



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

## **IA3 Activity: *Human resource exchange***

### **ENDURE – PhD Scholarship**

#### ***Final activity report***

*(The form has to be filled in and sent to the activity leader – message should be sent to his p.a. [elisa.scanzi@ibaf.cnr.it](mailto:elisa.scanzi@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:** Agnieszka Węgierek

**Professional status:** PhD student

**Sending partner:**

**Institute/Department/Research Unit:**

**Plant Breeding and Acclimatization Institute/ Department of Plant Pathology/  
Laboratory of quarantine diseases.**

**Address:** Radzików, 05-870 Błonie.

**E-mail and phone number of the researcher:** [a.wegierek@ihar.edu.pl](mailto:a.wegierek@ihar.edu.pl)

**Supervisor name\*:** Edward Arseniuk

**Supervisor e-mail\*:** [e.arseniuk@ihar.edu.pl](mailto:e.arseniuk@ihar.edu.pl)

**Supervisor phone number\*:** (+48 22) 725 30 95

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

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

**Hosting partner:**

**Plant Research International/**

**Institute/Department/Research Unit:** Biointeractions and Plant Health

**Address:** Droevendaalsesteeg 1, 6708 PB Wageningen The Netherlands

**Supervisor name\*:** Jan van der Wolf

**Supervisor e-mail\*:** Jan.vanderwolf@wur.nl

**Supervisor phone number\*:** +31 317 47 60 24

\* For senior scientist indicate the name of the collaborating colleague

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

**Duration:** 2.5 months

**Starting date:** 14<sup>th</sup> of September

**Ending date:** 27<sup>th</sup> of November

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

**Background and context:** *maximum 10 lines*

The research of the business unit Biointeractions and Plant Health focuses on the analysis and exploitation of plant/bacteria interactions, both symbiotic and pathogenic. The institute develops new methods and techniques especially to protect cultivated plants. Team of dr Jan van der Wolf is focused on testing, detection and identification of plant pathogens causing economically important crop diseases (mainly on pathogens of tomato and potato). The team does genome analyses for the identification of virulent genes of plant pathogens and develops epidemiological and integrated control strategies of pest and diseases management.

**Objective:** *maximum 10 lines*

The project aims to optimize a method of detection of *Dickeya* sp., a gram-negative pathogenic bacterium responsible for blackleg in potato. Is very important to detect this pathogen in latent infections in seed potato tubers but the sensitivity of PCR and ELISA tests (used routinely by the Plant Inspection Service in The Netherlands) without pre-enrichment test is not efficient partially because of the detection limits and partially also because of the presence of other bacteria. The key factor is therefore the improvement of the enrichment medium to make it more selective for *Dickeya* sp.

**Activities carried out:**

*maximum 20 lines*

Investigation carried out in PRI laboratory was focused on: preparation of medium TSA, PEB, TSB used to storage of bacterial culture. I also use different kind of antibiotics to improvement PEB medium for Dickey'a at the same time inhibited growth another bacteria witch influence negative on growth Dickey'a. Of my duties was 16S rDNA sequence analysis too used to identifications isolated bacterial strains. I did also set up of Real-Time PCR for *Xanthomonas* spp.

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

*Describe links and relevance of your visit in relation to a specific ENDURE activity(ies) and sub-activity(ies) – maximum 15 lines*

My research activities in ENDURE network are strictly connected with project which has been conducted during my stay in Biointeractions and Plant Health Laboratory in PRI. The project was aim to optimize a method of detection of Dickey'a sp., a gram-negative pathogenic bacterium responsible for blackleg in potato. Early detection this bacteria will allow to reduce of dieses spread and also reduce the cost of plant

protection products. It is very important to ENDURE project because it allowed to ecological plant protection what influence in positive way on the environmental because it reduction environmental pollution.

## 6. Impact

### **Added value for the researcher:** *maximum 10 lines*

The main advantage of 3 month scholarship in Wageningen was learning and understanding of use of molecular and serological techniques such ELISA test, 16S rDNA analysis as Real Time PCR and genetic transformation of bacterial species. My stay in PRI allows me to gain experience and widen my knowledge which will be very useful in future research. I have the honour to work with very friendly people who help me to understanding many new techniques which I will be able to use in my PhD project.

### **Added value for sending partner and hosting partner:** *maximum 10 lines*

For sending partner: Training PhD student with new technique for detection and identification important bacteria which are causative agents of potato diseases what would allow the use of knowledge in other research projects.

For hosting partner: Improvement of the enrichment medium help early detection of bacterial potato diseases caused blackleg and ring rot in potato tubers what reduce of diseases spread and reduce the cost of plant protection products.

### **Date of submission**

13/01/2010



Dr. Maurizio Sattin  
IA3 activity leader

Approved