



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**

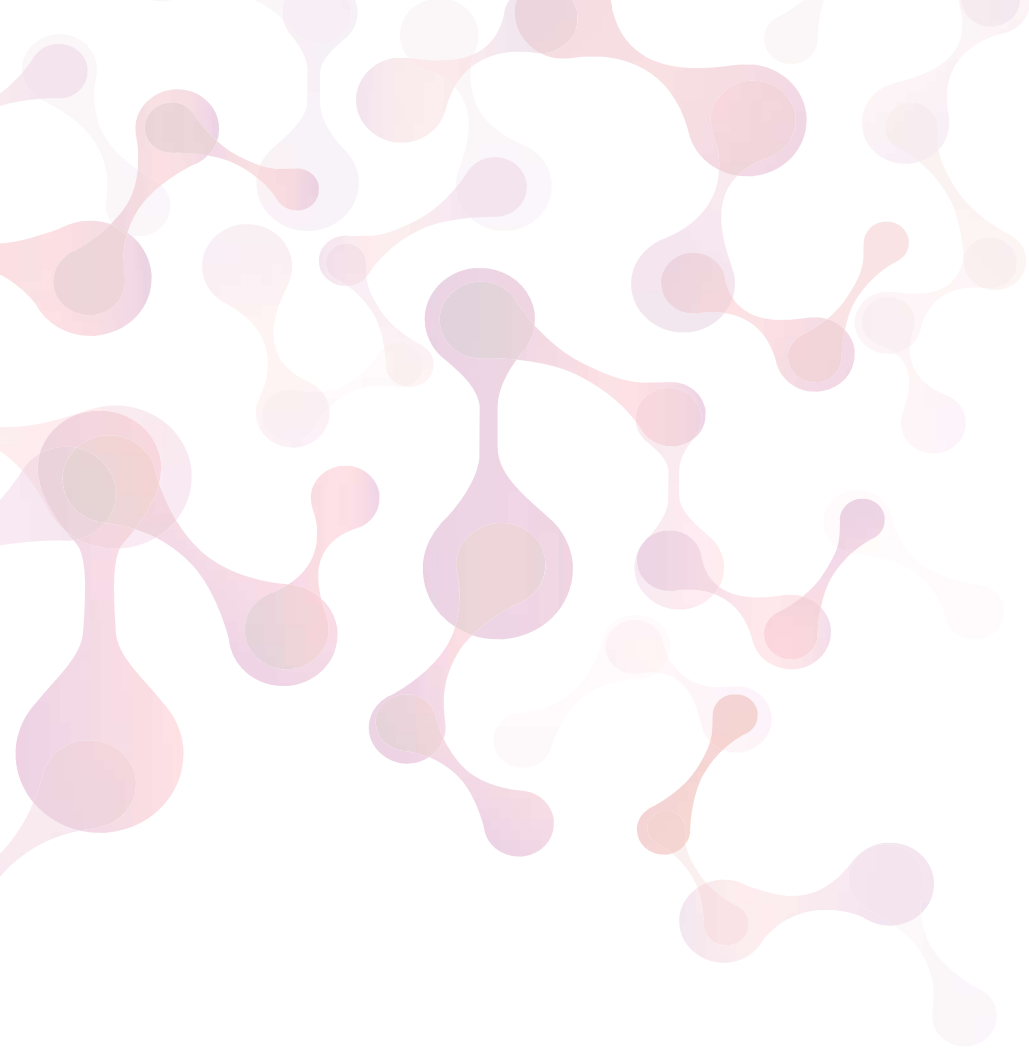
Porto Palace Hotel



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 at 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)



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Poster Session 2: Miscellaneous

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## CHANGES IN SUPEROXIDE-DISMUTASE (SOD) ACTIVITY IN AUXIN TREATED PRUNUS SP. SOFTWOOD CUTTINGS UNDER OXIDATIVE STRESS

**D. Dorić**, Đ. Malenčić, B. Kiprovski, G. Barać, M. Ljubojević, V. Ognjanov

Faculty of Agriculture, University of Novi Sad, Trg D. Obradovića 8, 21000 Novi Sad, Serbia, dusicab@polj.uns.ac.rs

**Abstract:** Oxidative metabolism of normal cells and different stress situations generate highly reactive oxygen species (ROS). The ROS have been implicated in a number of physiological disorders in plants. Such factors as certain mechanical injuries are known to induce ROS formation in most aerobic organisms. Antioxidant defence systems have co-evolved with aerobic metabolism to counteract oxidative damage from ROS. This includes antioxidant enzymes such as superoxide-dismutase (SOD; EC 1.15.1.1). SOD is of the greatest importance since it catalyzes the dismutation of the superoxide radical ( $O_2^{\cdot-}$ ) to  $O_2$  and  $H_2O$ . Thus, the aim of this study was to measure the intensity of SOD in the leaves of six cherry rootstock selections in order to investigate the effect of exogenously applied auxins on the mechanical injury induced oxidative stress during the process of rooting of softwood cuttings.

The experiment was carried out in the plastic house under a fogging system with 95-99% average relative humidity. The 15-20 cm long terminal cuttings were treated with the mix of auxins (IBA, 0.5% and  $\alpha$ -NAA, 0.8%) powder prior to insertion into the white sphagnum and perlite substrate mixture. Leaves of six promising rootstock selections of *Prunus cerasus* L., *P. mahaleb* L. and *P. fruticosa* Pall., and one standard rootstock PHL-A were sampled on the 1<sup>st</sup>, 3<sup>rd</sup> and 7<sup>th</sup> day after inserting softwood cuttings into the rooting substrate. The SOD activity was measured by monitoring the inhibition of nitroblue-tetrazolium (NBT) reduction at 560 nm.

Results showed that generation of ROS occurred in all investigated genotypes, but they greatly differed in susceptibility towards oxidative stress induced by mechanical injury. Application of auxins on standard vegetative rootstock PHL-A, as well as *P. mahaleb* selection M6 showed positive effect on lowering SOD activity after the 3<sup>rd</sup> and 7<sup>th</sup> collecting day compared to control. On the other hand, selections of *P. cerasus* OV22 and *P. fruticosa* SV2 expressed high SOD activity during all collecting days which was from 3.6-54.9% higher compared to control. Enhanced SOD activity in leaves of softwood cuttings indicates induction of the enzymatic antioxidant system in both auxin treated and untreated cutting. According to these results SOD activity could be used as one of the biochemical parameters in further rootstock selection for sweet and sour cherries.

**Key words:** *Prunus* sp., softwood cuttings, abiotic stress, superoxide-dismutase, auxins