



> Participants enjoying the symposium dinner.

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# > VII International Symposium on Applications of Modelling as an Innovative Technology in the Horticultural Supply Chain (Model-IT 2023)

Division Postharvest and Quality Assurance

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The VII International Symposium on Applications of Modelling as an Innovative Technology in the Horticultural Supply Chain (Model-IT 2023) was held from June 11-14, 2023, at the Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB) in Potsdam, Germany. The symposium covered a wide range of topics related to modelling, simulation, and digitization in horticulture including growth models and postharvest processes. Sessions were organized on production processes, sensor data analysis, digital transition, gas exchange models, simulation of packaging and storage conditions, non-destructive assessment in packaging, and model-based process control.

The symposium highlighted the importance of using modelling and simulation for optimizing yield, fruit quality, energy conservation, as well as advancing decision support systems in horticulture. The symposium showcased the economic potential of modelling as an innovative methodology in horticultural supply chains and emphasized the importance of integrating digital tools and techniques for

improved productivity and sustainability in the horticulture industry. The event provided a platform for researchers, experts and industry professionals to exchange knowledge, present their findings, and discuss the latest advancements in the field.

The keynote speeches at the Model-IT symposium covered a range of fascinating topics. Dr. Reiner Jedermann focused on modelling for digital twins in horticulture and real-time prediction using live sensor data. Prof. Bodo Bookhagen explored the application of multi-



> Participants of the symposium.



› Convener Dr. Manuela Zude-Sasse (left) presenting the ISHS Young Minds Award for the best oral presentation to Raquel Lozano (right).



› Convener Dr. Pramod V. Mahajan (left) presenting the ISHS Young Minds Award for the best poster to Akshay Dagadu Sonawane (right).

scale point cloud data using LiDAR and structure-from-motion techniques in the environmental sciences. Prof. Bart Nicolaï discussed multiscale modelling of postharvest storage processes, aiming to optimize storage conditions and maintain product quality. Prof. Tsu Wei Chen delved into modelling canopy photosynthesis of greenhouse crops, exploring ways to optimize greenhouse environments and maximize crop yield. These keynote speeches provided valuable insights into data-driven decision-making, emerging technologies, and their applications in the horticultural supply chain, emphasizing the importance of optimization, sustainability, and improved productivity.

Forty oral communications and 28 poster presentations followed in eight sessions dedicated to different themes, ranging from models for postharvest processes to sensors and digital transition in horticulture, model-based process control, modelling and simulation

of packaging and storage, and non-destructive assessment. Among the participants, 21 scientists applied for the ISHS Young Minds Awards. A jury awarded Ms. Raquel Lozano from the School of Food and Advanced Technology, Massey University, New Zealand, with the ISHS Young Minds Award for the best oral presentation for her work on the weight loss of kiwifruit in packaging systems using the Monte Carlo approach. Similarly, Mr. Akshay Dagadu Sonawane from ATB, Germany, was honoured for the best poster, which presented his work on modelling ethylene scavengers for fruit packaging. Both happily and proudly received their awards at an evening event, during which the participants were able to explore Potsdam by boat. On the last day, a tour of the ATB's research laboratories and pilot plants rounded off the intense discussions.

In relation to ISHS Working Group Modelling of Postharvest Processes, Prof. Giancarlo

Colelli has officially concluded his tenure as Chair, whereas Dr. Manuela Zude-Sasse has been elected as the new Chair. Stellenbosch University in South Africa has been chosen to host the upcoming Model-IT 2027 symposium, with Dr. Oluwafemi James Caleb serving as the convener. ●

*Pramod V. Mahajan*

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› Mr. Akshay Dagadu Sonawane (left) explaining ethylene measurement and modelling to the symposium participants during the lab tour.



› Prof. Giancarlo Colelli, Chair of ISHS Division Postharvest and Quality Assurance, congratulating Dr. Oluwafemi James Caleb, Convener of Model-IT 2027 (left) and Dr. Manuela Zude-Sasse, new Chair of ISHS Working Group Modelling of Postharvest Processes (right).