

Sunday, 6th September

Venue: Austrian Horticultural Society (Österreichische Gartenbaugesellschaft), Siebeckstraße 14, 1220 Vienna

18.00 „Get together“ at the Austrian Horticultural Society

Monday, 7th September

Venue: Vienna University of Technology, Karlsplatz 13, 1010 Vienna

8.00 Start of Registration

9.00-9.30 Welcome Addresses

Chair: Andreas Baumgarten

keynote	9.30-10.15	Compost use as a means to support sustainability in growing media production	Michael Raviv (Newe Ya'ar Research Center, ISRAEL)
	10.15 - 10.45	COFFEE BREAK	
o1	10.45-12.00	Balancing green energy and materials recycling: woody biomass for combustion and green waste composting combined with compost for growing media?	Bart Vandecasteele (ILVO, Plant Science Unit, BELGIUM)
o2		Different organic composts affect fruit quality and yield components differently	Jamal Javanmardi (Shiraz University, IRAN)
o3		Producing high quality compost from bio-waste as feedstock for growing media	Adrie Veeken (Attero, THE NETHERLANDS)
o4		Sustainable potting soil based on green waste compost and other organic recycled materials: use of elemental sulphur to control pH	Bart Vandecasteele (ILVO, Plant Science Unit, BELGIUM)
p1	12.00-12.20	Evaluation of Compost and Anaerobic Digested Residues as Component of Growing Media for Ornamental Shrubs Production	Giorgio Ponchia (University of Padua, ITALY)
p2		Vermicompost tea and vermiwash improved health related compounds in Lemon basil (<i>Ocimum citriodorum</i> Vis.)	Jamal Javanmardi (Shiraz University, IRAN)
p4		Lettuce and cabbage growth and nutrient uptake response to invasive Acacia waste composts	Luis Miguel Brito (CIMO, Escola Superior Agrária, IPVC, PORTUGAL)
o4a		Task Group 'Growing Media/Horticulture' within the European Compost Network	Adrie Veeken (European Compost Network)
p4a		Substitution of peat with vermicompost from food waste digestate and green waste compost	Alene Alemu Tesfamichel (Lindum AS, NORWAY)
	12.20 - 13.45	LUNCH	



Chair: Michael Raviv			
o5	13.45-15.00	Recycled Growing Media in Landscaping	Eeva-Maria Tuhkanen (Natural Resources Institute, FINLAND)
o6		Sphagnum Peat Moss Alternative: Stabilized Wood Fiber	Ka Yeon Jeong (The Scotts Miracle-Gro Company, USA)
o7		Compost Tea Source and Application Method Effects on Lettuce (<i>Lactuca sativa</i>) Yield, Quality and Nutrient Content	Gaius Eudoxie (The University of the West Indies, TRINIDAD AND TOBAGO)
o8		Production of potted parsley and coriander in coconut coir amended with compost	Henrique Ribeiro (University of Lisbon, PORTUGAL)
o9		Biological characteristics of Composts and Growing Media as determined by plant response analysis	Norman Schlatter (Austrian Agency for Health and Food Safety, AUSTRIA)
p6	15.00-15.20	Greenhouse tomato cultivation with municipal solid waste compost and supplementary fertigation	Nikolaos Tzortzakis (Cyprus University of Technology, CYPRUS)
p7		Effect of municipal solid waste compost and fertigation in endive seedling production	Nikolaos Tzortzakis (Cyprus University of Technology, CYPRUS)
p7a		Physical, Chemical and Biological Properties of Some Alternative Growing Substrates	Francesco Pica (Università Politecnica delle Marche, ITALY)
p9		Physalis seedlings production in commercial and organic wastes based substrates	Pedro Maranhã Peche (Federal University of Lavras, BRASIL)
p10		Effects of aeration rates on composting of ornamental pruning wastes	Francesco Giuffrida (Catania University, ITALY)
p11		Composting of ornamental pruning wastes using different methods during the maturation phase	Francesco Giuffrida (Catania University, ITALY)
	15.20-15.45	COFFEE BREAK	
Chair: Stephanie Siebert			
o10	15.45-17.00	Austria – End of Waste Regulation for Compost	Angelika Stüger Hopfgartner (regional government Styria, AUSTRIA)
o11		Compost Production and use in the City of Vienna	Wojciech Rogalsky (City of Vienna, AUSTRIA)
o12		Substitution of peat with vermicompost from food waste digestate and green waste compost	Ketil Stoknes (Lindum AS, NORWAY)
o12a		Development of an integrated method for assessing compost maturity	Eva Erhart (BioResearch Austria, AUSTRIA)

o13 Quality Control of Compost in Austria? Horst Müller (Compost Quality Association Austria, AUSTRIA)

18.30 Welcome Reception at the Vienna Town Hall

Tuesday, 8th September

Chair: Chris Blok

keynote 8.30-9.00 An Overview of New and Revised Methodologies and Technologies in Substrate Analysis and Characterization Brian Jackson (North Carolina State University, USA)

o14 9.00-10.15 Informed decision making: A tool to aid the decision making process of sourcing responsible growing media throughout the UK supply chain Paul Alexander (Royal Horticultural Society, UK)

o15 SELECTING RAW MATERIALS FOR SUSTAINABLE POTTING SOILS: INDICATORS FOR POTENTIAL BIODEGRADATION AND N IMMOBILIZATION Jane Debode (ILVO, Plant Sciences Unit, BELGIUM)

o16 Rhizometer Root Tracing Techniques and Digital Image Analysis for Assessing and Quantifying Seedling Root Growth in Substrates Brian Jackson (North Carolina State University, USA)

o17 Effects of Different Fertigation-Growing Medium Systems on Plant Morphometric Response During Soilless Strawberry Growth Paolo Zucchi (Fondazione Edmund Mach, ITALY)

p12 10.15-10.30 RHP Potting Reference; a basic Tool for application of Growing Media Hans Verhagen (Stichting RHP, THE NETHERLANDS)

p13 Using PCA and Clustering analysis methods to evaluate different mixes for growing media assessment (A case study for palm date substrates) Majid Basirat (Soil and Water Research Institute, Karaj, IRAN)

p14 Determination of potassium concentration in hydroponically grown lavender in perlite Antonios Chrysargyris (Cyprus University of Technology, CYPRUS)

p15 Seed germination and oxygen uptake rate (OUR) tests in coco-peat marketed in Italy Laura Crippa (University of Milan, ITALY)

p16 Valorization of crushed bricks as a substrate component for the production of potted herbs Henrique Ribeiro (Technical University of Lisbon, PORTUGAL)

10.30-11.00 COFFEE BREAK

Chair: Hans Verhagen

o18 11.00-12.30 Application of a Simplified Soilless Culture System Using Controlled-release Fertilizer to Tomato Production on Farmlands Damaged by the Great East Japan Earthquake in Northern Japan Takafumi Kinoshita (National Agriculture and Food Research Organization, JAPAN)

o19 Organic Fertilisers and Nitrogen Availability Chris Blok (Wageningen University and Research Centre, THE NETHERLANDS)



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o20		Solution ammonium:nitrate ratio and cation/anion uptake affect acidity or basicity with floriculture species in hydroponics	Ryan Dickson (University of Florida, USA)
o21		The Response of Pelargonium to Different Growing Media and Liquid Fertilizers - An Experimental Comparison	Gracie Barrett (Royal Horticultural Society, UK)
o21a		A rice-chaff and soil composite helps Komatsuna (<i>Brassica rapa</i> var <i>perviridis</i>) survive in a high-concentrated salt solution	Uzuki Matsushima, Iwate University, Japan
p17	12.30-12.50	Analyzing carbon fraction of growing media by near-infrared spectroscopy	Dieter Lohr (Weihenstephan-Triesdorf University of Applied Sciences, GERMANY)
p18		Possibility of used new eco-materials based on polyphosphate glass in agriculture	Ana M.Vujošević (Institute for technology of nuclear and other mineral raw materials, SERBIA)
p19		A material flow analysis of nutrients to determine the potential of wastes to improve soil fertility in Busia District, Uganda	Jakob Lederer (Vienna University of Technology, AUSTRIA)
p20		Urban Waste as Container Media in a Rooftop Garden Experiment	Baptiste J.-P. Grard (University ParisSud - CNRS, FRANCE)
p21		Production and use of Sphagnum biomass as a plant substrate in greenhouse	Olli Reinikainen (Vapo Ltd., FINLAND)
12.50-14.00		LUNCH	
Chair: Brian Jackson			
o22	14.00-15.00	A Step Toward Understanding Dynamic Properties of Soilless Substrates	James S. Owen (Virginia Tech, USA)
o23		Growing media constituents used in the EU - an update	Gerald Schmilewski (Klasmann-Deilmann, GERMANY)
o24		Quality Control of Growing Media for the Retail Market	William R. Carlile (Bord na Mona Research Centre, IRELAND)
o25a		Back to the roots - the Art of Composting and the Humus Challenge	Florian Amlinger (Compost - Development and Consultancy, AUSTRIA)
p22	15.00-15.20	Evaluation of almond shells as covering material and minor component in substrates for young plants	Costantino Cattivello (ERSA FVG, Substrates Laboratory, ITALY)
p23		Effect of cocoa pod husk mulch on ornamental quality of bedding plants and soil chemical properties in short growing season	Olesja Korotkova (Estonian University of Life Sciences, ESTONIA)
p24		Substrate depth greatly influences vegetation development on extensive green roofs in a Mediterranean and temperate maritime climate	Oliver Grunert (Peltracom, BELGIUM)



p25 To Which Extent Do The Physical and Chemical Properties of The Horticultural Substrates Affect The Seed Germination and Plant Development Rabab Sanoubar (University of Bologna, ITALY)

p26 Effects of two nitrogen enriched biochars on barley grown on peat: preliminary observations Floriana Bedussi (University of Milan, ITALY)

15.20-15.45 COFFEE BREAK

Chair: Andreas Baumgarten

o26 15.45-17.00 Vermiculite and calcined clay components decrease iron/manganese toxicity symptoms in seed geranium at low pH in a peat-based substrate Paul Fisher (University of Florida, USA)

o27 Pyrolytic combustion analysis of carbon - A new approach for characterizing growing media Dieter Lohr (Weihenstephan-Triesdorf University of Applied Sciences, GERMANY)

o28 Evaluation of physicochemical characteristics of invasive Acacia waste cocomposted with pine bark for horticultural use Luis Miguel Brito (CIMO, Escola Superior Agrária, IPVC, PORTUGAL)

o29 Producing Greenhouse Potted Blue Hydrangea Using Subirrigation Youbin Zheng (University of Guelph, CANADA)

18.30 Invitation by Klasmann-Deilmann: an evening at the Vienna Heurigen

Wednesday, 9th September

EXCURSION

8.30 Departure

9.00 - 12.00 Visit of the composting plant of the city of Vienna
Visit of the COMPO/terrasan Growing Media production site "Schafflerhof"

12.00-14.00 Visit of the „practitioners day“ at the composting plant Szihn, Münchendorf, including lunch

15:00-18.00 Research and Training Centre for Horticulture, Schönbrunn: main campus at Grünbergstraße, research facility at Jägerhausgasse

18.00 Dinner at the „Blauer Salon“, Gartenbauschule Schönbrunn

Thursday, 10th September

Chair: Gerald Schmilewski

keynote 9.00-9.30 **Overcoming physical limitations in alternative growing media with and without peat** Jean Caron (University Laval, CANADA)



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o30	9.30-10.15	Evolution of Hydraulic Properties of Organic Substrates during Cultivation according to Irrigation Strategies and Root Growth	Jean-Charles Michel (Agrocampus Ouest, FRANCE)
o31		Analysis of Water Uptake of Growing Media on the Relation to Water Uptake in Horticultural Practice	Hans Verhagen (Stichting RHP, THE NETHERLANDS)
o32		Wetting Agent Effects on Plant Growth	M. Reza Nematı (Fafard et Frères, CANADA)
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p27	10.15-10.30	Changes in volume (quantity) by mixing components: trials on a small-scale and on a full-scale (factory)	Patrizia Zaccheo (University of Milan, ITALY)
p28		Wetting agent addition to reduce hydrophobicity and maintain water retention in peat substrates	Jean-Charles Michel (Agrocampus Ouest, FRANCE)
p29		Effect of Growing Medium and Fertigation Management on Soilless Strawberry Quantitative and Qualitative Traits	Paolo Zucchi (Fondazione Edmund Mach, ITALY)
p30		Relationship between particle size distribution and drying up and selected physical properties of substrates commercialized in Brazil	Rosane Días (University of Coruña, SPAIN)
p30a		Testing of peat reduction in substrates since 2010	Andreas Fellner (Federal Research Station for Horticulture, AUSTRIA)
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10.30-11.00		COFFEE BREAK	
Chair: Jean Caron			
o34	11.00-12.30	Water content in Culture related to Physical Characteristics of Growing Media	Hans Verhagen (Stichting RHP, THE NETHERLANDS)
o35		Classification of organic substrates' wettability from contact angle measurements and hydration efficiency tests	Jean-Charles Michel (Agrocampus Ouest, FRANCE)
o36		Utilizing the HYDRUS Model as a Tool for Understanding Soilless Substrate Water Dynamics	Jeb S. Fields (Virginia Tech, USA)
o37		Influence of Wood Fiber Additions to Peat-based Substrates on Root Growth of Greenhouse-grown Annuals	Pierre-Marc de Champlain (North Carolina State University, USA)
o38		The effect of moisture content on fraction recovery from sod moss and bin sods and the development of a rapid field test for moisture determination of sod moss and bin sods	Munoo Prasad (Bord na Móna Research Centre, IRELAND)
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12.30-13.30		LUNCH	
Chair: Jean Charles Michel			



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o39	13.30-14.30	Evaluating Substrate Performance to Design Better Performing Green Roof Growing Mixes	John Rayner (University of Melbourne, AUSTRALIA)
o40		Optimizing Urban Tree Soil Substrate for the City of Vienna	Erwin Murer (Austrian Soil Science Society, AUSTRIA)
o41		New Substrates for Gravel Beds in the Viennese Region	Stefan Schmidt (School and Research Centre for Horticulture Schönbrunn, AUSTRIA)
	14.30-15.30	COFFEE BREAK, Symposium Group Photo	
Chair: Paul Alexander			
o42	15.30-18.00	Pine Wood Chip Aggregates for Greenhouse Substrates: Effect of Wood Age on Plant Growth	Brian Jackson (North Carolina State University, USA)
o43		Effect of Elemental Sulfur and Nitrogen Form on Substrate pH and Growth of Calibrachoa in Growing Media Containing Compost High in Carbonate	Susanne Amberger-Ochsenbauer (Weihestephan-Triesdorf University of Applied Sciences, GERMANY)
o44		Importance of Peat for Whisky Production	Neil M. Godsman (Sphagnum Products, UK)
o45		Introduction to selected whisk(e)ys: Glenfarclas 21yr (Speyside), Connemara peated (Ireland), Ardbeg 10yr (Islay)	Bernhard Reims, Alexander Mooshammer (Potstill Austria)
	18.00-19.30	ISHS business meetings	
	20.00	Symposium Dinner	
Friday 11th September			
Chair: William R. Carlile			
keynote	9.00-9.30	Current developments in the analysis of biological properties of GM and their constituents and their relevance for sustainability issues	Beatrix Alsanus (Swedish University of Agricultural Sciences, SWEDEN)
p31	9.30-10.30	Caroá (Neoglaziovia variegata) Inoculated with Plant Growth Promoting Bacteria in Different Substrates	Janie Mendes Jasmim (Universidade Estadual do Norte Fluminense Darcy Ribeiro, BRASIL)
p32		Production of Baby Leaf Vegetables in Rice Seedling Growing Pad and Commercial Soil Mixtures	Il-Seop Kim (ChunChon Kangwon University, KOREA)
p33		Use of Coir Fiber Substrates for Tomato Transplants Production	Francesco Pica (Università Politecnica delle Marche, ITALY)
p34		Changes in Nitrogen Partitioning to Inflorescence and Pseudobulbs during Various Growth Stages of Oncidium Gower Ramsey	Yao-Chien Alex Chang (National Taiwan University, TAIWAN)



p35	Use of ergosterol as an indicator for colonization of peat based growing media by saprophytic fungi	Dieter Lohr (Weihenstephan-Triesdorf University of Applied Sciences, GERMANY)
p36	Development of pepper seedlings in response to the application of doses of tannery sludge and conventional substrate	Paulo Cesar Santos (Universidade Estadual do Norte Fluminense Darcy Ribeiro, BRAZIL)
p37	Ammonium Conversion in Liquid Organic Fertilisers	Chris Blok (Wageningen University and Research Centre, THE NETHERLANDS)
p38	Soil fertility recovery effects of vegetable residues on organic soil substrate with continuous cultivation in solar greenhouse	He Chaoxing (Chinese Academy of Agricultural Sciences, CHINA)
p39	Plant biomass from heathland management:: a possible peat substitute?	Heike Bohne (Leibniz University of Hannover, GERMANY)
p40	Tannery sludge effects on growth and nutrition of eucalyptus seedlings (<i>Eucalyptus urograndis</i>)	Paulo Cesar Santos (Universidade Estadual do Norte Fluminense Darcy Ribeiro, BRAZIL)
p41	Compost-based substrate for <i>Gazania rigens</i> (L.) cultivation	Francesco Giuffrida (Catania University, ITALY)
o50p	Hydrochars as peat substitute in growing media for organically grown potted herbs	Dieter Neumaier (Weihenstephan-Triesdorf University of Applied Sciences, GERMANY)

10.30-11.00 COFFEE BREAK

Chair: Beatrix Alsanus

o46	11.00-12.00	Loofah and Coconut Fiber Substrates Interaction with Growth Promoting Bacteria on <i>Cattleya harrisoniana</i> and <i>C. granulosa</i>	Janie Mendes Jasmim (Universidade Estadual do Norte Fluminense Darcy Ribeiro, BRASIL)
o47		High-throughput sequencing analysis provides a comprehensive insight into the complex bacterial relationships in horticultural substrates	Oliver Grunert (Peltracom, BELGIUM)
o48		Use of beneficial micro-organisms as a means to control <i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i> in two local tomato accessions in Greece	Dimitrios Savvas (Agricultural University of Athens, GREECE)
o49		Colonization of growing media by saprophytic fungi - Importance of carbon and nitrogen fractions	Elke Meinken (Weihenstephan-Triesdorf University of Applied Sciences, GERMANY)

12.00-13.15 LUNCH

Chair: Elke Meinken

o51	13.15-14.00	Biochar as peat amendment to reduce the use of fertilizers and fungicides in strawberry production?	Jane Debode (ILVO, Plant Sciences Unit, BELGIUM)
o52		Applications and limitations to use of rice hull biochar in container substrates	James Altland (United States Department of Agriculture, USA)



Chair: Andreas Baumgarten

14.00-15.30 Debate: Sustainability in Horticulture: What can we contribute?

15.30 - 16.00 Summing up and closure of the symposium
