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NJF Seminar 493

Integrated crop protection (IPM) in Nordic and Baltic berry crops

Riga, Latvia, 30-31 January 2017

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NJF Seminar 493

Integrated crop protection (IPM) in Nordic and Baltic berry crops

30-31 January 2017,

Avalon Hotel, Riga, Latvia

The seminar is organized by working group

Plant Protection in Sustainable Berry Production

in NJF Section "Plants"

Seminar organizing committee:

Liga Feodorova-Fedotova, Latvian Plant Protection Research Centre, Latvia

Baiba Ralle, Private (previously Latvian Plant Protection Research Centre), Latvia

Nina Trandem, Norwegian Institute of Bioeconomy Research, Norway

Päivi Parikka, Natural Resources Institute Finland, Finland

Lene Sigsgaard, University of Copenhagen, Denmark

Birgitta Svensson, Swedish University of Agricultural Sciences, Sweden

Biruta Bankina, Latvia University of Agriculture, Latvia

Program

Monday 30 January

9:15-10:00 Registration and coffee
10:00-10:15 Welcome and introduction
Nina Trandem, Chair of NJF working group "Plant protection in sustainable berry production"
Baiba Ralle, representative of seminar local organizers
Janis Jasko, Deputy Head of Science, Latvian Plant Protection Research Centre

Session one: *Drosophila suzukii* and other new pests in the northern zone *(session leaders: Nina Trandem, Lene Sigsgaard)*
10:15-11:00 Keynote lecture: Experiences with *Drosophila suzukii* and other current issues in Swedish berry production (Sanja Manduric)
11:00-11:20 *Suzukii*-situation and other pest challenges in Denmark (Helle Mathiasen & Nauja Lisa Jensen)
11:20-11:45 *Suzukii* situation in Norway (Nina Trandem), Finland (Isa Lindqvist), Latvia (Baiba Ralle), Lithuania (Neringa Rasiukevičiūte) (5 minutes each)
11:45-12:30 Questions and discussion: How to monitor and manage *D. suzukii* in the Northern zone

12:30-13:30 Lunch

Session two: Managing plant diseases without promoting fungicide resistance *(session leaders: Päivi Parikka, Julija Vilcane)*
13:30-13:50 Current status of UV treatments against powdery mildew in strawberry (Arne Stensvand)
13:50-14:10 Possibilities for biological control of red core (*Phytophthora fragariae*) (Päivi Parikka)
14:10-14:30 New postharvest technologies reducing strawberry grey mould (Neringa Rasiukevičiūte)
14:30-14:50 Fungicide resistant *Botrytis* strains occur in strawberry and raspberry in Norway (Gunn Mari Strømeng)

14:50-15:15 *Coffee break*

15:15-15:35 Antrachnose in highbush blueberries, overview in Northern Europe (Julija Vilcane)
15:35-15:55 A biological alternative for the control of diseases on soft fruit crops (Marja-Leena Lahdenperä)

15:55-17:00 **Poster Session** *(session leaders: Baiba Ralle, Anne Lemmetty)*
Rubus stunt phytoplasma in raspberry in Norway (Dag-Ragnar Blystad)
Use of predatory mites in conventional raspberry production in Norway (Anne Vintland)
Functional agrobiodiversity – a novel approach to optimize pest control in fruit production (Stine Kramer Jacobsen)

Biological control of root pathogens in strawberry cultivation in tunnel (Birgitta Svensson)
Strawberry-legume intercropping for sustainable production (Valda Laugale)
Occurrence of the sea buckthorn fly *Rhagoletis batava* in Finland (Isa Lindqvist)
Risk protocol for *Drosophila suzukii* in Sweden (Birgitta Svensson)

Session three: IPM and plant protection in Latvian berry production *(session leaders: Baiba Ralle, Anne Lemmetty)*

17:00-17:20 The situation of pests and diseases in Latvian berry crops in context of IPM (Baiba Ralle and Julija Vilcane)
17:20-17:40 Current problems in berry crop cultivation at the Institute of Horticulture, Latvia (Ieva Kalnina)

17:40-18:00 Summing up the conclusions and recommendations from the *D. suzukii*-discussion (Nina Trandem, Lene Sigsgaard)

18:00-18:05 *Technical information about dinner (Baiba Ralle)*

Ca 19:30 Conference dinner

Tuesday 31 January

Session four: Towards a system approach - interactions between organisms *(session part one leaders: Birgitta Svensson, Nauja Lisa Jensen)*

08:30-09:10 Keynote lecture: Microbiological control in strawberries: results from IMBICONT bilateral collaboration between Brazil and Denmark (Jørgen Eilenberg)
09:10-09:30 Functional agrobiodiversity for control of pests (Lene Sigsgaard)
09:30-09:50 IPM in strawberry – testing 3 IPM regimes in 5 Norwegian commercial fields (Nina Trandem)
09:50-10:10 Cropping practice influences *Tetranychus urticae* and arthropod natural enemy distribution, abundance and diversity in strawberries (Stine Kramer Jacobsen)

10:10–10:30 *Coffee break*

(session part two leaders: Dag-Ragnar Blystad, Sanja Manduric)

10:30-11:10 Keynote lecture: Soft fruit viruses spread by mites and insects (Stuart MacFarlane)
11:10-11:30 The raspberry leaf blotch disorder puzzle (Anne Lemmetty)
11:30-11:50 *Rubus* stunt phytoplasma in Norway (Dag-Ragnar Blystad)
11:50-12:30 Plant parasitic nematodes in berry production (Christer Magnusson)

12:30-13:30 Lunch

(session part three leaders: Helle Mathiasen, Arne Stensvand)

13:30-13:50 *Trichoderma spp.* and potassium phosphite in the cultivation of strawberries in substrate, preliminary results (Birgitta Svensson)

13:50-14:30 Optimizing the pesticide application technique against pests and diseases: results and experiences from Norwegian berry crops (Jan Karstein Henriksen)
14:30-15:00 The future of this seminar series. Closing.

Contents

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(in alphabetical order)

Functional agrobiodiversity for control of pests

Lene Sigsgaard[1]

[1]*University of Copenhagen, Faculty of Science, Department of Plant and Environmetal Sciences, Thorvaldsensvej 40, DK-1871 Frederiksberg C, +45 3533 2674, les@plen.ku.dk*

Functional agrobiodiversity (FAB) uses design and management of crops and their surroundings to gain more natural enemies, making crops more robust to pests. One method can be to provide increased plant diversity such as by establishing flower strips. The flower strips can provide alternative prey, pollen and nectar, and habitat to natural enemies of insect pests. To provide the relevant natural enemies with the resources they need and at the time and place they need it knowledge of plant and insect biology and ecology is key. It is also important that a flower strip does not include plants that are known to support pests. In addition to this comes agronomic factors such as how the flower strips are managed.

Studies in organic orchards in Denmark have shown that flower strips can reduce pest infestation by codling moth in apple trees, increase predation activity and lead to a reduced percentage of damaged fruit. An ongoing study, PROTECFRUIT, is investigating if this effect can also be obtained against the rosy apple aphid. As the effect of a flower strip will decrease distance a European collaborative project EcoOrchard is testing interrow flower strips in existing orchards in seven of the partner countries.

Fruit growers are more and more interested in using nature and functional biodiversity to increase beneficial organisms in their orchard, having a positive effect on their product quality, in order to reduce their dependence to pesticides. In EcoOrchard we have developed simple tools for farmers to assess FAB in their own orchard. By achieving regular assessments, farmers are able to better know beneficial insects, and estimate their dynamic in their orchard as well as assess differences in FAB between different parts of the orchard or effects of any changes they made in the orchard.

Based on literature and experiences in apple orchards the use of FAB in fruit and berry crops will be discussed.