




XII INTERNATIONAL SYMPOSIUM ON INTEGRATING CANOPY, ROOTSTOCK AND ENVIRONMENTAL PHYSIOLOGY IN ORCHARD SYSTEMS

All times indicated are Pacific Time (PDT)

Monday 26 July


	Time	Presenting Author	Title	Transmission
POSTER SESSION	6:00	Poster Session Opens		
WELCOME SESSION	7:00	Musacchi, Stefano (WSU)		Live
	7:10	Lang Greg (for ISHS)		Live
	7:20	Dean Koenig, Rich (WSU)		Recorded

ENVIRONMENTAL PHYSIOLOGY SESSION 1


KEYNOTE SPEAKER	7:30	Corelli Grappadelli, Luca	Precise ecophysiology: how physiological studies can lead to innovative management practices on fruit crops	Recorded
Session Sponsor: 	8:00	Lauri, Pierre-Eric	Designing a sustainable orchard - Plant diversity as a key and ways to implement it	Recorded
	8:15	Blanke, Michael	Effects of contamination on optical properties of reflective mulches- and their visualisation	Recorded
	8:30	Morandi, Brunella	Multifunctional nets can have different effects on water relations, leaf gas exchanges and fruit quality of cherry trees depending on the rootstock vigor	Recorded
	8:45	Manfrini, Luigi	<i>Actinidia deliciosa</i> vs. <i>Actinidia chinensis</i> : a comparison of physiological and productive parameters	Recorded
	9:00	Pastore, Chiara	Application of a multidisciplinary approach to understand the effect of night temperatures on anthocyanin accumulation in cv. Corvina (<i>Vitis Vinifera</i> L.)	Recorded
	9:15	Questions and Discussion		Live

BREAK	9:30	Coffee Break and Speed Networking		Live
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ENVIRONMENTAL PHYSIOLOGY SESSION 2

Session Sponsor: 	10:00	Gonzalez Noguier, Carlota	Investigation the effect of warmer temperatures during ecodormancy in time of bud break of two apple cultivars in south-east UK	Recorded
	10:15	Grechi, Isabelle	Pruning intensity and severity affect flowering processes in the mango tree	Recorded
	10:30	Belhassine, Fares	Modelling floral induction on 3D structures by simulating transport of inhibiting and activating signals and their combined effects on apple trees	Recorded
	10:45	Müller, Anton	The effect of evaporative cooling on yield and flower bud retention during spring of three pistachio cultivars (<i>Pistacia vera</i> L.) in a climate with moderate winter chilling and high spring temperatures	Recorded
	11:00	Crane, Omer	Coping with global warming effects on reduced winter chilling for deciduous fruit trees	Recorded
	11:15	Questions and Discussion		Live

Brown Bag Lunch Roundtable Discussion

Brown Bag Sponsor: 	11:30	Discussion Lead: Corelli Grappadelli, Luca	Round table on physiological and biological topics belonging to the Workgroup Environmental Physiology and Developmental Biology	Live
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ENVIRONMENTAL PHYSIOLOGY SESSION 3

KEYNOTE SPEAKER	12:30	Cheng, Lailiang	Apple flower development and pollen tube growth in relation to sorbitol	Recorded
Session Sponsor: 	13:00	Reginato, Gabino	Fruit size and yield efficiency of 'Fuji' apples grown in Chile depend mainly on winter temperature and weather before harvest	Recorded
	13:15	Stone, Cameron	Water use of sweet cherry under protected cropping systems	Recorded
	13:30	Moran, Renae	Shoot and flower bud cold temperature tolerance in three peach cultivars exposed to four days of warm deacclimating temperatures	Recorded
	13:45	Whiting, Matthew	A precision pollination system for yield security in tree fruit	Recorded
	14:00	Serra, Sara	Assessing 'WA 38' pollination and fruit development	Recorded
	14:15	Roeder, Stefan	Standardization of in vitro bioassay to assess the pollen germination and tube growth performance in apples	Recorded
	14:30	Questions and Discussion		Live

END OF DAY 1	14:45	Conclusions and Announcements		Live
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XII INTERNATIONAL SYMPOSIUM ON INTEGRATING CANOPY, ROOTSTOCK AND ENVIRONMENTAL PHYSIOLOGY IN ORCHARD SYSTEMS

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Tuesday 27 July


	Time	Presenting Author	Title	Transmission
POSTER SESSION (Environmental Physiology + Flower Biology)	6:00	Poster Session Opens		
	6:45	Poster Discussion + Speed Networking (Two events occurring simultaneously)		Live

TRAINING SYSTEMS SESSION 1


KEYNOTE SPEAKER	7:00	Robinson, Terence	A re-examination of the physiological basis of orchard system performance with respect to light interception and light conversion efficiency	Recorded
<i>Session Sponsor:</i> 	7:30	Iglesias, Ignasi	Developing high-density training systems in Prunus tree species for a sustainable and efficient production	Recorded
	7:45	Lodolini, Enrico Maria	Damages induced by an over-the-row harvester in ten varieties in a high-density olive orchard	Recorded
	8:00	Meland, Mekjell	Determination of suitable high density planting systems of 'Celina' pears in a Nordic climate	Recorded
	8:15	Questions and Discussion		Live

BREAK	8:30	Coffee break and Trivia 1		Live
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TRAINING SYSTEMS SESSION 2

<i>Session Sponsor:</i> 	8:45	Raffo Benegas, Maria Dolores	New planting systems to increase apple orchard profitability: preliminary results in Argentina	Recorded
	9:00	Lang Gregory	Experimental canopy training effects on peach/nectarine vigor advance planar training system development as well as evaluation and adoption of vigor-limiting rootstocks	Recorded
	9:15	Fallahi, Esmaeil	Tree spacing, architecture, and branch configuration impacts on growth, yield, fruit quality, and leaf minerals in 'Aztec Fuji' apple over five years	Recorded
	9:30	Kallsen, Craig	Conceptions of a novel crop ideotype for pistachio production in the San Joaquin Valley (SJV) of California	Recorded
	9:45	Questions and Discussion		Live

ORCHARD MANAGEMENT SESSION 1

<i>Session Sponsor:</i> 	10:00	Girona, Joan	Growth sensitivity of young almond trees to water deficits: quantifying the dependence and verifying the effects on yield on subsequent years	Recorded
	10:15	Andergassen, Christian	Mechanical defoliation of apple trees for colour improvement	Recorded
	10:30	Blanke, Michael	Colour improvement under hail net with reflective mulches - light distribution and its visualisation	Recorded
	10:45	Volder, Astrid	Almond and walnut root population dynamics in response to irrigation and other management practices	Recorded
	11:00	Melgar, Juan Carlos	Tolerance of peach fruitlets to late spring freezes	Recorded
	11:15	Questions and Discussion		Live

Brown Bag Lunch Roundtable Discussion

<i>Brown Bag Sponsor:</i>  Technical Textiles	11:30	Discussion Lead: Lang, Greg	Round table on topics related to the Workgroup of Orchard and Plantation Systems	Live
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XII INTERNATIONAL SYMPOSIUM ON INTEGRATING CANOPY, ROOTSTOCK AND ENVIRONMENTAL PHYSIOLOGY IN ORCHARD SYSTEMS

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Tuesday 27 July (continued)

TRAINING SYSTEMS SESSION 3

KEYNOTE SPEAKER	Time	Speaker	Topic	Status
Session Sponsors: 	12:30	Tustin, Stuart	Orchard systems for the 21 st century: perspectives, considerations and critique	Recorded
	13:00	Stanley, Jill	Establishment of planar sweet cherry canopies using physiological principles	Recorded
	13:15	Scofield, Claire	Relationships between light, yield and fruit quality of sweet cherries grown on narrow row, planar canopy systems	Recorded
	13:30	O'Connell, Mark	Crop load and canopy architecture effect yield and fruit quality of 'Golden May' Apricot	Recorded
	13:45	McClymont, Lexie	Yield and canopy radiation interception of three blush pear selections in Australia	Recorded
	14:00	Ibell, Paula	Alternate high-density, training systems influence tree growth and yields in young intensive mango (<i>Mangifera indica</i>) orchards	Recorded
	14:15	Stanica, Florin	Behaviour of some Romanian pear cultivars under Parallel U and Trident canopy	Recorded
	14:30	Questions and Discussion		Live
END OF DAY 2	14:45	Conclusions and Announcements		Live



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Wednesday 28 July


	Time	Presenting Author	Title	Transmission
POSTER SESSION (Training Systems + Orchard Management)	6:00	Poster Session Opens		
	6:45	Poster Discussion		Live

BUSINESS MEETING 7:00 - 8:30


	7:00	Costes Evelyne; Lang Greg; Corelli Grappadelli Luca; Fazio Gennaro; Musacchi Stefano; DeJong Ted		Live Discussion and Voting
	7:15	Chair of the Working Groups	ISHS members will decide on the venue and convener(s) of the next symposium in this series, and on the Chair of ISHS Working Group in case this applies	
	7:30	Voting Current ISHS members vote on next venue of the XIII Symposium		
	7:45	Musacchi, Stefano	Past ISHS meetings overview	
	8:15	Blanke, Michael	In Memory of past members: Jens Wünsche	

BREAK	8:30	Coffee break and Group Photo 1		Live
	8:45	Coffee break and Trivia 2 + speed networking		Live


ROOTSTOCKS SESSION 1

KEYNOTE SPEAKER	9:00	Gennaro, Fazio	Imagine rootstocks	Recorded
Session Sponsor:  Beaulieu International Group Technical Textiles	9:30	Vercammen, Jef	Search for a dwarfing rootstock for 'Jonagold'	Recorded
	9:45	Kviklyš, Darius	EUFRRIN apple rootstock trials: first results across the Europe	Recorded
	10:00	Palai, Giacomo	Rootstock and irrigation induced different response in berry aromatic characteristics in 'Merlot' and 'Sangiovese' grapevines	Recorded
	10:15	Siboza Xolani, Irvin	Horticultural performance of 'Fuji' apple trees on the Cornell-Geneva® apple rootstocks in South Africa	Recorded
	10:30	Winer, Leo	Performance of a tetraploid avocado rootstock VC-320	Recorded
	10:45	Questions and Discussion		Live

Brown Bag Lunch Roundtable Discussion

Brown Bag Sponsor:  OREGON ROOTSTOCK AND TREE CO. INC. www.treco.nu	11:00	Discussion Lead: Fazio, Gennaro	Round table on topics on research subjects related to the Workgroup of Rootstock Breeding and Evaluation	Live
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ROOTSTOCKS SESSION 2

KEYNOTE SPEAKER	12:00	DeJong, Ted	How do dwarfing rootstocks control fruit tree vigor? (Is it about hormones, nutrients, carbohydrates or water?)	Recorded
Session Sponsor:  Northwest FARM CREDIT SERVICES	12:30	Rufato, Leo	Changing the perspective of apple culture in Brazil with the Geneva® series rootstocks	Recorded
	12:45	Milliron, Luke	Clonal paradox rootstock comparison on 'Howard' walnut in Northern Sacramento Valley of California	Recorded
	13:00	Westphal, Andreas	Identifying walnut (Juglans spp.) rootstocks with resistance and tolerance to plant-parasitic nematodes	Recorded
	13:15	Bujdosó, Geza	Evaluation of growth and cropping of early ripening sweet cherry cultivars on different rootstocks among central Hungarian climate conditions during the past 10 bearing years	Recorded
	13:30	Questions and Discussion		Live

END OF DAY 3	13:45	Conclusions and Announcements		Live
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Thursday 29 July

	Time	Presenting Author	Title	Transmission
POSTER SESSION (Rootstocks)	6:00	Poster Session Opens		
	6:45	Poster Discussion + Speed Networking (Two events occurring simultaneously)		Live

ORCHARD MANAGEMENT SESSION 2

<i>Session Sponsor:</i> 	7:00	Arnoldussen, Brent	Plant based dispersions: novel sprayable frost protectants for tree fruit	Recorded
	7:15	Bird, George	Impact of cover crops, compost and mulch on cherry tree development and yield	Recorded
	7:30	Mahdavi, Shahla	Branch induction in newly planted un-feathered 'Aztec Fuji' apple trees using cambium cuts, promalin, nitrogen, and tip removal	Recorded
	7:45	Questions and Discussion		Live


ROOTSTOCKS SESSION 3

<i>Session Sponsor:</i> 	8:00	Reighard, Gregory L.	Thirty-three years evaluating rootstocks for peach in the NC-140: What have we learned	Recorded
	8:15	Lang, Gregory	Ten-year conclusions from the NC-140 sweet cherry canopy architecture x rootstock trials in North America	Recorded
	8:30	Minas, Ioannis	Establishment performance of the 2017 NC-140 semi-dwarf peach rootstock trial across 10 sites in North America	Recorded
	8:45	Casagrande Biasuz, Erica	Rootstock-induced scion vigor is associate with changes in plant water status in the scion	Recorded
	9:00	Questions and Discussion		Live


BREAK

BREAK	9:15	Coffee break and Trivia 3		Live
	9:30	Coffee break and Group Photo 2 + speed networking		Live


CROP LOAD AND THINNING SESSION

<i>Session Sponsor:</i> 	9:45	Vercammen, Jef	Chemical thinning of 'Nicoter'	Recorded
	10:00	Reginato, Gabino	Effect of auxin sprays on 'French' plum fruit size and yield efficiency under different source/sink ratio	Recorded
	10:15	Rufato, Leo	Different chemical thinning strategies and their effect on apple production in Southern Brazil	Recorded
	10:30	Rufato, Leo	New strategy using retain to increase fruit set on apples in mild climatic region in Southern Brazil	Recorded
	10:45	Siboza, Xolani Irvin	Evaluation of dormancy breaking agents in apple trees grown in warm-winter regions of South Africa	Recorded
	11:00	Questions and Discussion		Live

Brown Bag Lunch Roundtable Discussion

<i>Brown Bag Sponsor:</i> 	11:15	Discussion Lead: DeJong, Ted	Discussion on the problems of different crops and the sustainability of the various sectors	Live
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VIRTUAL FIELD DAY

	12:15	Musacchi, Stefano	Virtual Field Day: Brief Live introduction by Musacchi, Stefano followed by 60 minute video	Recorded
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Thursday 29 July (continued)

FLOWER BIOLOGY SESSION

Session Sponsor: 	13:15	Hillmann, Laura	GDD, ovary growth and relative water content predict changes in the lethal temperature of 'Montmorency' tart cherry flower buds between dormancy and anthesis	Recorded
	13:30	Minas, Ioannis	Dissecting peach cold hardiness eco-physiology and metabolism	Recorded
	13:45	Mizani, Anahita	The effect of rootstocks on mango tree vigour, scion architecture and percentage of flowering terminals in juvenile unpruned trees	Recorded
	14:00	DeJong, Ted	A simple conceptual model for explaining how fruit trees work	Recorded
	14:15	Questions and Discussion		Live
END OF DAY 4	14:30	Conclusions and Announcements		Live




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All times indicated are Pacific Time (PDT)


Friday 30 July

	Time	Presenting Author	Title	Transmission
POSTER SESSION (Precision Farming + Fruit Quality)	6:00	Poster Session Opens		
	6:45	Poster Discussion		Live

PRECISION FARMING SESSION

KEYNOTE SPEAKER	7:00	Khot, Lav	Precision orchard management in digital agriculture era: a review	Recorded
Session Sponsor: 	7:35	Penzel, Martin	Modelling the tree individual fruit bearing capacity of <i>Malus x domestica</i> Borkh. 'Gala'	Recorded
	7:50	Sahni, Ramesh Kumar	Fixed spray delivery systems for efficient crop input applications in deciduous crops	Recorded
	8:05	Chandel, Abhilash	High resolution ground and airborne imaging techniques for rapid mapping of orchard systems	Recorded
	8:20	Auzmendi, Inigo	Virtual plants for interpreting the effects of planting density in young macadamia orchards	Recorded
	8:35	Questions and Discussion		Live

FRUIT QUALITY SESSION 1


Session Sponsor:  Technical Textiles	8:50	Blanke, Michael	Non-invasive detection of russet on pome fruit	Recorded
	9:05	Louw, Esme	The effect of protracted bloom on 'Golden Delicious' fruit quality from two climatically different areas	Recorded
	9:20	Honaas, Loren	The 'Anjou' Genome: perspectives on winter pear production	Recorded
	9:35	Questions and Discussion		

BREAK

9:50 **Coffee Break and Trivia 4**

Live

FRUIT QUALITY SESSION 2

Session Sponsor: 	10:20	Anthony, Brendon	Comprehensive physiological and metabolomic analysis to identify metabolic signatures of the impact of canopy position on peach fruit quality	Recorded
	10:35	van Hooijdonk, Ben	Aminoethoxyvinylglycine maintains fruit red skin colour and delays maturation, improving size and quality of 'PremP009' pear	Recorded
	10:50	Whiting, Matthew	Intra-canopy variability in apple and sweet cherry fruit quality	Recorded
	11:05	Questions and Discussion		Live

AWARD

PRESENTATIONS

11:20	ISHS WG chairs	Presentation of the ISHS medal and certificate to convener(s)	Live
11:30	ISHS WG chairs	Presentation of the ISHS Young Minds Award certificates	Live

END OF SYMPOSIUM

11:40	Concluding Remarks by Musacchi, Stefano		Live
11:50	Goodbye from XII Orchard Systems 2021 Organizing Committee Members		Live