Added value for the researcher:**

During my stay I have learnt important concepts of experiment design and methods of methods of analysis of the results. I have also acquainted with other experiments carried out in Rothamsted Research and the stay has allowed me to establish relationships with other researchers that work on the same field area. The training was useful to understand more about weed' models and to enrich my knowledge.

Added value for sending partner and hosting partner:

The knowledge acquired in Rothamsted Research allowed me and my group to continue my work in the activities of the Endure RA 4.5

The results of this experiment carried out during my stay in the Rothamsted Research will be compared with previous researches conducted by my supervisor Jonathan Storkey, which will be valuable data for future studies and will contribute in the activities of the Endure RA 4.5

Date of submission:

Radzików, 22.10.2009 r.



Dr. Maurizio Sattin
IA3 activity leader

Approved

