



IOBC-WPRS  
OILB-SROP

# 9<sup>th</sup> International Conference on **Integrated Fruit Production**

**September 4<sup>th</sup> - 8<sup>th</sup>, 2016**

**Thessaloniki - Greece**

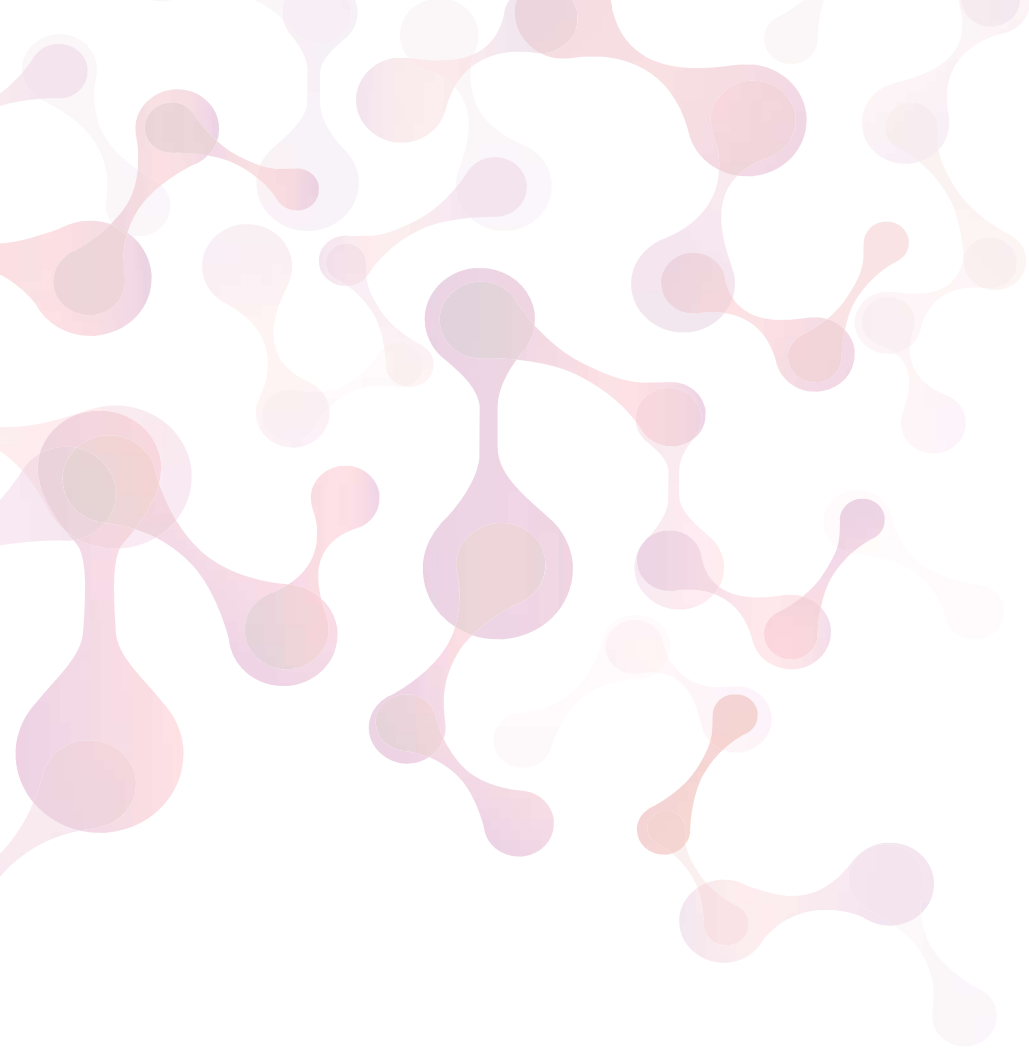
Porto Palace Hotel



Under the auspices of  
Geotechnical Chamber of Greece



## **ABSTRACT BOOK**





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## WELCOME LETTER

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Dear Colleagues,

On behalf of the organizing committee and the "Integrated Fruit Production" working groups we would like to welcome you to the **9<sup>th</sup> International Conference on Integrated Fruit Production** in Thessaloniki, Greece.

This conference is the largest event of the IOBC Integrated Fruit Production (IFP) working group. As you may already know, the conference takes place every 4 years and aims at bringing together and presenting the latest acquisitions in research developed by all subgroups involved in Integrated Fruit Production. In this way, we intend to pursue the mission of the IFP working group, that is taking advantage of the extensive expertise that are available worldwide in Integrated Fruit Production for promoting strategies that minimize the use and impact of the pesticides and reduce the risk for the human health and environment. The workshop sessions and related symposia, in fact, encompass topics that focus on current IPM research, including innovative, rational and sustainable methods for insect and disease pest control.

We are pleased to announce that we have had more than 120 submissions, which will be presented either as oral or poster during the conference. Delegates attending the Conference come from more than 20 countries and are representing academia, research institutes, industries and advisory services. Beside the rich scientific program, the conference will offer them abundance of opportunities for establishing research networking and informal exchange of experiences.

In the end, we are pleased to announce that this year the conference will be held in Thessaloniki, a city with long history and which was set up by King Cassander of Macedonia in 315 B.C and named after his wife and sister of Alexander the Great. Thessaloniki is nearby the Imathia district, which is the Greece's largest Fruit production region and we wish to all of you to have in an exciting experience during your conference visit.

We are looking forward to forging new relationships, strengthening existing ties, increasing our knowledge and to recognizing individuals who have contributed to the success of the IOBC working groups.

On behalf of the organizing committee, thank you all for your support.

**Claudio Ioriatti and Petros Damos**



# 9<sup>th</sup> International Conference on Integrated Fruit Production

## Organizing Committee

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**Claudio Ioriatti** (IOBC WG Convenor of Integrated Protection of Fruit Crops)

**Petros Damos** (IOBC SG Convenor of Stone Fruits and Local Organizer)

**Cristian Linder** (IOBC SG Convenor of Soft fruits)

**Arne Stensvand** (IOBC SG Convenor of Pome fruit diseases)

**Lucía Adriana Escudero-Colomar** (IOBC Convenor of Pome Fruit Athropodes)

Efi Kondodimou (secretariat - Global Events)

Dimitra Chatzara (secretariat - Globael Events)

## Scientific Committee

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**Claudio Ioriatti** (Center for Technology Transfer, Fondazione Edmund Mach, Italy)

**Petros Damos** (Aristotle University of Thessaloniki, Greece)

**Cristian Linder** (Agroscope, Swiss centre of excellence for agricultural research, Swiss)

**Arne Stensvand** (Bioforsk, Norwegian Institute for Agricultural and Environmental Research, Norway)

**Lucía Adriana Escudero-Colomar** (IRTA, Sustainable Plant Protection (Entomology), Spain)

**Carmelo Peter Bonsignore** (Universita Mediterranea Di Reggio Calabria, Italy)

**Michele Fountain** (NIAB East Malling Research, UK)

**Thomas Thomidis** (Alexander TEI of Thessaloniki, Greece)



## CORRELATION BETWEEN PHENOLIC CONTENT AND ANTIOXIDANT ACTIVITY IN FRUITS OF PRUNUS AVIUM INFECTED WITH MONILINIA LAXA

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**Abstract:** Accumulation of phenolic polymers reinforce plant cell walls, limiting fungal penetration. Some of these compounds, such as isochlorogenic acid, are particularly active in limiting fungal extension. Two main features of phenolic compounds are that they are produced in greater quantities by resistant plant genotypes, and that they have the ability to limit plant pathogens growth. Thus, they could be considered as potential markers of resistance to *Monilinia laxa* in sweet cherry breeding programs.

We investigated the content of the total phenols (TP), total tannins (TT) and anthocyanins (A) in the fruits of ten sweet cherry cultivars, before and after the infection with *M. laxa*, under the field conditions. In addition to this, we determined the total antioxidant capacity of the fruit extracts using the DPPH-free radical scavenging assay and FRAP method. The correlations between phenolic classes and antioxidant activity have been calculated, as well.

Results showed that the TP content ranged from 3.71 to 7.52 mg gallic acid equivalent (GAE) g<sup>-1</sup> dry weight depending on the genotype and the infection. TT content was lower and it ranged from 0.52 to 2.64 mg GAE g<sup>-1</sup> dry weight. Anthocyanins content ranged from 0.29 to 2.71 mg cyanidin-3-glucoside g<sup>-1</sup> dry weight. DPPH values ranged from 38.47 to 63.50 % of neutralised radicals, while FRAP values were 14.73-33.69 mg trolox g<sup>-1</sup> fresh weight. No positive correlation was found for antioxidant tests and phenolic compounds investigated. Still, TP and TT were higher in infected fruits of five specimen (Junska rana, Summit, Mershant, Priusodebnaja and Burlat), and A levels were higher in the same cultivars except for the cv. Summit. These cultivars accumulate defensive compounds under the pathogen induced stress and may be considered as more tolerant genotypes with more desired traits for production, selection and breeding programmes.

**Key words:** *Prunus avium*, *Monilinia laxa*, polyphenols, antioxidant capacity