



Virtual 9 – 11 March 2021



**Advancing together:
Enhancing quality of life
through HortScience**

4th International Symposium on Horticulture in Europe

5th International Humulus Symposium

8th International Symposium on Human Health
Effects of Fruits and Vegetables

Annual Convention of the German Society
for Horticultural Science



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Program Overview

9 March 2021

Time	Plenary & SHE area 1	Plenary & SHE area 2	Plenary & SHE area 3	Plenary & SHE area 4
08:00 – 10:05	Welcoming address & Opening Plenary Address Plenary Session			
10:30 – 12:10	Genetic resources and plant biotechnology SHE	Rooting and plant growth control SHE	Nitrogen effects on plant growth SHE	Vegetable and mushroom cultivation systems SHE
13:30 – 14:00				
14:00 – 15:30	Climate change and loss of biodiversity Plenary Session			
15:50 – 17:30	Resistance breeding SHE	Rootstock and abiotic effects on plant growth SHE	Crop fertilisation SHE	Evaluation of fruit cultivars and production systems SHE
17:30 – 18:00				

- Plenary Session
- Lane 1: Plant breeding, propagation, crop x environment interactions
- Lane 2: Rooting and plant growth, precision horticulture, product quality
- Lane 3: Plant nutrition, growing systems, plant protection
- Lane 4: Crop production, postharvest quality, human responses and economics



Program Overview

9 March 2021



DGG area	IHS area	FAV Health area	E-Poster	Time
				08:00 – 10:05
DGG Session DGG	Hop genomics and breeding IHS	Health benefits and biodiversity of fruits and vegetables FAVHealth		10:10 – 12:10
			Poster Session 1	13:30 – 14:00
				14:00 – 15:30
	Breeding, selection and evaluation of hop varieties IHS	Bioactive compounds affected by crop management FAVHealth		15:50 – 17:30
			Poster Session 2	17:30 – 18:00

- DGG
- IHS
- FAVHealth
- Poster





Program Overview

10 March 2021

Time	Plenary & SHE area 1	Plenary & SHE area 2	Plenary & SHE area 3	Plenary & SHE area 4
08:30 – 10:00	Plant- Environment interactions Plenary Session			
10:30 – 12:10	Pollinators and propagation SHE	Precision horticulture SHE	Growing substrate and alternatives to peat SHE	Storage and fruit ripening SHE
13:30 – 14:00				
14:00 – 15:30	New technologies in the lab and field Plenary Session			
15:50 – 17:30	Temperature effects on crop phenology SHE	Light/LED effects on plant performance SHE	Soil microorganisms in plant production systems SHE	Fruit responses to storage conditions SHE
17:30 – 18:00				

- Plenary Session
- Lane 1: Plant breeding, propagation, crop x environment interactions
- Lane 2: Plant propagation, growth control, precision horticulture
- Lane 3: Plant protection, nutrition, growing substrates, biostimulants
- Lane 4: Crop production, storage, quality, economics



Program Overview

10 March 2021



IHS area	FAV Health area	E-Poster	Time
			08:30 – 10:00
Combating fungal diseases and viroids IHS	Health effects and analysis of secondary metabolites vegetables FAVHealth		10:30 – 12:10
		Poster Session 3	13:30 – 14:00
			14:00 – 15:30
Modern tools for targeted control of plant traits IHS	Biofortification and chemodiversity FAVHealth		15:50 – 17:30
		Poster Session 4	17:30 – 18:00

- IHS
- FAVHealth
- Poster





Program Overview

11 March 2021

Time	Plenary & SHE area 1	Plenary & SHE area 2	Plenary & SHE area 3	Plenary & SHE area 4
08:30 - 10:00	New opportunities Plenary Session			
10:30 - 12:10	Plant responses to abiotic stress SHE	Crop load and detection of fruit quality SHE	Biostimulants and hydroponic systems SHE	Human responses to horticulture SHE
13:30 - 14:00				
14:00 - 15:30	Conclusion, final remarks Plenary Session			
15:50 - 17:30	Plant developmental processes SHE	Product quality SHE	Plant protection SHE	Horticultural policies and economics SHE
17:30 - 18:00				

- Plenary Session
- Lane 1: Plant breeding, propagation, crop x environment interactions
- Lane 2: Plant propagation, growth control, precision horticulture
- Lane 3: Plant protection, nutrition, growing substrates, biostimulants
- Lane 4: Crop production, storage, quality, economics



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IHS area	FAV Health area	E-Poster	Time
			08:30 - 10:05
Organic hop production IHS	Specific bioactive compounds against human diseases FAVHealth		10:10 - 12:10
		Poster Session 5	13:30 - 14:00
			14:00 - 15:30
Hop management and industrial hemp IHS	Food security and healthy nutrition FAVHealth		15:50 - 17:30
		Poster Session 6	17:30 - 18:00

- IHS
- FAVHealth
- Poster





Plenary 9 - 11 March 2021

Time	Author	Title	Key
9 March 21			
08:00-08:10	Jens Wünsche	Welcoming address; University of Hohenheim	W1
08:10-08:20	Julia Klöckner	Welcoming address, BMEL, Patronage	W2
08:20-08:30	Friedlinde Gurr-Hirsch	Welcoming address, MLR	W3
08:30-08:40	Eva Kähler-Theuerkauf	Welcoming address, ZVG	W4
08:40-08:50	Yüksel Tüzel	Welcoming address, ISHS	W5
08:50-09:00	Yüksel Tüzel	Award Ceremony	W6
09:00-09:20	ISHS	Obituary	W7
09:20-10:05	Kai Niebert	Science and politics in times of global change?	K1
Climate change and loss of biodiversity			
14:00-14:45	Stefan Schmitz	Food forever: Securing plant genetic resources and healthy diets for all in times of climate change	K2
14:45-15:30	Anke Kwast	How to decarbonize the food chain	K3
10 March 21			
Plant-Environment interactions			
08:30-09:15	Bruce Bugbee	Turning photons into food: On Earth and on Mars	K4
09:15-10:00	Georg Petschenka	The insect decline and insect-plant interactions: Perspectives for horticulture	K5
New technologies in the lab and field			
14:00-14:45	Holger Puchta	The CRISPR/Cas revolution in plant breeding - a game changer for horticulture?	K6
14:45-15:30	Uli Schurr	Plant phenotyping across borders: Overcoming technological and structural bottlenecks	K7
New opportunities			
08:30-09:15	Avi Kahani	Fresh Fruit Robotics. The 21 st Century Solution for Fresh Fruits	K8
09:15-10:00	Johan Jacobs	Insect bioconversion and horticulture: Repairing the future together!	K9
11 March 21			
Conclusion, final remarks			
14:00-14:45	Lukas Bertschinger	HortResearch4Future - How can we respond to societal demand?	K10
14:45-15:30		Closing remarks	



Program – SHE

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Time	Author	Title	Key
9 March 21			
Genetic resources and plant biotechnology – Lane 1			
10:30-10:50	Claudia Wiedow, Jayanthi Nadarajan	Conservation strategies for New Zealand's horticulture crops: hop (<i>Humulus lupulus</i>), apple (<i>Malus</i> spp.) and kiwifruit (<i>Actinidia</i> spp.)	O-01
10:50-11:10	Susan Schröpfer, Luisa Baader, Henryk Flachowsky	Pre-selection of efficient Cas9 and Cpf1 guides for genome editing in apple	O-02
11:10-11:30	Sylvia Plaschil, Henning Wagner, Holger Budahn	Hybridisation of <i>Tarenaya</i>	O-03
11:30-11:50	Saba Haider, Yike Gao	Breeding of RNAi-induced transgenic <i>Chrysanthemum</i> plants for phenotypic characterization in F1 hybrids	O-04
11:50-12:10	Dmitry Romanov, Sergey Shirnin, Mikhail Divashuk	Cytogenetic study of <i>Aegopodium podagraria</i> (<i>Umbelliferae</i>)	O-05
Resistance breeding – Lane 1			
15:50-16:10	Stefanie Reim, Alessandro Cestaro, Traud Winkelmann, Henryk Flachowsky	Elucidating the genetic mechanisms underlying tolerance to apple replant disease	O-06
16:10-16:30	Gunars Lacis, Irita Kota-Dombrovska, Baiba Lace	Assessment of pear (<i>Pyrus communis</i> L.) genetic diversity with regard to resistance to pear scab (<i>Venturia pyrina</i> Aderh.)	O-07
16:30-16:50	Andreas Peil, Ofere Francis Emeriewen, Henryk Flachowsky	Fire blight resistance breeding	O-08
16:50-17:10	Dina Shokaeva	Effects of strawberry parent genotypes winter hardiness on yield and fruit size inheritance	O-09
17:10-17:30	Thomas Wöhner	Screening and detection of <i>Malus</i> germplasm resistant to apple blotch disease (<i>Diplocarpon coronariae</i>)	O-10





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Time	Author	Title	Key
9 March 21			
Rooting and plant growth control – Lane 2			
10:30-10:50	David Wamhoff, Thi Hong Nhung Nguyen, Dietmar Schulz, Jasmin Rudeck, Ljudmilla Borisjuk, Thomas Debener, Traud Winkelmann	Molecular analysis and visualization of adventitious rooting in rose	O-31
10:50-11:10	Yi Tan, Bruno Trevenzol Favero, Henrik Lütken, Renate Müller	Agrobacterium tumefaciens - mediated transgenic lines with individual ORFs from Rhizobium rhizog- enes show compact growth and less rooting	O-32
11:10-11:30	Marc-André Sparke, Ute Ruttensperger, Jens-Norbert Wünsche	Thigmomorphogenesis: Plant growth regulation and quality improvement under greenhouse conditions	O-33
11:30-11:50	Michael Zoth	Mechanical pruning - Progress in technization	O-34
11:50-12:10	Hyeon-soo Kim, Woo Il, Eun Ho Jeong, Yong Mo Chung, Seok Woo Kim, Mok Jong Kim	Shoot growth inhibition and fruit characteristic in high density 'Hongro/Mg' apple (<i>Malus domestica</i> Borkh.) orchards by different application times of prohexadione-calcium	O-35
Rootstock and abiotic effects on plant growth – Lane 2			
15:50-16:10	Nikola Saraginovski, Marjan Kiprijanovski	'Kordia' and 'Regina' sweet cherry: Bearing potential and fruiting shoots distribution as affected by root- stock genotype	O-36
16:10-16:30	Clemens Beyer, Italo Cuneo, Juan-Eugenio Alvaro, Romina Pedreschi	Confronting the differential physiology of avocado Hass grafted onto two different rootstocks in a con- trolled environment	O-37
16:30-16:50	Dimitrios Savvas, Vasiliki Vougeleka, Georgja Ntatsi, Georgios Ellinas, Alexandros Zacharis, Photini Mylona, Pietro P.M Iannetta, Costas Saitanis	Impact of different rootstocks on growth, yield and biological nitrogen fixation of four Greek landraces of <i>Phaseolus vulgaris</i>	O-38
16:50-17:10	Elisa Driesen, Arthur Lauwers, Wouter Saeys, Maurice De Proft	Effect of substrate temperature on plant growth and transpiration rates determined by means of soil moisture sensors	O-39
17:10-17:30	Phetole Mangena	Effect of moderate and severe water stress on mor- pho-physiological responses of soybeans treated with different concentrations of colchicine	O-40

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Time	Author	Title	Key
9 March 21			
Nitrogen effects on plant growth – Lane 3			
10:30-10:50	Mareike Mauerer, Thorsten Rocksch, Uwe Schmidt	Effects on growth and development of tomato (<i>Solanum lycopersicum</i> L.) grown in a recirculating hydroponic system with nitrified urine	O-61
10:50-11:10	Alexander Frieman, Carsten Vorsatz, Diemo Daum	Effects of nitrogen supply, plant spacing and cultivar on hollow stem development in broccoli	O-62
11:10-11:30	Christian Frerichs, Diemo Daum	Field-grown spinach production - fertilization strategies to reduce risk of nitrate leaching	O-63
11:30-11:50	Annette Bucher, Dieter Lohr, Elke Meinken	Effect of non-charged and NH ₄ -charged chabazite on growth and nitrogen uptake of <i>Photinia fraseri</i> 'Red Robin'	O-64
11:50-12:10	Dimitrios Savvas, Anastasios Gatsios, Georgia Ntatsi, Luisella Celi, Daniel Said-Pullicino, Anastasia Tampakaki	Comparative assessment of different nitrogen fertilization alternatives in organic greenhouse tomato crop	O-65
Crop fertilisation – Lane 3			
15:50-16:10	Anna J. Keutgen, Norbert Keutgen, Jaroslaw Poberezny, Elzbieta Wszelaczynska	Yield and quality development of different carrot <i>Daucus carota</i> L. cultivars by application of Mg-fertilizer and soil fertility enhancer UGmax	O-66
16:10-16:30	Andrei Kuzin, Ludmila Grigorjeva, Anna Kochkina	Influence of different agrochemicals on calcium content in apple fruits	O-67
16:30-16:50	Abdullah Al Hosni, Daryl Joyce, Melinda Perkins, Rashid Al-Yahyai, Mal Hunter	Calcium ameliorative role on adverse effects of salinity in reclaimed wastewater in apricot: Horticultural characteristics, fruit quality and nutrients uptake	O-68
16:50-17:10	Youssef Najib Sassine, Rami Bejjani, Edward Tabet, Abdel-Mawgoud Ragab Abdel-Mawgoud, Milena Yordanova	Effect of drought and monopotassium phosphate on some physiological attributes and macronutrient translocation in potato crop	O-69
17:10-17:30	Karoline D'Haene, Georges Hofman	The trade-off between the reduction of phosphorus losses and the maintenance of soil quality in legislation	O-70





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Time	Author	Title	Key
9 March 21			
Vegetable and mushroom cultivation systems – Lane 4			
10:30-10:50	Toky Ramananjatovo, Gerhard Buck-Sorlin, Etienne Chantoiseau, Patrice Cannavo, Pascale Guillermin, Rene Guenon, Mickael Delaire	Microclimatic conditions affect lettuce growth in apple tree - lettuce intercropping	O-91
11:10-11:30	Anna J. Keutgen, Norbert Keutgen	Influence of intercropping system with herbs on yield and quality of tomato (<i>Lycopersicon esculentum</i> L.)	O-92
11:10-11:30	F. Javier López-Moreno, Juan Manuel Ruiz, Begoña Blasco, Miguel De Cara, Eloy Navarro-León, Teresa Soriano	Factors involved in asparagus decline and effects of control techniques on survival, growth and production	O-93
11:30-11:50	Elena Barcanu, Costel Vinatoru, Ovidia Agapie, Ion Gherase, Bianca Tanase, Geanina Negosanu	Influence of organic and chemical fertilization on new sweet peppers (<i>Capsicum annuum</i> L.) cultivars	O-94
11:50-12:10	Youssef Najib Sassine, Sami Elie Abou Fayssal, Mohammed Ahmed Alsanad, Milena Yordanova, Zeina El Sebaaly, Rita Najjar	Effect of olive pruning wastes on mycelial growth and biological efficiency of oyster (<i>Pleurotus ostreatus</i>) mushroom	O-95
Evaluation of fruit cultivars and production systems – Lane 4			
15:50-16:10	David Doll, Joao Freire de Andrade	Almond production in Portugal: Planting trends and production challenges within a developing industry	O-96
16:10-16:30	Anabela Fernandes-Silva, Luis Canas, Thyago Brito, Pedro Marques	Regulated and sustained deficit irrigation impacts on yield components of olive trees	O-97
16:30-16:50	Kujtim Lepaja, Lavdim Lepaja, Endrit Kullaj	Fruit quality parameters of five primocane raspberry cultivars in Kosovo	O-98
16:50-17:10	Patrick Hess, Michael Blanke	Possibilities of reduction or substitution of plastic usage in orchards for fruit colouration	O-99
17:10-17:30	Mekjell Meland, O. Frøyenes, Darius Kviklyš	Performance of Summerland sweet cherry cultivars in Norway	O-100



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Time	Author	Title	Key
10 March 21			
Pollinators and propagation – Lane 1			
10:30-10:50	Francisco Pérez-Alfocea, Alfonso Albacete, Cristina Martínez-Andújar	Pollinator-assisted plant phenotyping under environmental selection pressure	O-11
10:50-11:10	Vera Joedecke, Ute Ruttensperger, Helga Stier	Evaluation of pollinator friendliness of an ornamental aromatic planting concept	O-12
11:10-11:30	John Opata, Beloved Dzomeku, Suputra Hegele, Paul-Friedemann Melichar, Jens-Norbert Wünsche	Macropropagation of plantain (Musa AAB): Responses to hormonal and mechanical corm manipulation	O-13
11:30-11:50	Diyana Aleksandrova, Nataliya Dimitrova	Reaction of pear cultivars grafted on pear and quince rootstocks after artificial inoculation of <i>Erwinia amylovora</i>	O-14
11:50-12:10	Mina Shidfar, Sheebnem Ellialti, Hayati Bat, Nuray Cömlekçioğlu	In vitro androgenesis in pepper and the affecting factors on success: Carbon source and concentrations	O-15

Temperature effects on crop phenology – Lane 1			
15:50-16:10	Erica Fadón, Eduardo Fernandez, Hoa Thi Do, Achim Kunz, Priska Krefting, Eike Luedeling	Chill and heat accumulation modulates phenology in temperate fruit trees	O-16
16:10-16:30	Katja Schiffers, Carsten Urbach, Erica Fadón, Eduardo Fernandez, Cory Whitney, Eike Luedeling	An open-source modelling framework for fruit and nut tree phenology	O-17
16:30-16:50	Katja Schiffers, Cory Whitney, Eduardo Fernandez, Italo F. Cuneo, Eike Luedeling	Forecasting yield in temperate fruit trees from winter chill accumulation	O-18
16:50-17:10	Anton Milyaev, Henryk Flachowsky, Jens-Norbert Wünsche	Estimation of endo-dormancy release of apple under bud break forcing conditions	O-19
17:10-17:30	Janne Lempe, Andreas Peil, Henryk Flachowsky	Fine-tuning flowering time and dormancy in apple cultivars for better adaptation to climate change	O-20





Program – SHE

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Time	Author	Title	Key
10 March 21			
Precision horticulture – Lane 2			
10:30-10:50	Panagiotis Kalaitzis, Danil Stupichev, Anastasia Apodiakou, Mohamad Ali El Chami, Maria Kosma, Dusan Denic, George Kostelenos, Luciana Baldoni, Marina Bufacchi, Konstantinos N. Blazakis	OliveID: A computational tool for olive cultivar identification through morphological analysis and machine learning algorithms	O-41
10:50-11:10	Mark Mueller-Linow, Dirk Jollet, Uwe Rascher, Fabio Fiorani	Shape and color - a new project to assess yield quality parameters in horticultural crops via non-invasive imaging approaches	O-42
11:10-11:30	Nikos Tsoulis, Spyros Fountas, Manuela Zude-Sasse	Estimating the canopy volume using a 2D LiDAR in apple trees	O-43
11:30-11:50	Daniel Tran, Fabien Dutoit, Elena Najdenovska, Laura Raileanu, Nigel Wallbridge, Carrol Plummer, Cédric Camps	Plant electrocardiogram: Machine learning for smart and sustainable irrigation	O-44
11:50-12:10	Kowshik Kumar Saha, Nikos Tsoulis, Manuela Zude-Sasse	Estimation of leaf area distribution in a commercial cherry orchard using ground based 2D mobile LiDAR system	O-45
Light/LED effects on plant performance – Lane 2			
15:50-16:10	Oliver Dörr, Heiko Mibus	Influence of different light treatments on physiological performance of <i>Plectranthus scutellarioides</i> (L.)	O-46
16:10-16:30	Thorsten Kraska, Marcel Dieter Moll, Alena Sophia Vieregge, Almuth Hinke, Silke Hillebrand, Jakob Ley, Ralf Pude	Phenotyping of tea-hortensia cultivars under different light conditions	O-47
16:30-16:50	Inse Rosenbusch, Shizue Matsubara, Andreas Ulbrich, Thomas Rath	Influence of light stimuli on the habit of basil under daylight conditions	O-48
16:50-17:10	Christoph Carlen, Céline Gilli, Cédric Camps	Effects of LED inter-lighting in tomato crops	O-49
17:10-17:30	Ep Heuvelink, Chen Sijia, Ji Yongran, Sharath Kumar Malleshaiah, Leo F.M. Marcelis	Role of far-red radiation in flower induction, fruit set and assimilate partitioning to fruits	O-50



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Time	Author	Title	Key
10 March 21			
Growing substrate and alternatives to peat – Lane 3			
10:30-10:50	Anja Kretzschmann, Walter Dirksmeyer	Quantification of the amount of peat and substrate used in tree nurseries in Germany	O-71
10:50-11:10	Ute Katharina Vogler, Andrew Gallik, Jacques Fuchs, Christoph Carlen	Towards a peat-free horticulture in Europe	O-72
11:10-11:30	Van T.H. Nguyen, Georg Völkerling, Karl-Josef Wiesel, Ralf Pude, Thorsten Kraska	Miscanthus as growing substrate in horticultural production	O-74
11:30-11:50	Aikaterini Martini, Maria Papafotiou, Ioannis Massas, Nikoleta Chorianopoulou, Ivana Zivanovic	Effect of substrate type and cultivation site in the urban fabric on growth and safety to consume the edible medicinal species <i>Origanum dictamnus</i>	O-73
11:50-12:10	Lamprini Tasoula, Maria Papafotiou, George Liakopoulos, George Kargas	Cultivation of the herb <i>Origanum dictamnus</i> on an urban extensive green roof under different substrate types and irrigation frequencies	O-75

Soil microorganisms in plant production systems – Lane 3			
15:50-16:10	K. Burow, J. Brandes, P. Franken	Prerequisites and approaches for integrating root-endophytic fungi in plant production systems	O-76
16:10-16:30	Nathan Nordstedt, Michelle Jones	Native rhizosphere bacteria improve health and quality of greenhouse ornamentals	O-77
16:30-16:50	Andrei Kuzin, Mikhail Aki-mov, Grigory Pugachev, Ludmila Stepansova	Evaluating the efficacy of bacterial phosphorus fertilizers in an apple orchard on chernozem soil	O-78
16:50-17:10	Maria Papafotiou, Christodoulos Kokotsakis, Athanassia Kavadia, Constantinos Ehaliotis	The effect of arbuscular mycorrhizal fungi (AMF) and substrate type on growth and flowering of <i>Gardenia jasminoides</i>	O-79
17:10-17:30	Nadine Sommer, Jens-Norbert Wünsche	Phytoextraction of mercury-contaminated soils using legumes	O-80





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Time	Author	Title	Key
10 March 21			
Storage and fruit ripening – Lane 4			
10:30-10:50	Daniel Alexandre Neuwald, Fabio Rodrigo Thewes, Felix Büchele, Auri Brackmann, Jens Wünsche	Influence of dynamic controlled atmosphere on the 'Elstar' and 'Nicoter' apples in dynamics of sugar, anaerobic metabolism enzymes and metabolites	O-101
10:50-11:10	Adriana Guerreiro, Dulce Antunes, Rui Guerra, Custódia Gago, Fernão Veloso, Luisa Freitas	Storage temperature effect on kiwiberry (<i>Actinidia arguta</i> cv. Ken's Red) shelf-life	O-102
11:10-11:30	Shahidah Md Nor, Phebe Ding	Effects of temperature and storage duration on keeping quality of Malaysian grown passion fruit (<i>Passiflora edulis</i> Sims f. <i>Flavicarpa</i> Deg.)	O-103
11:30-11:50	Romina Pedreschi, Ignacia Hernández, Virgilio Uarrota, Claudia Fuentealba, Bruno Defilippi, Reinaldo Campos, Claudio Meneses, Maarten Hertog	Modeling the softening behavior of Chilean Hass avocado to commercially segregate different batches destined for local and distant markets	O-104
11:50-12:10	Pia Heltoft	Reducing sugar content and acrylamide formation in potato (<i>Solanum tuberosum</i>) varieties for processing after storage with high CO ₂ levels	O-105
Fruit responses to storage conditions – Lane 4			
15:50-16:10	Sanja Baric, Alberto Storti, Tamás Drexler, Greice Amaral Carneiro	Taxonomic diversity of fungal postharvest pathogens of apple in South Tyrol	O-106
16:10-16:30	Margarita Hadjipieri, Eglí Georgiadou, Vasilis Fotopoulos, George Manganaris	Dissection of the incidence and severity of purple spot physiological disorder in loquat fruit	O-107
16:30-16:50	Ulrike Praeger, Manfred Linke, Daniel A. Neuwald, Martin Geyer	Water condensation on fruit surfaces during apple storage	O-108
16:50-17:10	Guido Rux, Kimberly Bohne, Christian Ulrichs, Susanne Huyskens-Keil, Karin Hassenberg, Werner B. Herppich	Effects of the O ₂ -availability on aroma relevant VOC emissions of 'Braeburn' apples slices	O-109
17:10-17:30	Custodia Gago, Adriana Guerreiro, M Leonor Faleiro, M Graça Miguel, M Dulce Antunes	Stored 'Galia' melon quality affected by edible nano-coatings enriched with essential oils	O-110

Program – SHE

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Time	Author	Title	Key
11 March 21			
Plant responses to abiotic stress – Lane 1			
10:30-10:50	Panagiotis Kalaitzis, Aristotelis Azariadis, Ilige Salameh, Mohamed Kouhen, Khansa Mekkaoui, Konstantinos N. Blazakis, Myrto Rizou, Mai Mohammed, Faten Dandachi, George Kostelenos	Characterization of olive prolyl 4 hydroxylases and arabinogalactan proteins (AGPs) under salinity stress conditions	O-21
10:50-11:10	Jacqueline Keyhani, Ezzatollah Keyhani	Crocus sativus L. response to flooding: Enzymatic activities in flooded corms and post-flooding survival	O-22
11:10-11:30	Yüksel Tüzel, Gölgen Bahar Öztekin, Tansel Kaygısiz Ascioğul, Mustafa Cenk Sirkeci, Tunç Durdu	Response of local tomato genotypes to drought stress	O-23
11:30-11:50	Pedro Marques, Luis Canas, Anabela Fernandes-Silva	Leaf reflectance response to deficit irrigation in olive trees	O-24
11:50-12:10	Katharina Wellpott, Anna-Maria Jozefowicz, Hans-Peter Mock, Philipp Meise, Annegret Schum, Traud Winkelmann, Christin Bündig	Identification of candidate proteins in drought stress tolerant and sensitive starch potato genotypes (<i>Solanum tuberosum</i> L.) for biomarker development	O-25
Plant developmental processes – Lane 1			
15:50-16:10	Panagiotis Kalaitzis, Dusan Denic, Dimitris Kaloudas, Myrto Rizou, Andreas Perrakis, Afroditi Krokida, Maria Kosma, Khansa Mekkaoui, Elena Bita Craita, Zeina El Zein, Aline Monzer, Mohamed Kouhen, Konstantinos Blazakis	Silencing and over-expression of prolyl 4 hydroxylase 3 alters the tomato abscission program	O-26
16:10-16:30	Ahmed Ben Abdelkader, Massimo Tagliavini, Marta Petrillo, Agnese Aguzzoni, Damiano Zanotelli	Effects of hail nets on the evapotranspiration in an apple orchard	O-27
16:30-16:50	Kristina Laužikė, Giedre Samuoliene, Nobertas Uselis	The impact of competitive stress on photosynthetic indices in apple tree leaves	O-28





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Time	Author	Title	Key
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16:50-17:10	Thiwaporn Phadung, Panumas Kotepong	Carbohydrate and nitrogen content of pummelo in relation to flower induction	O-29
17:10-17:30	Julian Kofler, Anton Milyaev, Berit Würtz, Jens Pfannstiel, Henryk Flachowsky, Jens-Norbert Wünsche	The proteome of floral and vegetative apple buds	O-30

Crop load and detection of fruit quality – Lane 2

10:30-10:50	Konni Biegert, Roy McCormick, Peter Braun	Influence of precipitation on VIS/NIR spectra of 'Gala' apples	O-51
10:50-11:10	Zhuo Yang, Laszlo Baranyai, Andrew East, Mo Li, Manuela Zude	Measurement effects of kiwifruit optical properties with laser backscattering image system	O-52
11:10-11:30	Michael Blanke, Maike Schuesseler, Lutz Damerow	Non-invasive russet detection on apple and pear fruit	O-53
11:30-11:50	Martin Penzel, Nikos Tsoulfas, Manuela Zude-Sasse	Estimating the fruit bearing capacity of individual trees in a 'Gala' orchard	O-54
11:50-12:10	Anka Cebulj, Joze Hladnik, Matej Stopar	Polysorbates as apple thinning agents	O-55

Product quality – Lane 2

15:50-16:10	Anne-Katrin Kersten, Martina Bandte, Sabrina Scharf, Peter Lentzsch, Carmen Büttner	Infection process of plant viruses on Cucumis sativus and their influence on fruit texture	O-56
16:10-16:30	Persefoni Maletsika, Katerina Grigoriadou, Elefterios Melitzanas, Triantafyllia Georgoudaki, George Nanos	Foliar calcium applications and maturity on clones of 'Lemonato' peach fruit quality and bruising severity	O-57
16:30-16:50	Moumita Malakar, Stefka Atanassova, Neli Grozeva, Mariya Gerdzhikova	Comparative Study of Intact and Husked Seeds of Sunflower (<i>Helianthus annuus</i> L.) Summoned from India and Bulgaria for the Estimation of Qualitative Factors Using Near-Infrared Reflectance Spectroscopy	O-58
16:50-17:10	Sebastian Gierling, Michael Blanke	Better carbon footprint from grapevine cultivation on steep slopes compared with flat terrain - a case study?	O-59
17:10-17:30	Fang He, Björn Thiele, Sharin Santhiraraja, Michelle Watt, Thorsten Kraska, Andreas Ulbrich, Arnd Jürgen Kuhn	Managing root temperature to improve food quality of horticultural crops	O-60

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Biostimulants and hydroponic systems – Lane 3			
10:30-10:50	Lilian Schmidt, Frederik Langner, Otmar Löhnertz	Is it possible to increase the mineral content of culinary herbs by supplying the drainage of hydroponically-grown cucumber plants?	O-81
10:50-11:10	Sergey Kornatskiy, Vadim Plyushchikov	Hydroponic system for growing strawberry plantlets in a greenhouse	O-82
11:10-11:30	Diyana Aleksandrova, Nataliya Dimitrova, Viktorija Nikolova, Lilyana Nacheva	Floating system improves acclimatization of micropropagated pear plantlets	O-83
11:30-11:50	Daniel Leskovar, Kuan Qin	Humic substances improve soil health, crop yield and transplant quality under stress conditions	O-84
11:50-12:10	Reelika Rätsep, Liina Arus, Hedi Kaldmäe, Kersti Kahu	Effect of foliar applications of biostimulants on leaf chlorophyll and fruit quality in organic black currant	O-85

Plant protection – Lane 3			
15:50-16:10	Vera Breiing, Michael Petry, Ralf Pude, Thorsten Kraska	Self-drying plant oils in plant protection	O-86
16:10-16:30	Carlo Risi	IPM based pest control case study Movento	O-87
16:30-16:50	Johannes Werth, Michael Beck, Ute Wilhelm, Dominikus Kitemann	Influence of different measures for weed control on the soil climate and crop yield in apple orchards	O-88
16:50-17:10	Franziska Reinhard, Dominikus Kitemann	Possibilities for reducing pesticides by single-row covering in apple orchards	O-89
17:10-17:30	Thiwaporn Phadung, Panumas Kotepong	Effect of calcium applications on fruit quality and post-harvest anthracnose disease of Java apple	O-90





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Human responses to horticulture – Lane 4			
10:30-10:50	Ahmad Hassan	Physiological and psychological effects of gardening activity in older adults	O-111
10:50-11:10	Cora Huhn	Plant knowledge in training - a thorn in their eye?	O-112
11:10-11:30	Mira Lehberger	Understanding the willingness to pay for horticultural products produced with beneficial insects - do the Big Five matter?	O-113
11:30-11:50	Sebastian Unger, Thomas Ostermann, Sebastian Appelbaum, Christina Niedermann	Tracking Human Spatial Motion in the Design of Gardens as a Potential Method to detect Mental Disorders - A Pilot Study	O-114
11:50-12:10	Dirtje Marie Derksen, Dagmar Mithöfer	Identifying stakeholders' opinions on sustainability implementation in floriculture with q methodology: The critical construction of the q sample	O-115

Horticultural policies and economics – Lane 4			
15:50-16:10	Esther Bravin, Diana Zwahlen	Economic evaluation of low-residue fruit production systems	O-116
16:10-16:30	Sarah Françoise Meyer, Sabine Ludwig-Ohm, Hanna Wildenhues, Hildegard Garming	Feasibility and economic analysis of improved nitrogen fertilization measures	O-117
16:30-16:50	Karoline D'Haene, Georges Hofman	Does legislation mitigate the impact of soil phosphorus on water quality?	O-118
16:50-17:10	Sabine Ludwig-Ohm, Walter Dirksmeyer	HortiCo 4.0: The networking and transfer project for horticulture 4.0 innovation funding in Germany	O-119
17:10-17:30	Walter Dirksmeyer	Evaluation of the European support scheme for fruit and vegetable producer organizations in Germany	O-120



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Genetic resources and plant biotechnology (SHE)			
13:30-14:00	Sanja Baric, Alberto Storti, Melanie Hofer, Walter Guerra, Josef Dalla Via	A database for molecular genetic identification of apple cultivars	P-01
13:30-14:00	Anwasha Das, Stefanie Reim, Monika Höfer, Henryk Flachowsky	Towards genome-wide association mapping in apple (<i>Malus × domestica</i>)	P-02
13:30-14:00	Dragan Nikolic, Dragan Milatovic, Aleksandar Radovic, Jugoslav Trajkovic	Variability and heritability of leaf and flower properties in 'Oblačinska' sour cherry clones	P-03
13:30-14:00	Juvenal Assou, Dingbo Zhang	Establishment of regeneration and transformation protocols to create hypoallergenic peanut and mustard through genome editing	P-04
13:30-14:00	Elena Barcanu, Ovidia Agapie, Ion Gherase, Bianca Tanase, Geanina Negosanu, Costel Vinatoru, M. Draghici	Phenotypic diversity in a sweet pepper germplasm collection	P-05
Rooting and plant growth control (SHE)			
13:30-14:00	Ute Ruttensperger, Marc-André Sparke, Jens-Norbert Wünsche	Thigmomorphogenesis: Use of mechanical stress for height control in (organic) plant production	P-07
13:30-14:00	Konstantinos Bertsouklis, Aekaterini Martini, Georgia Vlachou, Eleftherios Dariootis, Maria Papafotiou	A first approach on morphometrics studies of <i>Salvia fruticosa</i> found in Greece	P-08
Nitrogen effects on plant growth (SHE)			
13:30-14:00	Judit Pfenning, Pauline Seyler, Bastian Saumweber, Katharina Müller, Rödel Louis, Jens Hartung	Influence of organic nitrogen fertilizer on growth and quality of potted herbs	P-09
13:30-14:00	William Viera, Yamil Cartagena, Pablo Gaona, Lorena Medina, Jhony Toaquiza	Response of Hass variety avocado crop to two levels of nitrogen and potassium in the growth stage	P-10
13:30-14:00	Christian Frerichs, Andreas Pacholski, Diemo Daum	Determination of ammonia exposure of potted herbs in organic cultivation	P-11
13:30-14:00	Annette Bucher, Dieter Lohr, Elke Meinken	Reduction of nitrogen leaching from nursery potting mixes by chabazite	P-12



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Vegetable cultivation systems (SHE)			
13:30-14:00	Anna J. Keutgen, Benedikt Berger, Norbert Keutgen	Comparison of lettuce cultivation in an aquaponic and hydroponic system	P-13
13:30-14:00	Anna J. Keutgen, Carina Murauer, Norbert Keutgen	Development and quality of artichoke seedlings (<i>Cynara scolymus</i> L.) depending on genetic potential suitable for cultivation in the Panonicum	P-14
13:30-14:00	Sahrah Fischer, Saskia Grünwasser, Bastian Winkler, Thomas Pircher, Christine Lambert, Thomas Hilger, Georg Cadisch,	Planting up - Testing vertical garden systems to increase vegetable production in urban and rural areas	P-15
13:30-14:00	Layla Naim, Zeina El Sebaaly, Mohammed Ahmed Alsanad, Rita Najjar, Youssef Najib Sassine	The use of nitrogen-rich nano-supplements affects substrate temperature and delays the production cycle of <i>Pleurotus ostreatus</i>	P-16
13:30-14:00	Ovidia Agapie, Florin Stanica, Costel Vinatoru, Elena Barcanu, Bianca Tanase, Ion Gherase, Geanina Negosanu	Assessment of main phenotypic traits and capsaicin content on ornamental peppers cultivars	P-17
13:30-14:00	Adriana Badulescu, Dorin-Ioan Sumedrea, Alina Florea	Behavior of new six Romanian tomato cultivars under the greenhouse conditions	P-18



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9 March 21			
Resistance breeding (SHE)			
17:30-18:00	Baiba Lace	Interaction between host <i>Pyrus communis</i> and pathogen <i>Gymnosporangium sabiniae</i> and characterization of population structure for plant resistance breeding	P-20
Rootstock and environmental effects on plant performance (SHE)			
17:30-18:00	Taewan Park, Sahrah Fischer, Christine Lambert, Thomas Hilger, Georg Cadisch	Effects of different soils and drought conditions on aboveground biomass and water use efficiency of green leafy vegetables	P-21
17:30-18:00	Dimitar Sotirov	Growth and yield characteristics of 'Summit' sweet cherry cultivar on different rootstocks	P-23
Crop fertilisation (SHE)			
17:30-18:00	Persefoni Maletsika, Katerina Grigoriadou, Elefterios Melitzanas, Triantafyllia Georgoudaki, George Nanos	Foliar calcium applications and maturity on clones of 'Lemonato' peach fruit quality and bruising severity	P-24
17:30-18:00	Tony Sajyan, Rami Bejjani, Milena Yordanova, Abdel-Mawgoud Abdel-Mawgoud, Youssef Sassine	Micronutrients uptake and chlorophyll content of chili pepper in response to salinity and Nano-chelate Super Plus ZFM	P-25
17:30-18:00	Alina Florea, Dorin-Ioan Sumedrea, Adriana Badulescu	Influence of fertilization on yield and fruit quality of some tomatoes cultivars grown in greenhouse conditions	P-27
Evaluation of fruit cultivars and production systems (SHE)			
17:30-18:00	Mehdi Karimi, Seyyedalimohamm Cheraqhi, Rostam Yazdani-Biouki	Evaluation of different management practices in pistachio orchards of Northern Ardakan	P-28
17:30-18:00	Stanislava Dimitrova, Laiqing Song, Dimitar Sotirov	Promising yellow-coloured apple cultivars	P-29
17:30-18:00	Dimitar Sotirov, Laiqing Song, Stanislava Dimitrova	Characteristics of new apple selections	P-30
17:30-18:00	Anka Cebulj	Slovenian apple cultivar Majda: An overlooked cultivar with an interesting trait	P-31



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9 March 21			
Evaluation of fruit cultivars and production systems (SHE)			
17:30-18:00	Stanislava Dimitrova, Yanxia Sun, Dimitar Sotirov, Ewa Kruczynska, Zhongwu Jiang, Zhao Lingling, Tang Yan, Laiqing Song	Fruit quality analysis of 'Golden Delicious' and 'Harlikar' apple varieties	P-32
17:30-18:00	George Nanos, Triantafyllia Georgoudaki, Vasilios Visvikis, Persefoni Maletsika, Evangelia Panagiotaki	Alternative practices to improve cv. Firiki apple cultivation	P-33
17:30-18:00	Evangelia Basdeki, Panagiotis Kampouroulias, Athanasios Linos, Stavros Vemmos, Marianna Chatzidimitriou	Genetic diversity and fruit morphological characteristics of chestnut (<i>Castanea sativa</i> Mill.) in Arcadia-Greece	P-34



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10 March 21			
Pollinators and propagation (SHE)			
13:30-14:00	Vera Joedecke, Manuel Treder, Ute Ruttensperger, Peter Rosenkranz	Practical approaches to promote pollinator diversity in urban areas by using perennials	P-35
13:30-14:00	Ute Ruttensperger, Susanne Bonk, Melanie Marquardt, Peter Rosenkranz	Ornamental flowers in urban areas as additional food source for pollinating insects	P-36
13:30-14:00	Suputra Hegele, Martin Hegele, Jens-Norbert Wünsche	Low-cost gelling agents for tissue culture propagation of plantain	P-37
13:30-14:00	Maria Papafotiou, Maria Maniati	In vitro propagation and ex vitro acclimatization of <i>Pittosporum angustifolium</i>	P-38
13:30-14:00	Georgia Vlachou, Aikaterini N. Martini, Maria Papafotiou	Effect of plant growth regulators and explant type on in vitro shoot multiplication of <i>Salvia officinalis</i>	P-39
13:30-14:00	Nataliya Dimitrova, Lilyana Nacheva, V. Ivanova, Artem Medkov	Improvement of in vitro growth and rooting of <i>Magnolia</i>	P-40
13:30-14:00	Lamprini Tasoula, Aikaterini N. Martini, Maria Papafotiou, Konstantinos F. Bertsoyklis	Comparative growth of rooted cuttings of five Mediterranean sage species (<i>Salvia</i> sp.)	P-41
13:30-14:00	Georgia Vlachou, Aikaterini N. Martini, Anastasia Akoumianaki, Maria Papafotiou	Seasonal variation of rooting of <i>Ballota acetabulosa</i> stem cuttings	P-42
Precision horticulture (SHE)			
13:30-14:00	Braulio R Villatoro, Rodolfo E. Fuentes, Melanie J. Samayoa, Jorge Dafonte, Javier J Cancela	Vegetation index obtained from satellite images for yield maps in sugar cane	P-43
13:30-14:00	Ming-Hwi Yao, Yi-Wei Chiu, Hsing-Chuan Hsieh, Ting-Huai Chang, Yuh-Jye Lee	Micro-weather forecast and crop physiological indicators for controlling the microclimate inside greenhouses	P-44
13:30-14:00	Daniel Tran, Antoine Chandelier, Elena Najdenovska, Laura Raileanu, Cédric Camps	Early detection of <i>Tetranychus urticae</i> in tomato soilless culture using electrophysiology and machine learning	P-46
13:30-14:00	Andre Sradnick, Susanne Kramer	Optimization of the use of fertilizers by means of a real-time sensor based system and the software N-Expert	P-47



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10 March 21			
Growing substrate: Alternatives to peat (SHE)			
13:30-14:00	Ute Katharina Vogler, Marie Ohmes, Kai-Uwe Schwarz, Maren Langhof	Alternatives to peat in horticultural production systems	P-48
13:30-14:00	Aikaterini Martini, Maria Papafotiou, Konstantinos Evangelopoulos	Growth of the edible medicinal native species <i>Crithmum maritimum</i> L. on an extensive urban green roof as affected by substrate type and depth	P-49
13:30-14:00	Yüksel Tüzel, Erkan Sahin	Production opportunities of rocket and purslane in growing media	P-50
13:30-14:00	Diemo Daum, Isabell Bruegger, Winfried Temming	Boron dynamics in a peat-based growing medium and its impact on the growth of basil	P-51
Storage and fruit ripening (SHE)			
13:30-14:00	Hun-Joong Kweon, Youngsuk Lee, Seon-Ae Kim, Moo-Yong Park, Dongyong Lee	Effects of 1-MCP treatment on physiological metabolism and fruit quality attributes of 'Hwangok' apples	P-52
13:30-14:00	Nur Fauzana Mohd Kasim	Effect of ethylene on gluconeogenesis in mangoes	P-53
13:30-14:00	Haibo Xuan, Spoorthy Shenoy	Respiration rate and ethylene production of whole and fresh-cut cucumber	P-54



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Light/LED effects on plant performance (SHE)			
17:30-18:00	Anna Sobczak, Katarzyna Kowalczyk, Janina Gajc-Wolska, Monika Niedzinska	Effect of polyphosphates on growth, yield and quality of sweet pepper fruits cultivated with LED lighting	P-55
17:30-18:00	Anna Sobczak, Katarzyna Kowalczyk, Janina Gajc-Wolska, Marzena Sujkowska- Rybkowska	Effect of HPS and LED lighting on transplant growth, chlorophyll fluorescence, and anatomical structure of pepper (<i>Capsicum annuum</i> L.) leaves	P-56
17:30-18:00	Giulia Florio, Aline Galvao, Giam Paolo Zanin	Use of LED lights in rooting and quality of landscape rose cuttings	P-57
17:30-18:00	Filippos Bantis, Christodoulos Dangitsis, Athanasios Koukounaras	Effect of watermelon genotype on effectiveness of optimum LED lighting applied into the healing chamber for production of grafted seedlings	P-58
17:30-18:00	Pia Heltoft	Effect of red light night break treatment on growth in seedling production of Brassica oleraceae and Brassicae napus var. napobrassica	P-59
17:30-18:00	Elisabeth Graaff, Judith Pfenning	The influence of fertilization and light on the flowering of saffron (<i>Crocus sativus</i> L.) in a hydroponic deep-water culture	P-60
17:30-18:00	Anna J. Keutgen, Magdalena Tomaszewska- Sowa, Norbert Keutgen	The green fluorescent protein affects chlorophyll fluorescence	P-62
Fruit responses to storage conditions (SHE)			
17:30-18:00	Guido Rux, Efecan Efe, Christian Ulrichs, Susanne Huyskens-Keil, Karin Hassenberg, Werner B. Herppich	Short-term hot-water treatments and sugar syrup immersion differentially affect aroma-relevant VOCs in fresh-cut apples	P-63
17:30-18:00	Adriana Guerreiro, Custódia Gago, M Graça Miguel, M Leonor Faleiro, Dulce Antunes	Improving the shelf-life of strawberry fruit with edible coatings enriched with essential oils	P-64





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11 March 21			
Plant responses to abiotic stress (SHE)			
13:30-14:00	Marga Pérez Jiménez, Fernando Córdoba, Virginia Celdrán-Sánchez, Carlos García-Almodovar, Olaya Pérez-Tornero	Increased tolerance to salinity in citrus rootstocks	P-66
13:30-14:00	Marga Pérez Jiménez, Hiba Maimouni-Labied, Nazaret Miralles-Jiménez, Carmen Rojo-Carrillo, Nuria Navarro-García, Olaya Pérez-Tornero	Response of three citrus rootstocks to short-term waterlogging	P-67
13:30-14:00	Jana-Maria Breil, Katharina Wellpott, Traud Winkelmann, Christin Bündig	Response of roots of <i>Solanum tuberosum</i> L. to drought stress	P-68
13:30-14:00	Abe Gerrano, Salmina Mokgehele, Isack Mathew, Alfred Odindo, Moloko Mojapelo	Genotype x environment interaction and stability analysis of selected bambara groundnut (<i>Vigna subterranea</i> (L.) Verdc) accessions based on agronomic performance in South Africa	P-70
Thinning agents and detection of fruit quality and crop load (SHE)			
13:30-14:00	Martin Penzel, Christian Kröling	Fruit thinning of 'Pinova' Evelina® apple with metamitron	P-71
Biostimulants and hydroponic systems (SHE)			
13:30-14:00	Giuseppe Colla, Natalie Brown, Jose M. Valdes, Mariateresa Cardarelli, Youssef Roupheal, Paolo Bonini	Plant-based biostimulant improve yield, nutritional and sensorial quality of two <i>Prunus avium</i> varieties	P-72
13:30-14:00	Nataliya Dimitrova, Viktorija Nikolova, Lilyana Nacheva	Effect of acclimatization in a floating system on photosynthetic ability of pear plants (<i>Pyrus communis</i> L. OHF 333)	P-73
13:30-14:00	Giuseppe Colla, Mariateresa Cardarelli, Youssef Roupheal, Roberto Mariotti, Paolo Bonini	Combined applications of endophytic fungi and vegetable extracts improve crop productivity in processing tomato	P-75



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11 March 21			
Plant developmental processes (SHE)			
17:30-18:00	Van Giap Do, Seon-Ae Kim, Youngsuk Lee, Hun-Joong Kweon	Effect of reflected sunlight on differential expression of carotenoids synthesis-related gene and heat-responded protein in apple fruit	P-76
17:30-18:00	Michael Hagemann, Elke Sprich, Patrick Winterhagen	Grapevine EDS1 regulatory region and salicylic acid accumulation: pathway components differently linked to powdery mildew resistance	P-77
Product qualityd (SHE)			
17:30-18:00	Seongkyun Lee, Yun Sang Lee, Se Eun Ms. Yoo, Jaesung Park	Apple virus infection and fruit characteristics	P-78
17:30-18:00	Costel Vinatoru, Adrian Peticila, Bianca Musat, Camelia Bratu, Elena Barcanu, Ovidia Agapie	Phenotypic and biochemical expression of 'Domenesc' cultivar (<i>Sideritis scardica</i> Griseb.)	P-81
17:30-18:00	Martin Penzel, Monika Möhler, Michael Pflanz, Manuela Zude-Sasse	The impact of the leaf area to fruit ratio on the fruit quality of 'Bellise' sweet cherry (<i>Prunus avium</i> L.)	P-82
Plant protection (SHE)			
17:30-18:00	Mufail Salihaj, Diellon Salihaj	Degradation of trifloxystrobin in apple fruit	P-83
17:30-18:00	Yuri Shneyder, Elena Karimova, Elena Shneyder	Risk analysis and molecular diagnostics of Candidatus Phytoplasma phoenicium in Russian Federation	P-84





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Hop genomics and breeding			
10:10-10:15	Michael Hagemann	Welcome addresses	O-IHS-001
10:15-10:30	Gerd Weber	From conventional hop development to Fast-Track Breeding and Production	O-IHS-002
10:30-11:10	David Hendrix, Lillian Padgitt-Cobb, Steven Kothen-Hill, John Henning	The long-read genome assembly of hop (<i>Humulus lupulus</i>) uncovers the pseudoautosomal region and other genomic features	K-IHS-1
11:10-11:30	Lillian Padgitt-Cobb, Padideh Danaee, John Henning, David Hendrix	Developing and improving genomic resources for <i>Humulus lupulus</i> at HopBase.org	O-IHS-01
11:30-11:50	Ron Beatson, Kerry Templeton, Peter Jaksons, David Andersen, Donna Graham, Lawrence Graham	Parental selection in polyploid hop breeding	O-IHS-02
11:50-12:10	Andreja Cerenak, Monika Oset Luskar, Jernej Jakše, Natasa Stajner, Sebastjan Radisek	Slovenian hop breeding: New advances and challenges	O-IHS-03

Breeding, selection and evaluation of hop varieties			
15:50-16:10	Bastien Christ, Claude-Alain Carron	Genetic, phytochemical and agronomic characterization of wild hop populations from Switzerland	O-IHS-04
16:10-16:30	Mette Goul Thomsen	Selection and cultivation of Norwegian hops	O-IHS-05
16:30-16:50	Lidija Bitz, Juha-Matti Pihlava, Merja Hartikainen, Anna Nukari, Teija Tenhola-Roininen	Genetic and chemical evaluation of hops from Finland	O-IHS-06
16:50-17:10	Vladimír Nesvadba, Jitka Charvátová	Productivity and variability of Czech hop varieties	O-IHS-07
17:10-17:30	Roberto Pérez Parmo, Ana Aizpurua Insausti, Olatz Unamunzaga	Adaptation trial of six hop varieties in the Basque Country	O-IHS-08

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10 March 21			
Combating fungal diseases and viroids			
10:30-11:10	Ludger Wessjohann	Combating hops downy mildew based on combined knowledge from metabolomics, genomics and phenotypization	K-IHS-2
11:10-11:30	Taja Jeseničnik, Nataša Stajner, Sebastjan Radišek, Ajay Kumar-Mishra, Jernej Jakše	Studying RNAi in pathogenic hop fungi <i>Verticillium nonalfalfae</i>	O-IHS-09
11:30-11:50	Sebastjan Radišek, Tanja Guček, Maja Dobrajc, Andreja Cerenak, Anita Benko-Beloglavec, Jaroslav Matousek, Jernej Jakše	Citrus bark cracking viroid (CBCVd) on hop: Epidemiological studies and impact to hop production in Slovenia	O-IHS-10
11:50-12:10	Michael Helmut Hagemann, Ute Born, Elke Sprich, Luitgardis Seigner, Hans Oechsner, Benedikt Hülsemann, Jörg Steinbrenner, Jens N. Wünsche, Erich Lehmayr	Fate of the Hop latent viroid during ensiling of hop harvest residues	O-IHS-11
Modern tools for targeted control of plant traits			
15:50-16:10	Jaroslav Matousek, Mishra Ajay Kumar, Tomas Kocábek, Josef Patzak, Karel Krofta, Annegret Laub, Michael Helmut Hagemann, Jens Norbert Wünsche, Ludger Wessjohann, Csaba Koncz	Hop transgenes to analyse metabolome and lupulin gland initiation pathways	O-IHS-12
16:10-16:30	Ajay Kumar Mishra, Tomáš Kocábek, Vishnu Sukumari Nath, Praveen Awasthi, Ankita Shreshta, Uday Kumar Killi, Jernej Jakše, Josef Patzak, Karel Krofta, Jaroslav Matousek	Genome-wide transcriptome profiling of leaf, bract, and lupulin gland provides insight into differential gene expression in secondary metabolite and trichome development in hop (<i>Humulus lupulus</i> L.)	O-IHS-13
16:30-16:50	Pauline Seeburger, Michael Hagemann, Ute Born, Jens N. Wünsche	Genetic variation within the core promoter of the bitter acid biosynthesis genes of hop partly explain different levels of bitter acids between cultivars	O-IHS-14
16:50-17:10	Lucie Horakova, Vaclav Bacovsky, Vojtech Hudzieczek, Josef Patzak, Roman Hobza	Agrobacterium tumefaciens-mediated transformation and regeneration of Saaz hop – Oswald's clones 31 and 72	O-IHS-15
17:10-17:30	Jitka Kumbálová, Karel Krofta, Václav Brant, Jan Chyba	Evaluation of UAV and Sentinel 2 images to estimate condition of hop (<i>Humulus lupulus</i> L.) plants	O-IHS-16



Program – IHS 11 March 2021

Time	Author	Title	Key
11 March 21			
Organic hop production			
10:30-11:10	Joris Cambie	Organic hop growing in Belgium	K-IHS-3
11:10-11:30	Dieter Lohr, Johannes Görl, Elke Meinken	Nitrogen dynamics of chopped hop bines - Effect of leaf to stem ratio	O-IHS-17
11:30-11:50	Javier J Cancela, J Carlos Brea, M Elena Diaz-Silvarrey, Maria Fandiño	Response of ecological hops in Galicia	O-IHS-18
11:50-12:10	Karel Krofta, Josef Patzak, Lenka Mravcová, Alena Hencychová, D. Kolek, Petra Patáková, Pavel Dostálek	Microbial community of hop (<i>Humulus lupulus</i> L.) and its impact on the quality of hop products	O-IHS-19
Hop management and industrial hemp			
15:50-16:10	Adrian Forster, Erich Lehmailr, Florian Schüll, Andreas Gahr	How diseases Influence the hops' quality?	O-IHS-20
16:10-16:30	Harlene Hatterman-Valenti, Lindsey Forward, Collin Auwarter	Evaluation of mulch weed control options within varied nitrogen programs during hop establishment	O-IHS-21
16:30-16:50	Javier J Cancela, José Manuel Mirás-Avalos, Maria Fandiño	Hop water status in Galicia: Eco-physiological approach	O-IHS-22
16:50-17:30	Dr. Paul D. Matthews, John McKay	Closing Remarks: Challenges and Opportunities in Hop Research	O-IHS-23

Poster – Session 1 & 2

9 March 2021



Time	Author	Title	Key
9 March 21			
Hop genomics and breeding (IHS)			
13:30-14:00	Saara Tuohimetsä, Jaana Laamanen, Anna Nukari, Satu Latvala, Lidija Bitz, Juha-Matti Pihlava, Merja Hartikainen, Teija Tenhola-Roininen	Micropropagation of the selected Finnish hop (<i>Humulus lupulus</i>) accessions	P-IHS-01
13:30-14:00	Josef Patzak, Alena Henychová, Petr Svoboda, Ivana Malisová	Evaluation of changes in methylation epigenetics in micropropagated hop plants	P-IHS-02
13:30-14:00	Katherine Easterling, Taylan Morcol, Nicholi Pitra, Jenna Aquino, Lauren Lopes, Paul Matthews, Hank Bass	Cytogenetic analysis of male meiosis in <i>Humulus lupulus</i> L. (hop)	P-IHS-15

Time	Author	Title	Key
9 March 21			
Breeding, selection and evaluation of hop varieties (IHS)			
17:30-18:00	A.K. Yedilova, Z.A. Inelova, P. Matthews, E. Kasnatscheewa	Floristic features of the population of <i>Humulus lupulus</i> L. in the Almaty region (Kazakhstan)	P-IHS-16
17:30-18:00	Mohammad Mafakheri, Hamid Gholizadeh, Paul D. Matthews	The influence of climatological and edaphic factors on distribution pattern and morphological diversity of <i>Humulus lupulus</i> L. populations in the Hyrcanian ecoregion, Iran	P-IHS-17





Poster – Session 3 & 4

10 March 2021

Time	Author	Title	Key
10 March 21			
Combating fungal diseases and viroids (IHS)			
13:30-14:00	Jaroslav Matousek, Tomas Kocabek, Ajay Kumar Mishra, Sebasjan Radisek, Gerhard Steger	The decrease of the propagation rate of hop viroids in pollen and a potential multifunctional role of transcription factor TFIIIA	P-IHS-04
13:30-14:00	Markéta Werschallová, Josef Patzak, Alena Henychová	Molecular genetics analysis of a <i>Pseudoperonospora humuli</i> population in hop growing areas in the Czech Republic	P-IHS-05
13:30-14:00	Urban Kunej, Jernej Jakše, Maja Mikulic Petkovsek, Natasa Stajner	Phenolic and miRNA response of tolerant hop cultivar Wye Target after inoculation with phytopathogenic fungus <i>Verticillium nonalfalfae</i>	P-IHS-06
13:30-14:00	Pedro A Casquero, Santiago Gutierrez, Sara Mayo, Alejandra J. Porteous-Alvarez, Alvaro Rodriguez-González, Mercedes Maldonado-González, Guzman Carro-Huerta, Samuel lvarez-Garcia, Sara Del Ser, Alicia Lorenzana, M Piedad Campelo	Trichoderma species in hop from Orbigo valley	P-IHS-07
10 March 21			
Modern tools for targeted control of plant traits (IHS)			
17:30-18:00	Tomas Kocabek, Ajay Kumar Mishra, Praveen Awasthi, Uday Kumar Killi, Vishnu Sukumari Nath, Josef Patzak, Vera Schoft, Jaroslav Matousek	CRISPR/Cas9 mediated targeting of Myb transcriptional repressors of lupulin gland development in hop (<i>Humulus lupulus</i> L.)	P-IHS-08
17:30-18:00	Javier J Cancela, Rocio Losada-Iglesias, Emilio Corral, María Fandiño, Xesús Pablo González	Thermal camera for monitoring hop yard farms using UAV	P-IHS-09
17:30-18:00	Joshua S. Havill, Casey McNichols, Adam Schrankler, John Henning, Gary J. Muehlbauer	Mapping the powdery mildew resistance locus R1	P-IHS-18
17:30-18:00	N.J. Pitra, D. Zhang, P.D. Matthews	Prediction accuracy of SNP molecular markers for powdery mildew resistance in hops	P-IHS-19

Poster – Session 5 & 6

11 March 2021



Time	Author	Title	Key
11 March 21			
Organic hop production (IHS)			
13:30-14:00	Javier J Cancela, Sara González-García, Beatriz Gullón, María Fandiño, Emilio Corral	Identification of environmental impacts derived from hop cultivation in Galicia	P-IHS-10
13:30-14:00	Josef Vostrel	New possibilities of environmentally safe hop protection against pests and diseases with the help of botanical pesticides, basic substances and bio-fungicides	P-IHS-11
13:30-14:00	Václav Brant, Milan Kroulik, Karel Krofta, Jaroslav Pokorn, Petr Záborský, Josef Jeek, Pavel Donner	Management of infiltration processes in hop gardens	P-IHS-12
13:30-14:00	Johannes Görl, Dieter Lohr, Elke Meinken	Nitrogen release from fresh, aged and aerobically composted hop bines	P-IHS-13

Time	Author	Title	Key
11 March 21			
Hop management and industrial hemp (IHS)			
17:30-18:00	Karel Krofta, Petra Vondráčková, Josef Patzak	Sulfur substances of hop oils - additional tool for identification of hop varieties	P-IHS-14
17:30-18:00	Taylan B. Morçöl, Paul D. Matthews, Adam Negrin, Dong Zhang, Edward J. Kennelly	Hops grown in arid environment have relatively high levels of some aroma, flavor, and antioxidant compounds	P-IHS-20



Program – FAV 9 March 2021

Time	Author	Title	Key
9 March 21			
Health benefits and biodiversity of fruits and vegetables			
10:30-11:10	Lars Ove Dragsted	Health benefits of fruits and vegetables and biomarkers of their intake	K-FAV-1
11:10-11:30	Pingli Yuan, Liu Wenge	Metabolomics genome-wide association analysis provide insight into natural variation of <i>Citrullus lanatus</i> metabolism	O-FAV-01
11:30-11:50	Michael Netzel, Caroline Dumler, Nadine Weber, Lisa Striegel, Michael Rychlik, Hung Hong Trieu, Tim O'Hare	Does shape matter? Folate in strawberry and avocados	O-FAV-02
11:50-12:10	Christoph Carlen, Bastien Christ, André Ançay	Ellagitannin pattern of raspberry fruits from 11 primocane fruiting cultivars	O-FAV-03
Bioactive compounds affected by pre- and post-harvest crop management			
15:50-16:10	Casey Barickman, Skyler Brazel, Carl Sams	Short-term waterlogging of kale (<i>Brassica oleracea</i> L. var. <i>acephala</i>) plants causes a decrease in carotenoids and chlorophylls while increasing nutritionally important glucosinolates	O-FAV-04
16:10-16:30	Darius Kviklys, Nobertas Uselis, Jonas Viskelis, Juozas Lanauskas, Mindaugas Liaudanskas	Accumulation of secondary metabolites in apple fruit depends on orchard planting and management technologies	O-FAV-05
16:30-16:50	Susanne K. Riedel, Andreas Spornberger, Ivo Soural, Herbert Kefeder, Jose Carlos Herrera, Astrid Forneck	Hawthorn (<i>Crataegus monogyna</i>) grown in Lower Austria: Exploring the phenolic content and antioxidant capacity of extracts obtained from different organs	O-FAV-06
16:50-17:10	Yanjie Song	Effect of far-red and blue light irradiation on nutritional quality in postharvest cherry tomato	O-FAV-07
17:10-17:30	Bonga Ngcobo, Isa Bertling	Post-harvest alterations in tomato fruit quality following exposure to red and blue LED lights	O-FAV-08



Program – FAV 10 March 2021



Time	Author	Title	Key
10 March 21			
Health effects and analysis of secondary metabolites			
10:30-11:10	Volker Böhm	Health promoting effects of secondary plant products	K-FAV-2
11:10-11:30	Austin Espe, Dipayan Sarker, Kallidas Shetty, Hartene Hatterman-Valenti	Phenolic bioactive-linked antioxidant and anti-hyperglycemic functionalities of blackberry cultivars grown under organic and conventional production practices	O-FAV-09
11:30-11:50	Hunter Hammock, Carl Sams	Quantification of medicinally important volatile organic compounds in common basil varieties	O-FAV-10
11:50-12:10	Elizabeth Jeffery, Mark Berhow, Molly Black, Yanling Wang	Absorption of quercetin glycosides becomes more complex as our knowledge grows	O-FAV-11

Biofortification and chemodiversity			
15:50-16:10	F. Bianchi, E. Soini, F. Ciesca, L. Bortolotti, Walter Guerra, Peter Robatscher, Michael Oberhuber	The biodiversity in apple hosts remarkable chemodiversity: A study on true-to-type cultivars from the Laimburg core collection	O-FAV-12
16:10-16:30	Tim O'Hare, Hung Hong	Purple sweetcorn and cardiovascular health: Putting anthocyanin into sweetcorn	O-FAV-13
16:30-16:50	Christoph Budke, Timo Weber, Alexander Frieman, Hinrich Holthusen, Diemo Daum	Biofortification of apples with selenium under orchard conditions	O-FAV-14
16:50-17:10	Ruth Kleine-Kalmer, Diemo Daum, Ulrich Enneking	Consumer behavior analysis for selenium biofortified apples and implications for conducting a market test in food retailing	O-FAV-15
17:10-17:30	Diemo Daum, Christoph Budke, Marie-Luise Schachtschneider	Pathways of exogenously applied iodine in apple trees	O-FAV-16





Program – FAV

11 March 2021

Time	Author	Title	Key
11 March 21			
Specific bioactive compounds against human diseases			
10:30-11:10	Yves Desjardins	The effects of fruits and vegetables on the microbiota explain their pleiotropic properties on health	K-FAV-3
11:10-11:30	Marie Thérèse Charles, Daniel Rolland, Benoit Bizimungu, France Boudreau	A sesquiterpene rich fraction from potato with bioactive properties against selected leukemia cell lines	O-FAV-17
11:30-11:50	Chikere Nkwonta, Leon A. Terry, Carmen Alamar Gavidia, Selim Cellek	Overview of potential individual phenolic compounds of African walnut extracts and cytotoxicity assessment in a lung cancer cell line (A549)	O-FAV-18
11:50-12:10	Jashbir Singh, Rita Metrani, Dr. G.K. Jayaprakasha, Bhimanagouda Patil	Optimized method for the quantitation of amino acids from different plant moieties	O-FAV-19
Food security and healthy nutrition			
15:50-16:10	Wolfgang Bokelman, Susanne Huyskens-Keil, Zoltan Ferenczi, Silke Stöber	The role of horticulture to improve food security and a healthy nutrition	O-FAV-20
16:10-16:30	Pride Ebile, Jens Norbert Wünsche	Indigenous vegetables for improving nutrition insecurity in the rural Mbororo community in Cameroon	O-FAV-21
16:30-16:50	Caroline Elliott-Kingston, Meriel McClatchie	History of the Irish diet in plants: The plant-based diet of Irish people displayed in an educational show garden	O-FAV-22
16:50-17:10	Thomas Havelt, Sarah Brettschneider, Imke Korte, Judith Kreyenschmidt, Michaela Schmitz	Plant-based bioactive compounds for substitution of petrol-based stabilisers in packaging materials	O-FAV-23
17:10-17:30	Mohammad Abdur Rahim	Role of horticultural production in Bangladesh on nutritional food security, household income, poverty reduction, biodiversity, sustainable development and environmental protection	O-FAV-24



Poster – Session 1

9 March 2021



Time	Author	Title	Key
9 March 21			
Health benefits and biodiversity of fruits and vegetables (FAV)			
13:30-14:00	Radek Vávra, Ales Horna, Aneta Bilková, Eliska Eichlerova, Pavlina Knapová, Radka Machova, Jiri Kaplan, Ivana Novotna, Viktor Vorisek, Veronika Dankova	Evaluation of antioxidants in soft fruits (currant, gooseberry)	P-FAV-02
13:30-14:00	Konstantinos Bertsouklis, Christina Daveta-Michopoulou, John Daskalakis, Katerina Biniari, Maria Papafotiou	Exploring the nutritional potential of Arbutus species found in Greece	P-FAV-03
13:30-14:00	Radek Vávra, Pavlina Knapová, Aneta Bilková	Total phenolic content and antioxidant activity of apple cultivars	P-FAV-04
13:30-14:00	Custódia Gago, Adriana Guerreiro, M Graça Miguel, M Leonor Faleiro, M Dulce Antunes	Dried snacks of <i>Opuntia-ficus indica</i> (L.) quality and its preservation capacity	P-FAV-05
13:30-14:00	Virginia Hernandez Perez, Pilar Flores, Juana Cava, Elia Molina, Inmaculada Garrido, Elena Sanchez, Jose Fenoll, Adrian Rodriguez, Pilar Hellin	Nutritional and bioactive evaluation of high quality traditional tomato landraces from Southeast Spain	P-FAV-06
13:30-14:00	Anna J. Keutgen, Barbara Berger, Norbert Keutgen	Suitability of sweet william (<i>Dianthus barbatus</i> L.) to be used as a tea plant	P-FAV-07





Poster – Session 2

9 March 2021

Time	Author	Title	Key
9 March 21			
Bioactive compounds affected by pre- and post-harvest crop management (FAV)			
17:30-18:00	Kyuhoi Lee, Sung-Hee Lee, Eunsol Yeon, Ju Hyoung Kim	Effect of shading on growth and functional ingredients of <i>Gynura Procumbens</i> in hydroponic cultivation using organic nutrient solution	P-FAV-08
17:30-18:00	Bonga Ngcobo, Isa Bertling	Effect of light combined with heat treatment on colour development and fruit quality of cherry tomato (<i>Solanum lycopersicum</i>)	P-FAV-09
17:30-18:00	Blessing Agoreyo, Loveth Marcel	Calcium carbide induces lipid peroxidation in ripening plantain fruits (<i>Musa paradisiaca</i>)	P-FAV-10
17:30-18:00	Simone Röhlen-Schmittgen, Jan Ellenberger	Impact of environmental factors and salt stress on the accumulation of economically relevant leaf compounds in bell pepper	P-FAV-11
17:30-18:00	Sarah E. Parker, Jennifer R. Wheeler, Curtis R. Lockett, Dennis E. Deyton, Jeanine Davis, Thomas Björkman, Carl E. Sams	Comparison of different cooling and postharvest storage methods on carotenoid and chlorophyll contents in broccoli	P-FAV-12
17:30-18:00	Virginia Hernández, Pilar Hellin, Elia Molina, Jose Fenoll, Maria Molina, Inmaculada Garrido, Juana Cava, Jose Eduardo Marques-Galvez, Pilar Flores	Ozone and microbial biostimulants increase pepper bioactive content	P-FAV-13
17:30-18:00	Blessing Agoreyo, Adesuwa Imasuen, Chigozie Iroegbu, Ola-oluwa Enigbokan	Calcium carbide reduces micronutrient levels in ripening plantain fruits (<i>Musa paradisiaca</i>)	P-FAV-16



Poster – Session 4 10 March 2021



Time	Author	Title	Key
10 March 21			
Biofortification and chemodiversity (FAV)			
17:30-18:00	Diemo Daum, Ketut Anom Wijaya, Patrick G. Lawson, Christoph Budke	Strategies for iodine biofortification of pot-grown herbs	P-FAV-14





Program – DGG

9 March 2021

Time	Author	Title	Key
9 March 21			
10:10-10:30	Vice president DGG Heiko Mibus-Schoppe & President BHGL Marc-Guido Megies	Welcome addresses	K-DGG
10:30-10:50	Michael Zoth	Maschinelles Schnitt – Fortschritt in der Mechanisierung	DGG-01
10:50-11:10	Hanna Wildenhues, Henriette Burger, Linda Kristina Bork, Hildegard Garming	Risiko durch stickstoffreduzierte Düngung im Gemüsebau – Einschätzungen aus der Praxis	DGG-02
11:10-11:30	Sabine Wittmann, Ivonne Jüttner, Heike Mempel	Steigerung der Energieeffizienz von Container Indoor-Farming Systemen mit einem Fokus auf Belichtungsstrategien	DGG-03
11:30-11:50	Laurens Huneck, Roman-David Kulko, Sabine Wittmann, Heike Mempel	Ermittlung praxisrelevanter Qualitätsparameter mittels (VIS-)NIR-Scannern: Shelf Life-Vorhersage in gartenbaulichen Supply Chains	DGG-04
11:50-12:10	Haibo Xuan, Christian Falkenstein, Kerstin Pasch	EU-FOX – Food processing in a Box (Lebensmittelverarbeitung in einer Kiste)	DGG-05



Poster – Session 2

9 March 2021



Time	Author	Title	Key
9 March 21			
DGG			
17:30-18:00	Samantha Rubo, Jana Zinkernagel	Unabhängige Vegetationsindizes für Wasser- und Stickstoffversorgung von Freilandspinat auf Grundlage hyperspektraler Messungen	P-DGG-01
17:30-18:00	Bernhard Althaus, Michael Blanke	Nicht destruktive Messmethoden zur Erfassung des Alterungsprozesses von Gemüsepaprika	P-DGG-02
17:30-18:00	Julian Hecht, Sabine Wittmann, Heike Mempel	Einfluss des Belichtungs- und Kultursystem auf den Wuchs und weitere physiologische Parameter von <i>Solanum lycopersicum</i>	P-DGG-03
17:30-18:00	Matthias Preusche, Jakob Ley, Andreas Ulbrich	Nutzung vegetativer Pflanzenorgane ausgewählter Hortensien-Genotypen	P-DGG-04
17:30-18:00	Beyza Gür, Achim Kunz, Michael Blanke	Vergleich verschiedener Methoden zur Farbverbesserung beim Apfel der Sorte Braeburn Hillwell	P-DGG-05
17:30-18:00	Eleonora Zickenheiner, Marcel Robischon	Frau Rotacher und Gartenmeister Simon im Öpfelgärtli. Entwicklung eines didaktischen Arboretums auf Basis von Forschung zu den historischen Apfelsorten des Raums Südbaden, Elsass und Nordschweiz.	P-DGG-06





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