Endophytes in biotechnology and agriculture

FA1103

Start date: 08/12/2011

End date: 07/12/2015

Year: *2*

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Chair

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COST is supported
by the EU Framework Programme

ESF provides the COST Office
through a European Commission contract

Scientific context and objectives (1/2)

- **Background / Problem statement:**

- Identify of bottlenecks limiting the use
- Provide solutions for economical and ecological exploitation

- **Brief reminder of MoU objectives:**

- Gain further knowledge of ecology of endophytes
- Identification of new competent endophytes
- Development of new microbial inocula, elucidation of endophyte recognition, mode-of-action
- Increased cooperation and exchange of knowledge about endophytes (composition of networks)

Scientific context and objectives (2/2)

Research directions:

- Novel insights in the role of endophytes in plant ecology and their dynamic systems in soils

- Isolates applicable for plant growth promotion, for phytoremediation or that can be used as novel sources of therapeutic agents

- Elucidation of the balance of endophytes during biotechnical plant propagation

-Information on regulatory domains, control, risk assessment and legal aspects

Working groups

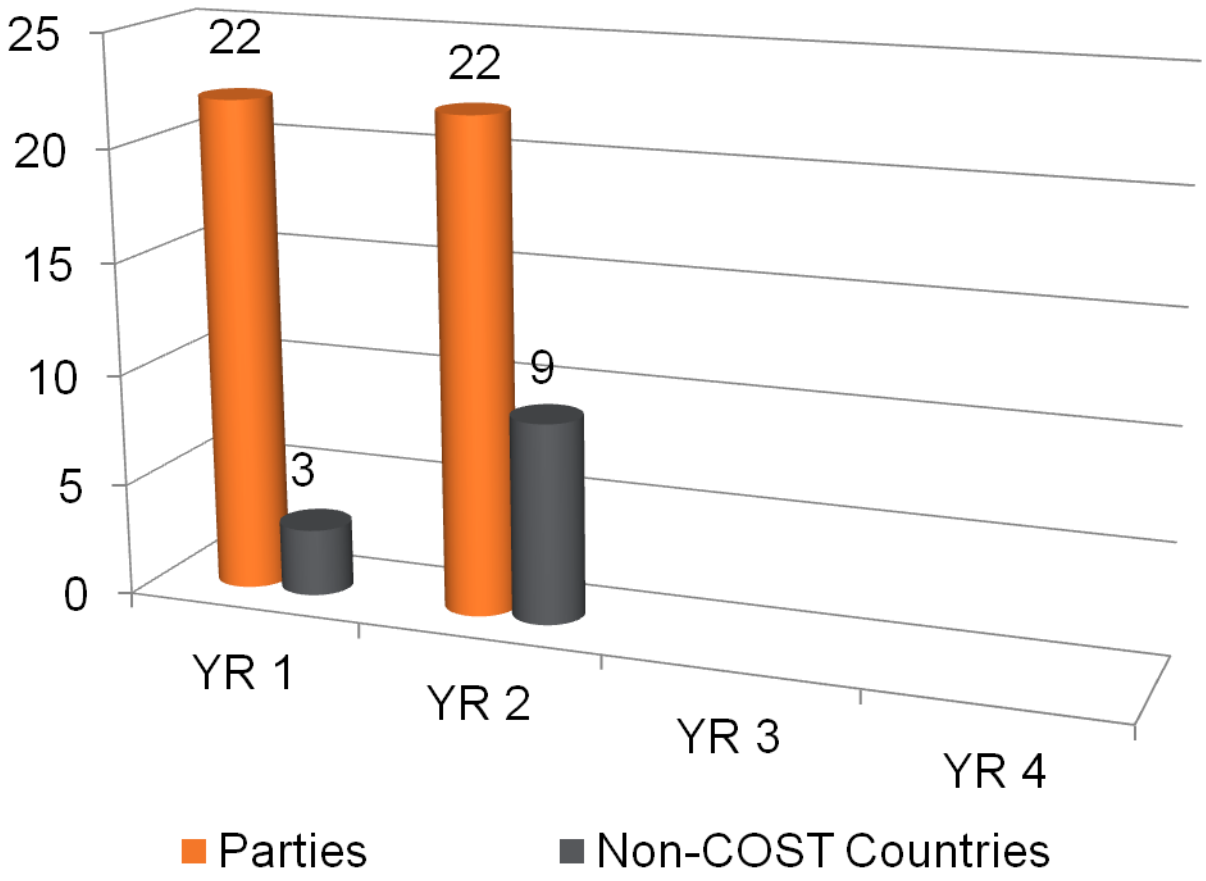
1. Working group ‘Ecology of endophytes’

2. Working group ‘Identification of new competent endophytes’

3. Working group ‘Development of new microbial inocula’

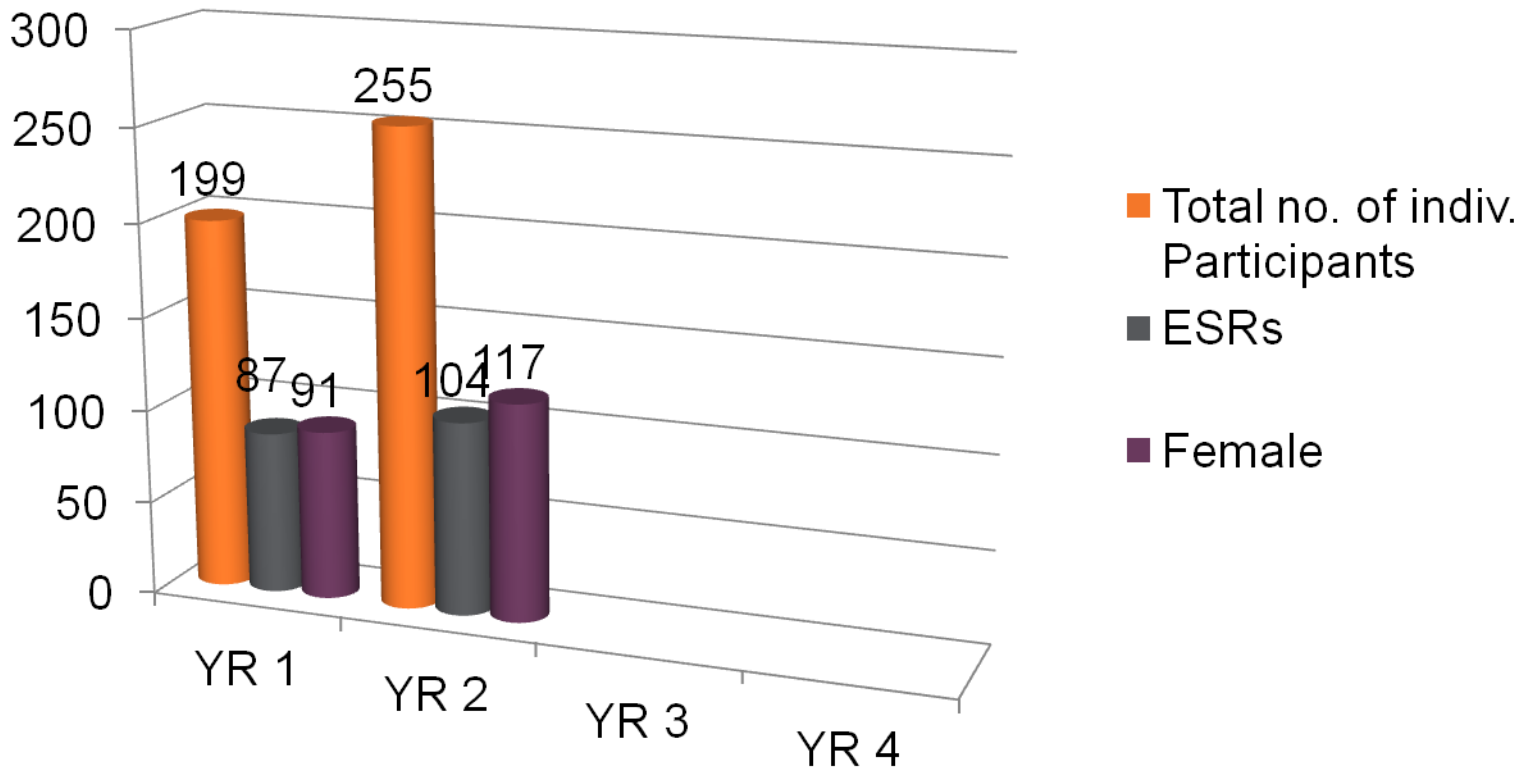
4. Working group ‘New industrial products in life sciences’

Action Parties



Grant Holder:
Inoq GmbH
Carolin Schneider
Germany

Action participants



Use of COST Instruments

Activity (No.)	Year 1	Year 2	Year 3	Year 4
MC/WG Meetings	4	4		
STSMs	6	6	already 6	
Training Schools	0	1		
Workshops or Conferences	2	2		
Joint Publications	36	17		

* Dissemination Meeting 1

Results vs. Objectives (could **not** have been achieved without the Action's research network)

1. Knowledge of ecology of endophytes
- definition (WG1 meeting in Florence towards publication)
- detection + cultivation (special WG1 sessions during conference in Berlin)

2. Identification of new competent endophytes
- database (WG2 meeting, questionnaire)
- conservation (WG3 meeting in Brussels =>QA procedure instruction)

3. Development of new microbial inocula, elucidation of endophyte recognition, mode-of-action
- product overview (publication in Berlin)
- product overview (dissemination meeting in Basel)
- Training School in Braunschweig

Significant Highlights in Science or Networking (1/2)

The activity has had/will have a tangible impact, including tangible medium term **socio-economic impacts and important societal impacts**.

Working Group 3 Meeting "New concepts and strategies for longterm cultivation and conservation of competent endophytes for plant growth and plant protection“

18 Members from 14 countries (COST and NNC)

- 10 oral presentations, 3 sessions with intensive discussions on

1. preservation techniques
2. cultivation methods
3. standard protocols

⇒ QA procedure instruction

Significant Highlights in Science or Networking (2/2)

The activity has had/will have a tangible impact, including tangible medium term **socio-economic impacts and important societal impacts**.

Training School on „Characterisation of biologically active secondary metabolites from endophytic fungi“

- three of the Top European institutions of natural product research were represented as trainers
- 18 trainees with 13 nationalities
- to obtain bioactive microbial metabolites at multi-gram scale is essential for late preclinical drug research and development as well as for development of natural pesticides

⇒ several new STSMs in different constellation

⇒ a new national project proposal

Challenges

- no significant deviations from the work plan **in the past year**
- no critical phases to be implemented **for the upcoming year**