



Management of pest insects

– Management of pest insects in organic strawberry and raspberry fields

Softpest-Multitrap



Aim of the project:

to be able to grow organic strawberry and raspberry without risking significant economic losses

Introduction

The main expected outcome of this project is to develop knowledge about how to manage populations of strawberry blossom weevil, European tarnished plant bug and the raspberry beetle in organic strawberry and raspberry using semiochemical traps. These traps will be selective for these pest insect species and developed for mass trapping. The project investigations will take place in six different countries in central and northern Europe and the outcome will be relevant for growers in the whole region.

Background

Many European growers of organic strawberry and raspberry have large losses in yield (10 - >80%) and reduced quality of their products because of insect damage. In organic soft fruit production there are no effective control measures for many of these pest insects. This has a strong influence on the economic risk and hence the motivation for the growers to develop the organic soft fruit production.

Benefits of the project

The target pests are among some of the most damaging in organic strawberry and raspberry crops in Europe. Even with regular use of pyrethrum sprays, they cannot be effectively controlled to a high standard in organic cropping systems currently. These problems will be overcome. Effective, pest-specific mass trapping in strawberry and raspberry will be developed and combined into single multitrap for the target crops. The work will target organic soft fruit growers in all countries in Europe where these pests are damaging, i.e. throughout central and northern Europe.



Expected results

Our institutions will host members of the project as well as associated BSc, MSc and PhD students for training stays of 1-4 weeks focusing on ongoing research activities related to the project providing participants opportunities for capacity building in areas such as chemistry/ semiochemical, insect ecology and the interdisciplinary aspects of developing the softpest multitrap. The project group will provide their expertise for the Research School for Organic Agriculture and Food Systems (SOAR) to arrange an international PhD summer course 'Challenges and perspectives for pest control in organic farming' in 2012 or 2013.

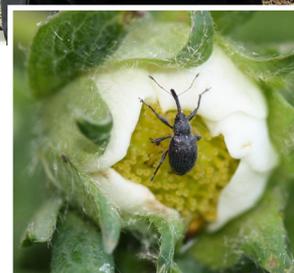
Expected long-term impacts

Growers of organic raspberry and strawberry crops currently have few options for effective control of these pests and development of semiochemical-based, non-pesticidal management techniques will make a major contribution for secure production and reduction of significant economic losses.

Target groups

The work will primarily target organic soft fruit growers in all countries in Europe where these pests are damaging, i.e. throughout central and northern Europe. However, non-organic growers are often criticised for their extensive use of pesticides in soft fruit production. Effective means for managing pest insects without use of insecticides are not available thus non-organic growers will also be interested in the outcome of this project.

Main activities



To identifying plant volatiles influencing pest insect behaviour chemical analysis of the host plants will be done. These identified volatiles will be tested together with pheromones for the targeting insect species in traps deployed in strawberry and raspberry fields. In parallel there will be a development of trap and lure design. In the end of the project all data will be unified in large-scale field experiments to explore the density and pattern for the most effective trap deployment.



Coordinator

PhD, Research Director Atle Wibe, Bioforsk
- Organic Food and Farming Division,
Norway
E-mail: atle.wibe@bioforsk.no

Partners

PhD, Prof. Jerry Cross,
East Malling Research, United Kingdom
PhD, Prof. Anna-Karin Borg-Karlson,
Kungliga Tekniska Högskolan, Sweden
PhD, Prof. David R. Hall, University of
Greenwich, United Kingdom
PhD, Researcher Nina Trandem, Bioforsk,
Norway
PhD, Assoc. Prof. Lene Sigsgaard,
University of Copenhagen, Denmark
M.Sc, Head of group Catherine Baroffio,
Agroscope Changins-Wädenswil,
Switzerland
Dr., Head of Group Ilze Apenite, Latvian
Plant Protection Research Centre,
Latvia
Ardahan University, Turkey



Related projects

- Control of weevils in strawberry production by using plant volatiles and other alternative methods - ES291506 - funded by the Norwegian Research Council.
- Pheromones of strawberry blossom weevil and European tarnished plant bug and control in strawberry crops - HH1939SSF - funded by the UK Department for Environment, Food and Rural Affairs

Project dissemination

- For farmer's and advisers articles in professional magazines and journals will be published (in all partners languages)
- Requests from farmer's organizations, agricultural schools, media etc. for information or presentation about the projects will be encouraged.
- Leaflets for such dissemination of information will be produced.
- For researchers scientific papers and proceedings will be published
- All publications will be uploaded to Organic e-prints

How to reach the endusers

The project will collaborate with farmers and extension services in agriculture to e.g. implement the field trails. By these collaborations a close communication will occur. In addition, with the dissemination of results in relevant magazines and journals and other communications channels the target group will be met.

There will also be collaboration with an industrial enterprise for e.g. trap design development. This enterprise will have a strong interest in manufacturing the end product.

Further information

This project is funded via the ERA-net CORE Organic II by national funds to each partner. CORE Organic II is a collaboration between 21 countries on initiating transnational research projects in the area of organic food and farming. In 2011, CORE Organic II selected this project and 10 more for funding.

Read more about the project at the CORE Organic II website: www.coreorganic2.org/Softpest_multitrap and in Organic Eprints: <http://orgprints.org/view/projects/>