



## ***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)*

#### **Topic of the visit**

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

**Name and surname:**

**Olga Domeradzka**

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

**PhD student**

**Sending partner:**

IHAR-Radzikow

**Institute/Department/Research Unit:**

Plant Breeding and Acclimatization Institute - National Research Institute

Department of Plant Breeding and Genetics

**Laboratory of Applied Genetics**

**Address:** *(street, postal code, city)*

Radzikow; 05-870 Blonie

**E-mail and phone number of the researcher:**

[olga.domeradzka@ihar.edu.pl](mailto:olga.domeradzka@ihar.edu.pl)

**Supervisor name\*:**

Jerzy H. Czembor

**Supervisor e-mail\*:**

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**Supervisor phone number\*:**

0048227963373

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

## **2. Information about hosting partner**

**Hosting partner:**

INRA

**Institute/Department/Research Unit:**

INRA - Grignon

UMR 1290 BIOGER-CPP,

Pathologie Végétale et Epidémiologie

**Address:** (*street, postal code, city*)

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**Supervisor name\*:**

Claude Pope

**Supervisor e-mail\*:**

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**Supervisor phone number\*:**

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- For senior scientist indicate the name of the collaborating colleague

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

**Starting date:** 12.04.2010

**Ending date:** 28.05.2010

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

**Total duration** (*number of weeks*): 7

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

**Background and context:**

Stripe rust caused by *Puccinia striiformis* Westend f. *tritici* Eriksson., has been an important and one of the most damaging foliar diseases affecting wheat in cool and humid regions. Disease causes yield losses from 10 up to 70% and has been considered one of the most damaging for the wheat production in Europe. Yield losses depend on susceptibility of the grown cultivar, earliness of the initial infection, duration of the disease and rate of disease development. Combining race-specific genes, might provide a more satisfactory control of disease in climates that are less favourable to the pathogen. Although resistance to yellow rust is frequently overcome by new virulent races.

**Objective:**

Conducting series of experiments in the greenhouse and laboratory to assess stripe rust durable resistance based on many minor resistance genes. I very closely investigated components of this resistance. The latent period, length of stripe and sporulation area of wheat isolines, as well resistance associated combinations of different QTLs.

**Activities carried out:**

The experiment was carried out in INRA- Grignon BIOGER greenhouses. However there was a problem with plants vernalization, after 2,5 months of growth in greenhouse conditions plants were not in good condition and did not have headings. That's why we could not inoculate whole isolines set. Therefore planned experiment could not be performed in its entirety. However, we decided to inoculate as many plants as we could and follow the procedure. This allowed me to acquaint with methodology of experiment. Furthermore I have been working with data from experiments conducted in previous years. I started to organize them and catalog for a future paper on this subject. We took also the opportunity to work with yellow rust on seedling stage and postulation of resistance genes.

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

Visit was closely linked with RA4.2 "Exploitation of plant genetic resistance (Leader INRA)". It is in agreement with ENDURE goal: "There is a need to co-ordinate EU resources and approaches for describing, analyzing and exploiting genetic variation at the European scale in order to increase the genepool available for crop protection". The yellow rust is a serious problem in wheat production in many countries of EU. Cooperation on wheat stripe rust is needed because western and central Europe can be considered as one epidemiological area. The subject of planned experiments is closely connected with my PhD program and future professional work. This work will be conducted in close cooperation with leading EU scientists and institutions such as INRA. Practical goal of this visit is to learn the most modern methods for analyzing wheat stripe rust resistance and associated QTLs.

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

Participation in the 4th JPA Mobility program allowed me to read the procedures for dealing with both yellow rust in the seedling stage and adult plants. I received the unique opportunity to develop the data and writing a scientific article. All the skills gained in the profoundly impact on my further research work and can be used in practise.

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

The cooperation between IHAR and INRA it is a great opportunity to exchange knowledge and procedures. Visiting leading EU scientists and institution such INRA, became the best opportunity to learn the most modern methods for analyzing wheat stripe rust resistance and associated QTLs. The yellow rust is a serious problem in wheat production in many countries of EU. Cooperation on wheat stripe rust is needed because western and central Europe can be considered as one epidemiological area. Exchange of knowledge and materials is the best way to maintain contacts.

**Date of submission**

10.06.2010



Dr. Maurizio Sattin  
IA3 activity leader

Approved

