

SYMPOSIUM 09:Robotics, mechanization and smart horticulture					
The Labor Commission Hall, PM					
Monday, May 13					
9.00-9.10	Welcome				
Session I - Data analysys, modelling and DSS - Chairs: Trim Bresilla & Konni Biegert					
9.10-9.40	KN	1	Nikos Tsoulias (Keynote speaker)		Bridging digital shadows with physiological models and field applications
9.40-9.55	0	2	Lukas Bertschinger , Meredith Schuman, Christophe Debonneville, Patrik Kehrlí, Kathleen Mackie-Haas, Stefano Mintchev		SmartGrape –preventing invasive cicada-borne grapevine diseases through drone-based imaging and plant volatile sensing
9.55-10.10	0	3	Agata Jedrzejuk , Marcin Bator, Robert Budzynski, Natalia Kuzma, Ewa Zaraz		Algorithmic pointing of the right moment of watering
10.10-10.25	0	4	Fabien Dutoit , Elena Najdenovska, Cédric Campos Carvalho, Theresa Dunkel, Nathan Miéville, Robert Whittaker, Philippe Monney, Cédric Camps, Laura Elena Raileanu		An intelligent IoT platform as an advisory system for fruit growth
10.25-10.40	0	5	Marco Resecco , Sofia Victoria Prieto, Eric Mozzanini, Luca Bucci, Alessandro Biglia, Silvia Romagnolo, Marco Grella, Elena Gonella		Spray application of Popillia japonica bio-control in vineyard: viability evaluation of entomopathogenic nematodes
10.40-10.55	0	6	Konni Biegert , Stefano Modugno, Magdalena Peterlin, Daniel Pichler, Christian Andergassen, Roy McCormick		Prediction of fruit thinning efficacy with a portable Vis/NIR spectrometer
11.00-11.30	Coffee Break				
11.30-11.45	0	7	Rune Vanbeylen		Comparative analysis of plant stress-reducing ventilation strategies using plant sensors and decision trees across different tomato greenhouses
11.45-12.00	0	8	Silas Föll , Anna-Lena Haug, Roy McCormick, Konni Biegert		Sensor and model based irrigation of apple trees on a deep Luvisol soil
12.15-12.30	0	9	Andreas Gilson , Annika Killer, Lukas Meyer, Dominikus Kitemann, Michael Zoth, Oliver Scholz, Marc Stamminger, Ute Schmid, Patrick Noack, Fabian Keil		CherryTwin: A Holistic Concept for Digital Twins in Horticulture
12.30-12.45	0	10	Gamze Cakirer Seyrek , Özge Horzum, Dr. MÜcähit Taha Özkaya, Dr. Mehmet Ulas, Köksal Demir		Can spectrum of led light be effective in the growth of olive seedlings?
12.45-13.00	0	11	Jelle Westra , Daan Boesten, Sjoerd Nieboer, Sam Aerts, John Bolte		A Novel 3D Gaussian Splatting Approach for Leaf Area Index Estimation of Tomato Plants
13.00-14.00	Lunch				
Session II- Data analysys, modelling and DSS - Chairs: Alexandra Boini & Daniela Sangiorgio					
14.00-14.15	0	12	Cristian Tudor , Roxana Ciceoi, Oana Venat, Victor I. Potra, Viorica Lagunovschi-Luchian		Smart unexpensive automation for vertical farms
14.15-14.30	0	13	Martin Penzel , Lars Zimmermann, Nikos Tsoulias		Terrestrial LiDAR enables to detect differences in canopy growth habits of mature sweet cherry trees originating from different rootstocks
14.30-14.45	0	14	Mark Mueller-Linow , Fang He, Arnd Juergen Kuhn, Lena Grundmann		Smart monitoring of the Arnica flower development for better harvest times
14.45-15.00	0	15	Dunkel Theresa , Elena Najdenovska, Monney Philippe		Novel fruit growers advisory system using connected fruit dendrometer, micro-climate data and machine learning algorithms
15.00-15.15	0	16	Damiano Zanotelli , Dolores Asensio, Nicola Giuliani, Christian Chini, Enrico Tomelleri, Massimo Tagliavini		Radial pattern of sap flux velocity in apple trees and its consequences for the whole tree transpiration assessment
15.15-15.30	0	17	Arash Khosravi , Francesco Belluccini, Adriano Mancini, Veronica Giorgi, Enrico Maria Lodolini, Davide Neri		Tracking the Pulse of Olive Trees: High-Frequency Data Collection Across Root, Trunk, Branch, and Fruit
15.30-15.45	0	18	Jorge Solis , Geni Carmen Zanol, Karl-Johan Bergstrand		Intelligent Lighting Control System for Greenhouses with a High Proportion of Local Renewable Energy
15.45-16.00	0	19	Pierre Lejeune , Anthony Fratamico, Pierre Tocquin, Gauthier Corbisier, Adrien Degallier, Paolo Dekeyzer		APIC : an indoor cultivation system for optimization of high added-value productions
16.00-16.30	Coffee Break				
Session III- Automation, Robotics and AI - Chairs: Mihai Gabriel Matache & Luigi Manfrini					
16.30-16.45	0	20	Jack Verhoosel , Paolo de Heer, Julia García Fernández, Jesse van Oort, Jeroen Fransman, Marcel van Vliet		Semantic Explanation and Navigation for Greenhouse Robotics Systems
16.45-17.00	0	21	Davide Belletti, Aneesh Chauhan, Leo Marcelis, Julian Verdonk, Silvia Langer		Evaluation of Postharvest Robotic Gripping on Quality of Two Tomatoes Cultivars
17.00-17.15	0	22	George Ipate , Edmond Maican, Daiana Alina Ionescu, Raluca Adriana Zota, Gheorghe Voicu, Filip Ilie, Constantin Cotici		New Perspectives in Modern Horticulture – "Farmbot - The Garden Robot"
Tuesday, May 14					
8.00-19.00	Technical Tours				
Wednesday, May 15					
Session III- Automation, Robotics and AI: Chairs: Gianmarco Bortolotti & Nikos Tsoulias					
9.00-9.30	KN	23	Trim Bresilla (Keynote speaker)		Innovations in Agriculture: Harnessing AI and Robotics for Orchard Management Practices

9.30-9.45	O	24	Florin Bogdan Marin , Mihai Gabriel Matache, Marin Mihaela, Daniela Laura Buruiana, Gheorghe Gurau	Tomato robotics harvesting based on 3D pose detection algorithm using artificial intelligence
9.45-10.00	O	25	Giovanni Puliga , Dieter von Hörsten, Mohammadreza Hassanzadehtalouki, Ulrike Wilczek, Jens Karl Wegener	Development of a robotic solution to control slugs in lettuce crops
10.00-10.15	O	26	Francesco Vicino , Francesco Maldera, Giuseppe Lopriore, Francesco Nicoli, Vincenzo Carone, Simone Pascuzzi, Salvatore Camposeo	Vibration transmission analysis in monumental olive trees for precision pruning: the PULP System Approach
10.15-10.30	O	27	Angeliki Kavga , Vasileios Thomopoulos, Theodoros Petrakis, Spiros Lykourgiotis, Manos Christopoulos	Enhancing Aloe Vera cultivation: insights from a large-scale pilot smart greenhouse with IoT and robotic device
10.30-10.45	O	28	Florin Bogdan Marin , Daniela Laura Buruiana, Mihai Gabriel Matache, Gheorghe Gurau, Mihaela Marin	Flower detection using computer vision algorithm and three-dimensional mapping for automatic pollination using robotic platform
10.45-11.00	O	29	Dario Mengoli , Gianmarco Bortolotti, Simone Rossi, Mirko Piani, Nicolò Omodei, Luigi Manfrini	A realtime in-field trunk size estimation using low-cost RGBD cameras
11.00-11.30	Coffee Break			
Special Session on SHEET EU-Project - Chair Dario Mengoli & Luigi Manfrini				
11.30-11.45	O	30	Nikos Tsoulas	Sheet - Sunburn and HEAT prediction in canopies for Evolving a warning Tech solution
11.45-12.00	O	31	László Baranyai , Lien Le Phuong Nguyen, Viktória Zsom-Muha, Zoltán Gillay	Application of artificial intelligence in prediction of sunburn damage of fruit
12.00-12.15	O	32	Daniela Sangiorgio , Gianluca Allegro, Chiara Pastore, Gabriele Valentini, Gianmarco Bortolotti, Prof. Ilaria Filippetti	Sunburn Dynamics: Exploring Occurrence and Evolution on Vitis vinifera Berries - A Case Study of 'Sangiovese' and 'Pignoletto' Cultivars
12.15-12.30	O	33	Alexandra Boini , Gianmarco Bortolotti, Brunella Morandi	Orchard management changes solar radiation profiles, influencing apple sunburn
12.30-12.40	P	34	László Baranyai, Belle Murtagh , Flora-Juliane Slezak, Gianluca Allegro, Ilaria Filippetti, Brunella Morandi, Alexandra Boini, Luigi Manfrini, Gianmarco Bortolotti, Manuela Zude-Sasse	Mobile App for analyzing the heat damage risk in grape and apple fruit
12.40-12.50	P	35	Alexandra Boini , Chong Shi, Weilin Li, Ahmed Abdelfatt, Brunella Morandi, Manuela Zude-Sasse	Chitosan-based hydrophobic bio-coatings: pre-harvest treatment improves storage quality of 'Gala' apple under sun exposure
13.00-14.00	Lunch			
Session IV- Remote sensing & CVS - Chair: Konni Biegert & Mihai Gabriel Matache				
14.00-14.15	O	36	Mirko Piani, Gianmarco Bortolotti , Luigi Manfrini, Dario Mengoli	Exploiting entropy and camera distance normalization for fruit sizing by means of consumer grade depth cameras
14.15-14.30	O	37	Cameron Cullinan , Massimo Tagliavini, Alice Scomparin, Katrin Janik	Diagnosis of 'Ca. Phytoplasma mali' infection, and nutrient deficiencies in Malus domestica trees via in-vivo spectroscopy
14.30-14.45	O	38	Pedro Marques, Luís Pádua, Anabela A. Fernandes-Silva	Use of satellite images to estimate olive production
14.45-15.00	O	39	Francesco Abbatantuono , Anas Tallou, Jalila Ikken, Vincenzo Cianciola, Sara Álvarez, Salvatore Camposeo, Gaetano Alessandro Vivaldi	Remote sensing in precision fruit farming: Estimation of spectral response in olives irrigated with saline reclaimed water
15.00-15.15	O	40	Andrzej Kurenda , Ard Jan Grimbergen, Julien Roulet, Floris Haerema, Carl Rentes	Remote sensing of the plant responses to biostimulants with electrophysiology
15.15-15.30	O	41	Maria Paula Simoes , Abel Veloso, Eduardo Assunção, Emanuel Moreira, Cristina Canavarro, Pedro D. Gaspar	Peach tree canopy assessment through aerial image detection for improved management and sustainability
Poster session I - Chairs: Gianmarco Bortolotti & Dario Mengoli				
15.15-15.25	P	42	Elias Holzknicht , Walter Guerra, Martin Thalheimer	First results of a digital outdoor laboratory through integration of various systems for measuring soil moisture and plant water status in fruit growing
15.25-15.35	P	43	Utpal Das , Ritika Ms. Benny, Petrescu Amelia	Alternate production technologies for sustainable production of horticultural crops
15.35-15.45	P	44	Cameron Cullinan , Alice Scomparin, Katrin Janik, Massimo Tagliavini	Predicting foliar N and P concentrations in apple using UV-VIS-NIR spectroscopy - moving beyond the proof of concept
15.45-15.55	P	45	Roberta Ascolese , Fortuna Miele, Feliciano Pica, Giuliano Langella, Francesco Nugnes,	Intelligent pest control: AI-driven solutions for sustainable agroecosystems through remote surveillance and descriptive modeling
16.00-16.30	Coffee Break			
Poster session II - Chairs: Alexandra Boni & Daniela Sangiorgio				
16.30-16.40	P	46	Augustina Pruteanu, Mihai Gabriel Matache , Dorin Andrei Carstea, Robert Dorin Cristea	A review of current technologies for detecting and deterring harmful birds in horticultural crops
16.40-16.50	P	47	Iuliana Gageanu , Gabriel Gheorghe, Ana-Maria Tabarasu, Mihaela Nitu, Catalin Persu	Automation and robots in vertical farming
16.50-17.00	P	48	Darren Drewry , Srishti Gaur	Explainable Machine Learning to Advance Eco-Physiological Prediction
17.00-17.10	P	49	Michele Gullino , Albert Heinrich Lanthaler, Antonio Altana, Sahira Vasquez, Pietro Ibba, Paolo Lugli, Giuseppe Cantarella, Luigi Manfrini, Luisa Petti	Stretching the limits: monitoring apple fruit growth with an ultra-stretchable strain sensor
17.10-17.20	P	50	Mihai Gabriel Matache , Iuliana Gageanu, Carmen Bracacescu, Oana Diana Cristea, Cristea Robert	Robotic harvesting methods for vegetables from the Solanaceae family in greenhouses and solariums using specialized grippers - review

1730-1745	YMA Ceremony
1745-18.00	Closing Ceremony