



## Plant health for sustainable agriculture

CONFERENCE, 11 – 12 May 2015, Ljubljana, Slovenia

### Scientific Conference within the Cropsustain Project

**Title: PLANT HEALTH FOR SUSTAINABLE AGRICULTURE**

**WHEN:** 11-12 May 2015

**WHERE:** Slovenia, Ljubljana, Cankarjev dom, Linhartova dvorana

### Final Programme

#### 11. May 2015

08:00 – 09:00 Registration

09:30 – 10:00 Welcome and Opening

10:00– 12:10 **Session 1: Challenges in Plant Health** chaired by Saša Širca and Richard Baker

10:00 – 10:20 **Richard Baker:** Protecting EU plant health: pest risk assessment activities and challenges at the European Food Safety Authority

10:20– 10:45 **Richard Baker:** Prioritising actions to enhance plant biosecurity: The UK Plant Health Risk Register

10.45 – 11:10 **Carlo Leifert:** Sustainable Agriculture and Food Security; the need to integrate of crop breeding, nutrition and health management

11:10 – 11:30 Coffee Break

11:30 – 11:45: **Saša Širca:** Root-knot nematodes *Meloidogyne* spp. as emerging pests

11:45 – 12:00 **Sergio Molinari:** Activation of the plant immune system as a sustainable strategy for pest management

12:00 – 12:10 Discussion

12:10 – 13:40 **Session 2: Plant Pests and Diseases Diagnostics** chaired by Irena Mavrič Pleško and Stephan Winter

12.10 – 12:35 **Stephan Winter:** Viruses of major European crops - challenges of disease prevention and control in light of an increased international movement of plant materials and intensified agricultural production



12:35 – 13:00 **Nathan Brown:** Unravelling interactions in complex diseases and disease complexes

13:00 – 13:15 **Pasquale Saldarelli:** The association of Grapevine Pinot gris virus with grapevine leaf deformation and mottling

13:15 – 13:30 **Nataša Mehle:** Phytoplasmas of grapevine: molecular diversity of Slovenian strains and new diagnostic challenges

13:30 – 13:40 Discussion

13:40 – 15:00 Lunch

15:00 – 17:10 **Session 3: Nonchemical (Alternative) Control of Pests and Diseases** chaired by Hans-Josef Schroers and Johannes A. Jehle

15:00 – 15:25 **Johannes A. Jehle:** The use of baculoviruses in biological control of insect pests

15:25 – 15:50 **Marc Stadler:** Phylogeny and chemical ecology of plant-associated fungi and their potential as biofertilisers and biocontrol agents

15:50 – 16:05 **Urška Vrhovšek:** Study of metabolomics changes in grapevine leaves of resistant varieties after infection with *Plasmopora viticola*

16:05 – 16:20 **Jerica Sabotič:** Insecticidal proteins from mushrooms for controlling the Colorado potato beetle

16:20 – 16:35 **Arnaud Costa:** Identification of host plant volatiles from four varieties of caraway (*Carum carvi*) using dynamic headspace collection

16:35 – 16:50 **Alexandra Esther:** Natural substances against bird damage - Development of a biological repellent

16:50– 17:10 Discussion

17:10 – 17:30 Coffee Break

17:30 - 19:00 **Poster session**

20:00 Conference dinner



**12. May 2015**

09:00 – 11:00 **Session 4: Biotechnology and Plant Breeding for Plant Protection**  
chaired by Vladimir Meglič and Ales Lebeda

09:00 – 09:25 **John Jones:** Functional analysis of the roles of nematode effectors in the susceptible plant-nematode interaction

09:25 – 09:50 **Lothar Frese:** Genetic resources and plant breeding

09:50 – 10:05 **Ales Lebeda:** Resistance of wild *Lactuca* germplasm to diseases and pests, and their exploitation in lettuce breeding

10:05 – 10:20 **Peter Dolničar:** Potato breeding for resistance at the Agricultural Institute of Slovenia

10:20 – 10:35 **Kristina Gruden:** *Potato Virus Y* infection hinders potato defence response and renders plants more vulnerable to Colorado potato beetle attack

10:35 – 10:50 **Tanja Zadražnik:** Use of proteomics in breeding for drought tolerance in common bean

10:50 – 11:00 Discussion

11:00 – 11:30 Coffee Break

11:30 – 13:00 **Session 5: Prognosis and Decision Supporting Systems** chaired by Andrej Simončič and Martin Hommes

11:30 – 11:55 **Vittorio Rossi:** Development and delivery to growers of Decision Support Systems for sustainable crop protection

11:55 – 12:20 **Per Rhyndal:** A generic decision support system for integrated weed management

12:20 – 12:35 **Martin Hommes:** Decision support systems for German vegetable growers

12:35 – 12:50 **Uroš Žibrat:** Application of remote sensing imagery in precision agriculture

12:50 – 13:00 Discussion

13:00 – 14:00 Lunch



14:00 – 15:30 **Session 6: IPM and Good Agricultural Practice** chaired by Gregor Urek and Per Kudsk

14:00 – 14:25 **Nick Birch:** How agro-ecological research helps to address food security issues under new IPM and pesticide reduction policies for global crop production systems

14:25 – 14:50 **Ilaria Pertot:** Non-targeted side effect of microbial fungicides on grapevine: fact or fantasy?

14:50 – 15:05 **Vivian Blok:** Population dynamics of *Globodera pallida* in relation to temperature

15:05 – 15:20 **Davide Mosetti:** Sustainable Territorial Wines (STW): field-scale application of DSS and best practices for plant disease management in Friuli Venezia Giulia region

15:20 – 15:35 **Rozalia Pecze:** Biodiversity & runoff best management practice for protection and productivity

15:35 – 15:45 Discussion

15:45 – 16:45 **Networking for and Collaboration in future joint research and projects**

**Hans-Josef Schroers:** CropSustaIn networking platform

**Renata Rozman:** Future research projects calls

16:45 – 17.00 Conclusions and Closing

## POSTER PRESENTATIONS

(Presenting Author: Presentation title)

### **Session 1: Challenges in Plant Health**

Sava Vrbcin: Influence of herbicides on chlorophyll fluorescence in *Ambrosia trifida* L.

Denis Kutnjak: Tracking within-plant virus population diversity by next generation sequencing

Vlasta Knapič: Healthy Plants as a Criterion for Entering Foreign Markets

Aleš Sedlar: Gene Expression in Necrotic Lesions of PVYNTN-infected Potato Tubers

Maja Meseldžija: The impact of the reduced amount of mesotrione on photosynthetic pigments content according to the irrigation water quality

Abdelnaser Elashry: RNAseq analysis of the *H. schachtii* transcriptome reveals new putative effectors

Janja Lamovšek: PR-1 Gene is Up-Regulated in Tomato Roots During Antagonistic Interaction Between Pathogenic *Agrobacterium tumefaciens* and *Meloidogyne ethiopica* Root-Knot Nematode

Dejan Prvulovic: The Biochemical Mechanisms of Defense of Maize Leaf on Herbivore Pest Insects Attacks

### **Session 2: Plant Pests and Diseases Diagnostics**

Melita Štrukelj: Importance of Virus-Vector Interaction Studies for Management of Virus Infections in Vineyards

Polona Strajnar: Hyperspectral remote sensing - new approach for root knot nematode detection?

Barbara Gerič Stare: DNA markers for species identification and phylogenetic inference in *Meloidogyne ethiopica* and other tropical root knot nematodes

Irena Mavrič Pleško: Emaraviruses of *Rubus* Plants – From Symptoms to Detection

Irena Mavrič Pleško: Current impact and future directions of high throughput sequencing in plant virus diagnostics: the drivers of COST Action 1407

Nedeljko Latinovic: The most important fig mycoses in Montenegro

Jelena Zindovic: Current Status of Economically Important Viruses Infecting Grapevine in Montenegro

Francesca De Luca: Evaluation of silencing of parasitism genes in *Pratylenchus vulnus*

Vlada Peneva: Longidorid Nematodes: Do We Know them? Balkan Peninsula Issues

Dijana Škorić: The rape phyllody disease: Is there a new player in the old game?

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Dijana Škorić: The rape phyllody disease: Is there a new player in the old game?



Gökhan Aydınlı: Root-knot Nematodes (*Meloidogyne* spp.) from Vegetable Growing Greenhouses in the Middle Black Sea Region of Turkey

Manca Pirc: Optimising Droplet Digital PCR Analysis Approaches for Detection and Quantification of Bacteria: A Case Study of Fire Blight and Potato Brown Rot

Cafer Eken: Pathogenicity of *Fusarium* species isolated from sugar beet (*Beta vulgaris* L.) plants in Pasinler district of Erzurum, Turkey

Maja Ravnikar: Presence, diversity and epidemiology of viruses in difficult samples e.g. environmental water systems

Natasa Duduk: Postharvest Decay of Onion Bulbs in Serbia

Ivan Poje: Methods of Detection and Identification of Potato Cyst Nematodes *Globodera* spp. in Croatia

Zoran Jovović: Significant Incidence of Black Rot of the Lower Stem Portion of Potato ("Blackleg") in Montenegro in 2012

Pavol Hauptvogel: Suboptimal doses of nitrogen impact wheat growth and accumulation of defense molecules

### **Session 3: Nonchemical (Alternative) Control of Pests and Diseases**

Dietrich Stephan: Entomopathogenic Fungi: Options for Production and Formulation to Get a Better Efficacy

Giulia Chitarrini: Metabolomic approach to understand biochemical mechanism of resistance in grapevine against *Plasmopara viticola*

Tanja Dreo: Research and Evaluation of Novel Biopesticides: Bacteriophages and Mushroom Antibacterial Proteins

Branimir Nježić: Control of plum sawflies (*Hoplocampa flava* and *Hoplocampa minuta*) by three entomopathogenic nematodes

Jaka Razinger: Laboratory testing of entomopathogenic fungi against wireworms (*Agriotes* spp.) and their rhizosphere competence

Brankica Tanović: Impact of biopesticide formulation type on the efficiency

Gordana Djuric: Fauna as a factor of biological protection of parks in protected area with sustainable use of natural resources "University City"

Aleksandra Popović: Effects of aqueous extracts on the adult insects *Trialeurodes vaporariorum* (Homoptera: Aleyrodidae)

Carlos Lujan: Alternative strategies to manage downy mildew (*Plasmopara viticola* Berk. & Curtis, Berk. & De Toni) reducing copper rates and implementing bioagents or biostimulants

Ana-Maria Stratulat: Preliminary aspects regarding the phytotoxic activity of *Thymus* spp. aqueous extracts

Melita Sternad Lemut: Exploring the prospective toward more sustainable and cost effective vineyard management



### **Session 5: Prognosis and Decision Supporting Systems**

Tor-Einar Skog: VIPS – an Open Source technology platform for prognosis and decision support

Radojko Pelengić: Integration of plant resistance, cropping practices, and biocontrol agents for enhancing disease management, yield efficiency, and biodiversity in organic European vineyards

### **Session 6: IPM and Good Agricultural Practice**

Johannes Hallmann: Nematode dynamics under minimum tillage

Ahmet Uludag: Herbicide resistant weeds: a major threat to weed management in orchards

Klemen Lisjak: Plant Protection Product Residues in grapes and wine from Kras winegrowing region

Juerg, M. Grunder: Field Evaluation of Fungal Based Biological Control of Cabbage Root Fly

Simone Priori: Proximal sensing to map soil functionality loss associated with plant abiotic stress

Ellen Richter: Targeted control of new pests in established systems using *Aleyrodes proletella* as an example

Marina Putnik-Delić: Concentration of Cu, Fe and Zn in cabbage heads produced under different fertilization and mulching regimes

Hans-Josef Schroers: Core Organic Plus project: ReSolVe – Restoring optimal Soil functionality in degraded areas within organic Vineyards

Vojislava Bursic: Modified QuEChERS for Ergosterol Determination by HPLC-DAD

Vojislava Bursic: Sorbent Influence on Validation of Fungicide Residue Determination in Sour Cherries: Statistical Analysis

Pavol Hauptvogel: Suboptimal doses of nitrogen impact wheat growth and accumulation of defence molecules