



European Network for the durable exploitation of crop protection strategies

IA3 Activity: Human resource exchange

ENDURE - Internal Mobility

Final activity report

(This form has to be completed and sent to the activity leader – the message should be sent to his p.a. Federica Piccolo [federica.piccolo@pd.ibaf.cnr.it] – within 15 days of the end of the visit)

Topic of the visit

The ultimate goal of the visit was to exchange experiences on yellow rust on wheat in terms of conducting experiments (under field and controlled environment), isolate long and short period storage and glasshouse facilities (and conditions) contributing for better testing.

1. Information about researcher and sending partner

Name and surname: Pawel Czembor

Professional status: Senior Scientist

Sending partner: Plant Breeding & Acclimatization Institute (IHAR)

Institute/Department/Research Unit: Plant Pathology Department

Address: Radzikow, 05-870 Blonie, Poland

E-mail and phone number of the researcher: p.czembor@ihar.edu.pl, (+48) 22 7253611 extn. 302 or 250

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: Aarhus University

Institute/Department/Research Unit: Department of Integrated Pest Management

Address: Research Centre, Flakkebjerg, Forsøgsvej 1, DK-4200 Slagelse, Denmark

Supervisor name*: Mogens Hovmoller

Supervisor e-mail*: Mogens.Hovmoller@agrsci.dk

Supervisor phone number*: +45 89993661

* For senior scientist indicate the name of the collaborating colleague

3. Information about the visit

Duration: 1 month

Start date: February 6, 2010

End date: March 7, 2010

4. Description of the activities and outcomes

Background and context:

Plant genetic resistance is one of the means to improve crop protection against diseases. However, it is of great importance to know any changes in virulence spectrum of the pathogen. Therefore, good procedures for resistance testing and pathogen maintenance are vital for developing resistance oriented breeding strategies. Yellow rust on wheat caused by *Puccinia striiformis* f.sp. *tritici* is of minor importance disease (after powdery mildew, brown rust and septoria blotch) in Poland. In the past, not much attention was paid on that disease. However, new pathotypes adapted to higher temperatures appeared recently in the population increasing threat of incidence of yellow rust on wheat in Poland.

Objective:

The ultimate goal of the visit was to acquire knowledge and experience to work with yellow rust.

Activities carried out:

Seedlings (first and second leaf) of 35 wheat differentials and 60 breeding lines and varieties were tested with 12 isolates of *P. striiformis* f.sp. *tritici* under controlled environment. Among these varieties, 10 Polish cultivars were included: Bamberka, Batuta, Bogatka, Kompana, Legenda, Muszelka, Natula, Nutka, Tonacja and Wydma. Isolates of the pathogen were of diverse geographic origin and different virulence spectrum. Three of them displayed full compatibility interaction with Polish cultivars. The visit gave also a good opportunity to learn more how to handle many technical aspects of testing and working with the fungus (multiplication and storage).

5. Links between visit activity and ENDURE

Visit was related to the 4th Joint Programme of Activity running under RA4.2 – Exploitation of plant genetic resistance. Yellow rust on wheat was one of the pathosystems elaborated under activity mentioned above.

6. Impact

Added value for the researcher:

In the Department of Integrated Pest Management (Flakkebjerg, Aarhus University) scientists carry research on many topics ranging from fundamental work on how pathogens cause disease, using the latest genomic approaches to identify genes and processes involved in pathogenicity, to applied projects on the diagnosis and practical management of diseases in the crop. It was great opportunity to interact with IPM scientists and discuss topics related to *P. striiformis* f.sp. *tritici* – wheat pathosystem. But the most important was possibility to learn how to work with the pathogen and especially all aspects of resistance testing. Finally, I have found invaluable personal relationships established that foster possible future cooperation on currently running and future projects.

Added value for sending partner and hosting partner:

For partners cooperation the most important is experience of scientists and common research questions to answer. Working together on common pathosystem gave unique chance to explore possibility to setup new common projects for both partners.

Date of submission

March 15, 2010



Dr. Maurizio Sattin
IA3 activity leader

Approved