



EUCARPIA 2023

XVI Eucarpia Symposium on Fruit Breeding and Genetics

September 11–16, 2023, Dresden-Pillnitz



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11 to 16 September 2023, Dresden-Pillnitz

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Welcome to Dresden-Pillnitz. We, at the Institute for Breeding Research on Fruit Crops, of the Julius Kühn Institute, Germany, have the honour of hosting the third ISFB. We are grateful to our partners – Landesanstalt für Umwelt, Landwirtschaft und Geologie (LfULG) and Hochschule für Technik und Wirtschaft Dresden (HTW Dresden) for supporting to ensure the successful hosting of this conference. We are grateful to all the participants for attending and for presenting scientific contents, which are required for a successful conference. This program provides a detailed overview of the conference, abstracts and participant list.

We encourage you to take time during this week to enjoy the beautiful city of Dresden. We will be organizing a tour of the city for those interested.

Finally, we hope that you have a great time in Dresden and enjoy the conference. We encourage you to be active in making the conference a memorable one by staying engaged and networking. We hope future collaboration will emerge from this meeting. We thank you for attending.

Organizing committee

Institute for Breeding Research on Fruit Crops, JKI

Ofere Francis Emeriewen

Henryk Flachowsky

Monika Höfer

Janne Lempe

Andreas Peil

Dora Pinczinger

Stefanie Reim

Susan Schröpfer

Mirko Schuster

Thomas Wöhner

Central Data Processing, JKI

Hadil Sharifova

Anja Wolck



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Scientific committee

Maria José Aranzana, IRTA, Barcelona, Spain
Giovanni Broggini, ETH Zurich, Zurich, Switzerland
Vincent Bus, Plant & Food Research, Havelock North, New Zealand
Felicidad Fernández, NIAB, East Malling, United Kingdom
Henryk Flachowsky, JKI, Dresden, Germany
Monika Höfer, JKI, Dresden, Germany
Walter Guerra, Laimburg Research Centre, Auer, Italy
Larisa Gustavsson, SLU, Alnarp, Sweden
Nicholas Howard, Fresh Forward, Huissen, Netherlands
Marc Lateur, CRA-W Gembloux, Belgium
Francois Laurens, INRAE, Angers, France
Hélène Muranty, INRAE, Angers, France
Klaus Olbricht, Hansabred GmbH & Co. KG, Dresden, Germany
Andrea Patocchi, Agroscope, Wädenswil, Switzerland
Andreas Peil, JKI, Dresden, Germany
Daniel Sargent, NIAB, East Malling, United Kingdom
Mirko Schuster, JKI, Dresden, Germany
Jiří Sedlák, VŠÚO Holovousy, Czech Republic
Stefano Tartarini, University of Bologna, Bologna, Italy
Stijn Vanderzande, WUR, Wageningen, Netherlands

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D5 - The effect of genotype-temperature interaction on pollen performance in the pistils of autochthonous 'Dolga Šiška' sweet cherry

Ivana Glisic¹, Sanja Radicevic¹, Melpomena Popovska², Sladjana Maric¹, Nebojsa Milosevic¹, Milena Djordjevic¹, Viktor Gjamovski², Bojan Popovski²

¹Fruit Research Institute, Kralja Petra I, 32000 Cacak, Serbia

²Zemindst institute, Aleksandar Makedonski Avenue bb, 1000 Skopje, North Macedonia

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Within sweet cherry (*Prunus avium* L.), diversity is of the crucial importance in the context of adaptation to changing environmental conditions. The cultivars origin, their wider geographical distribution or spatial limitations in certain regions are related to their requirements for adequate conditions, which is especially visible through the reproductive process. This study was carried out to investigate pollen performance in vivo in the pistils of sweet cherry landrace of Balkan origin ('Dolga Šiška') over two-year period, in the conditions of prevailing Mediterranean climate of Ohrid Lake vicinity (Republic of North Macedonia). The pollenisers used are also of indigenous origin – 'Ohridska Crna' (Balkan region) and 'Kordia' (Czech Republic). Investigation was performed using the fluorescence microscopy method, on emasculated hand-pollinated flowers (cross-pollination) and non-emasculated open-pollinated flowers (open pollination), in three terms of pistil fixation (3rd, 6th and 10th day from the full flowering date). In general, 'Ohridska Crna' showed a tendency of inducing higher number of pollen tubes (22.14, 11.78 and 6.20 pollen tubes in the upper, middle and lower part of the style, respectively) in comparison with 'Kordia' (12.72, 6.62 and 2.92, respectively). This effect was particularly pronounced in the year with higher flowering temperature. On the other hand, pollen tube kinetics showed the opposite tendency, being better with 'Kordia' as polleniser in colder flowering season (7.69% of fertilization percentage and 3.60% fruit set, respectively), in comparison with 'Ohridska Crna' (penetration of pollen tubes into the nucellus and fruit set were not observed). Analysis of pollen performance in vivo parameters, pointed to the complex dependence on the polleniser genotype and temperature before and during the flowering, as well as the influence of pollination mode and pistilar genotype, which together contribute to the main factors' interaction.