

SCIENTIFIC PROGRAMME

Sunday 16 June

17:00 - 21:00 Welcome cocktail, Registration and Poster display

Monday 17 June

08:00 - 09:00 Registration and Poster display

09:00 - 10:10 Opening ceremony
Musical opening - Conservatory E. R. Duni Matera
Cristos Xiloyannis and Bartolomeo Dichio
Conveners
Governmental Institutions

Evelyne Costes
ISHS delegate

Massimo Tagliavini
Chair of Italian Society for Horticultural Science

Opening Lecture: Matera as a model city in water cycle, collection and storage, example of resilience

Pietro Laureano
UNESCO consultant

ORAL SESSIONS

SESSION 1. Climate and water resource perspectives: social and economic aspects

Chair Olcay Unver (UN Water, FAO)

10:15 - 12:35 **KEYNOTE LECTURES**

Water resources: challenges of the water-energy-food nexus
Felix Reinders (ICID)
President of International Commission on Irrigation and Drainage

Climate futures: using scenarios to support practical land and water resilience-building measures for adapting to climate shifts and extreme
Rachael Mc Donnell (IWMI)
Principal Researcher at International Water Management Institute

COFFEE BREAK

Solutions to adapt to climate change: Governance and strategies of water resource management and infrastructures

Fathi Lebdi (FAO)

Agricultural Water for Africa Coordinator chez United Nations FAO

Constrains for an effective innovation transfer of water management and technologies in the Mediterranean region

Nicola Lamaddalena (CIHEAM IAM)

Head of the Land and Water Department – CIHEAM Bari Institute

Drought Preparedness at the UNCCD

Daniel Tsegai (UNCCD)

Programme Officer at United Nations Convention to combat Desertification

Water footprinting: assessments, impacts and economic perspectives

Brent Clothier (*Plant and Food Research*)

(A. Al-Muaini, S. Green, A. Dakheel, O. Sallam, M. Dawoud, M. Al-Tamimi, A. AlSahrouf, L. Kennedy, P. Kemp)

12:45 - 13:00 Group Picture of the Symposium

13:00 - 14:00 **LUNCH**

SESSION 2. Non conventional water use: saline and urban wastewater

Chair Alon Ben Gal

14:00 - 14:20 **KEYNOTE LECTURE**

Long-term irrigation olive orchard with reclaimed wastewater

Arnon. Dag¹, R. Erel², A. Ben-Gal², I. Zipori², U. Yermiyahu²

¹*Agricultural Research Organization ARO, Israel;* ²*Gilat Research Center, Israel*

14:20 – 15:00

ORAL PRESENTATIONS

Treating water for reuse: testing an adoption decision-making model with nursery and greenhouse growers

A. Lamm¹, L. Warner², A. Tidwell¹, K. Lamm¹

¹University of Georgia, United States of America; ²University of Florida, United States of America

U.S. consumer perceptions of water sources and uses regarding production and enjoyment of ornamental plants

B. Behe¹, M. Knuth², C. Hall², P. Huddleston¹, T. Fernandez¹, L. Sage¹

¹University of Michigan, United States of America; ²Texas AM University, United States of America

Saline reclaimed water and deficit irrigation strategy affected eco-physiological traits in almond trees under Mediterranean conditions

G.A. Vivaldi¹, S. Camposeo¹, G. Lopriore², C. Romero-Trigueros¹, F.P. Salcedo³, E. Nicolas³

¹University of Bari, Italy; ²University of Foggia, Italy; ³Campus Universitario de Espinardo, Spain

Human faecal bacteria endophytic load and heavy metal concentration in apple and nectarine tree irrigated with secondary treated wastewater

G.D. Perulli¹, F. Gaggi¹, L. Baffoni¹, D. Di Gioia¹, G. Sorrenti¹, L. Manfrini¹, K. Bresilla¹, A. Boini¹, F. Spinelli¹, I. Donati¹, L. Corelli Grappadelli¹, B. Morandi¹

¹University of Bologna, Italy

15:00- 16:00

POSTER VIEWING SESSIONS 1-2-3 and coffee break

SESSION 3. Evapotranspiration, irrigation requirement and modeling

Chair Donatella Spano

16:00 - 16:20

KEYNOTE LECTURE

ET of applied water and the cup+ model

Richard L. Snyder¹, M. Orang²

¹University of California, United States of America; ²USGS, United States of America

Towards modelling the impact of climate change on irrigation demand

J. Zinkernagel¹, N. Schmidt¹

Geisenheim University, Germany

An update on the theory and application of surface renewal for estimating ET

D. Spano¹, R. Snyder², K.T. Paw U²

¹*University of Sassari, Italy;* ²*University of California, United States of America*

Determining orchard specific crop coefficients for improved irrigation management in citrus

N. Taylor¹, N. Shongwe¹, T. Vahrmeijer¹, M. Banda¹, J. Annandale¹

¹*University of Pretoria, South Africa*

Using HYDRUS-1D for estimating evapotranspiration and soil water content of irrigated winter wheat under different water managements in semi-arid region of Morocco

S. Er-Raki¹, J. Ezzahar¹, C. Anbari¹, A. Amazirh¹, B. Ait Hssaine¹, S. Khabba¹, M. Fontanet², O. Merlin³

¹*University Cadi Ayyad, Morocco;* ²*Lab Ferrer, Spain;* ³*CESBIO, France*

Water requirements and crop coefficient for low-chill peach trees in subtropical climates

C. Zambrano-Vaca¹, L. Zotarelli¹, K. Migliaccio¹, R. Beeson Jr¹, J. Chaparro¹, M. Olmstead¹

¹*University of Florida, United States of America*

Sassi guided walking tour

SESSION 4. Water relations, soil and plant water stress assessment

Chair Bartolomeo Dichio

08:30 – 08:50 **KEYNOTE LECTURE**

Assessing soil and plant water status for irrigation management

Elias Fereres

IAS-CSIC and UCO, Spain

08:50 – 09:50 **ORAL PRESENTATIONS**

Physiological responses of radish (*Raphanus sativus* L.) to controlled water limitations – Potential effects on tuber quality and shelf life

W.B. Herppich¹, M. Linke¹, S. Landahl²

¹*Leibniz-Inst. Agricult. Eng. Potsdam-Bornim, Germany;* ²*Cranfield University, United Kingdom*

Effects of two covering nets on water use efficiency and production in California nectarine cultivar

P. Losciale¹, L. Gaeta¹, P. Campi¹, R. Perniola², L. Tarricone²

¹*University of Bari, Italy;* ²*CRA-Utv-CREA, Italy*

Tolerance of different olive cultivars to salt stress

L. Regni¹, A.M. Del Pino¹, S. Mousavi², C.A. Palmerini¹

L. Baldoni², R. Mariotti², H. Mairech¹, R. Calisti¹, P. Proietti¹

¹*University of Perugia, Italy;* ²*IBBR-UOS, Italy*

Sap flow and diameter variation in apple tree with different water supply in pre- and post-harvest

E. Xylogiannis¹, S. Green², A.N. Mininni³, B. Dichio³, B. Clothier²

¹*Zespri International, Italy;* ²*Plant and Food Research, New Zealand;*

³*University of Basilicata, Italy*

Learning from the past to improve the future: tree-ring as a retrospective tool to investigate orchard irrigation management

G.D. Perulli¹, R.L. Peters², L.C. Grappadelli¹, L. Manfrini¹, P. Cherubini²

¹*University of Bologna, Italy;* ²*Federal Forest, Snow and Landscape Research Institute WSL, Switzerland*

Development of baseline data for using mid-day stem water potential for olive

L. Milliron¹, W. Krueger¹, A. Fulton¹, R. Rosecrance¹

¹University of California, United States of America

COFFEE BREAK

SESSION 5. Sensing technologies relevant to the precision irrigation

Chair Joan Girona

10:45 - 11:05

KEYNOTE LECTURE

Plant-based sensing for irrigation management in the field

A.N. Lakso¹, D. Intrigliolo²

¹Cornell AgriTech, United States of America; ²CSIC, Spain

11:05 - 12:25

ORAL PRESENTATIONS

Assessment of canopy transpiration from temperature: applications

for almond orchards

M.V. Gonzalez-Dugo¹, M. Lopez-Lopez¹, M. Espadafo², F. Orgaz¹, L. Testi¹, P. Zarco-Tejada¹, I. Lorite², E. Fereres¹

¹IAS-CSIC, Spain; ²IFAPA, Spain

Precision drip irrigation for horticulture: methods for managing spatial

variability from vineyard and orchard trials in Israel

A. Ben-Gal¹, A. Peeters², N. Ohana-Levi¹, Y. Nezer³, I. Bahat⁴, L. Katz⁵, A. Naor⁵, Y. Cohen⁶

¹Gilat Research Center, Israel, ²TerraVision Lab, Israel; ³Eastern R&D Center, Israel, ⁴The Hebrew University of Jerusalem, Israel; ⁵Northern Agricultural RD, Israel; ⁶Institute for Agricultural Engineering, Israel

Using a decision support system (Vintel) to determine the relationship

between soil water content and whole-grapevine transpiration

G. Lopez¹, C. Becel¹, R. Bourget¹, J. Chopard¹, D. Fumey¹, A. Guaus¹, P. Hublart¹, M. Gelly²

¹ITK, France; ²AgIrrig, France

Water stress mapping using low-cost thermal sensors mounted on an

All-Terrain Vehicle (ATV)

C. Poblete-Echeverría¹, M. Zuñiga², S. Ortega-Farías²

¹University of Stellenbosch, South Africa; ²Universidad de Talca, Chile

Estimation of the spatial and temporal variability of evapotranspiration components in a vineyard with the two source energy balance model (TSEB) using both thermal airborne and the fusion of Sentinel 2 and 3 imagery

J. Bellvert Ríos¹, C. Jofre¹, M. Mata¹, A. Pelechà¹, H. Nieto¹

¹IRTA, Spain

Scheduling regulated deficit irrigation in olive using leaf turgor measurements: another twist for the method

C.M. Padilla Díaz¹, F.S. Lauriks¹, M.V. Cuevas², J.E. Fernández²,

A. Diaz-Espejo², K. Steppe¹

¹Laboratory of Plant Ecology, Belgium; ²CSIC, Spain

Recent developments of the DIDAS program

G. Communar¹, A. Gamliel¹, S.P. Friedman¹

¹Institute of Soil, Water and Environmental Sciences, Israel

Mapping Evapotranspiration by combining Optical/Microwave remote

sensing data (multi-resolution) and surface-atmosphere exchange modeling

B. Ait Hssaine¹, O. Merlin², J. Ezzahar¹, N. Ojha², S. Khabba¹, S. Er-Raki¹

¹University Cadi Ayyad, Morocco; ²CESBIO, France

13:00 - 14:00

LUNCH

SESSION 6 I. Tree crop irrigation management (drought and fruit quality)

Chair Ian Goodwin

14:00 - 14:20

KEYNOTE LECTURE

Tree water use and irrigation management for salinity and drought

Steve Green¹, A. Al-Muaini², M. Dawoud², B. Lumumba³,

M. Mosmarck³, T. Lowe⁴, M. Black⁴, B. Clothier¹

¹Plant and Food Research, New Zealand; ²Environment Agency - Abu Dhabi (EAD), United Arab Emirates; ³Olivado Kenya (EPZ) Ltd, Kenya; ⁴Zespri International, New Zealand

Assessing crop water productivity and water saving in an orchard under precise irrigation: risks from ambiguous terminology and simplified concepts

J.E. Fernandez¹, A. Diaz-Espejo¹, V. Hernandez-Santana¹, M.V. Cuevas¹

¹*IRNAS-CSIC, Spain*

Establishing the appropriate drip irrigation agronomic design for optimizing crop performance and water use efficiency in woody perennial crops

D. Intrigliolo¹, M.A. Martinez-Gimeno², J.S. Rubio-Asensio¹, I. Buesa³, E. Badal², L. Bonet², M. Parra¹

¹*CEBAS-CSIC, Spain*; ²*IVIA, Spain*; ³*INRA-ISVV, France*

Improving the management of localized irrigation method to increase its efficiency in a Mediterranean kiwifruit orchard

G. Montanaro¹, D. Laterza¹, Alba N. Mininni¹, B. Dichio¹, C. Xiloyannis¹

¹*University of Basilicata, Italy*

Effects of climatic variables on water use efficiency of an apple orchard

D. Zanotelli¹, L. Montagnani¹, C. Andreotti¹, M. Tagliavini¹

¹*Free University of Bolzano-Bozen, Italy*

Evaluation of water footprint for table olive groves of *Olea europaea*

L. – cv. Conservolea

K. Fotia¹, I. Tsirogiannis², P. Baltzoi², P. Barouchas³, N. Malamos³, N. Mantzos², K. Zisis², C. Koliopanos², G.D. Nanos¹

¹*University of Thessaly, Greece*; ²*University of Ioannina, Greece*; ³*TEI of Western Greece, Greece*

Improving water use efficiency in irrigated orchards - The LIFE + AGROCLIMAWATER case study

N.N. Kourgialas¹, G. Morianou¹, G. Psarras¹, G. Koubouris¹, G. Sismani¹,

V. Pisinaras¹, G. Arampatzis¹

¹*H.A.O - DIMITRA, N.AG.RE.F., Greece*

Effects of different irrigation regimes on vegetative growth, yield and fruit quality of young pomegranate (*Punica granatum L.*) trees cv. 'Wonderful'

A. Tarantino¹, G. Disciglio¹, L. Frabboni¹, G. Difonzo², V. M. Paradiso², G. Gambacorta², G. Lopriore¹

¹University of Foggia, Italy; ²University of Bari, Italy

COFFEE BREAK

SESSION 6 II. Tree crop irrigation management (drought and fruit quality)

Chair Enrique Fernandez

16:15 – 17:45

ORAL PRESENTATIONS

The effects of water deficits on fruit cracking and sunburn damage in

Cripps Pink apple

I. Goodwin¹, L. McClymont¹, S. Green²

¹University of Queensland, Australia; ²Plant and Food Research, New Zealand

Analysis of deficit irrigation strategies for almonds

J. Girona¹

¹IRTA, Spain

Sustainable strategy of irrigation in fruit orchards: environmental impact at sub-basin level

Alba N. Mininni¹, F. Manicone¹, T. Berloco¹, C. Fausto¹, B. Dichio¹, C. Xiloyannis¹

¹University of Basilicata, Italy

Timely water deficit in 'honeycrisp' apple reduces bitter pit incidence with little impact on fruit quality

M. Reid¹, L. Kalcsits¹

¹University of Washington, United States of America

Optimization of the irrigation schedule in field-grown strawberry results in higher water use efficiency and improved taste quality

P. Janssens¹, M. Boonen², D. Bylemans³, P. Melis⁴, T. Van Delm⁴, M. Herog³, I. Vendel³, H. Vandendriessche³

¹SSB Horticulture Research International, Belgium; ²PCFruit vzw, Belgium;

³KU Leuven, Belgium; ⁴Proefcentrum Hoogstraten vzw, Belgium

Irrigation levels and proline application effects on morphological characteristics of strawberry

M.A. Saridas¹, B. Kapur¹, E. Celiktopuz¹, F. Aksoy¹, S. Paydas Kargi¹

¹University of Cukurova, Turkey

Nitrogen (N) application needs to meet irrigation demands or it will compromise almond vitality and productivity

O. Sperling¹, R. Karunakaran¹, U. Yermiyahu¹

¹Agricultural Research Organization ARO, Israel

18:00 – 19:00

POSTER VIEWING SESSIONS 4-5-6

20:30

GALA DINNER at the terrace of “Le Monacelle” Hotel



Wednesday 19 June

7:00 - 20:30 Technical excursion day

Thursday 20 June

PARALLEL SESSION 7. Vineyard irrigation: grape and wine quality (room B203)

Chairs Vitale Nuzzo, Samuel Ortega

08:30 - 08:50 **KEYNOTE LECTURE**

Vineyard irrigation: grape and wine quality

Simone Castellarin

University of British Columbia, Canada

08:50 - 10:10 **ORAL PRESENTATIONS**

Partial root drying and other strategies for reducing irrigation water

consumption in Chilean vineyards without affecting water status, yield

and wine quality

P. Gil¹, D. Cea¹, D. Knopp¹, C. Bonomelli¹, V. Mackenna¹, N. Brossard¹, E. Bordeu¹

¹*University of Chile, Chile*

Sustainable irrigation strategy on organic Red Globe table grape in Apulia region

L. Tarricone¹, S.H.B. Al-Fadheel², D. Di Gennaro¹, G. Gentile¹, A.M. Amendolagine¹, V. Verrastro³

¹*Research Centre for Viticulture and Enology, Italy*; ²*University of Napoli, Italy*;

³*CIHEAM Bari, Italy*

Effects of different deficit irrigation strategies on yield components and must quality of cv. Touriga Franca (*Vitis vinifera* L.) under Mediterranean climate conditions in Douro Region

I. Cabral¹, A. Carneiro¹, T. Nogueira², J. Queiroz¹

¹*University of Porto, Portugal*; ²*Engenheiro Agricola, Portugal*

Increasing yield and water use efficiency in wine grape vineyards with variable rate drip irrigation

L.A. Sanchez¹, B. Sams¹, N. Dokoozlian¹

¹*EJ Gallo Winery, United States of America*

Combined effects of rootstock and irrigation on gas exchange, fruit quality and yield in 'Merlot' and 'Sangiovese' grapevines

G. Caruso¹, G. Palai¹, G. Rossi¹, S. Nesi¹, R. Gucci¹, C. D'Onofrio¹

¹*University of Pisa, Italy*

Relations between factors affecting water consumption of *Vitis vinifera* cv. 'Cabernet Sauvignon'

Y. Netzer¹, S. Munitz², N. Ohana-Levi³, S. Amnon²

¹*Ariel University, Israel*; ²*The Hebrew University of Jerusalem, Israel*;

³*Gilat Research Center, Israel*

Silicon-mediated enhanced water stress tolerance in potted *Vitis vinifera* plants

D. Amato¹, F. Attia², V. Nuzzo¹, G. Montanaro¹, S. Summerer³

¹*University of Basilicata, Italy*; ²*Equipe Recherches Agronomiques, France*;

³*Metapontum Agrobios, Italy*

PARALLEL SESSION 8. Irrigation of annual crops and ornamental plants – open field and greenhouses (room C204)

Chair Antonio Elia

08:30 - 08:50

KEYNOTE LECTURE

Irrigation to crop demand and minimize leaching: how to achieve this mandatory requirement for soil-grown vegetable and cut-flower greenhouse crops in the Netherlands

Wim Voogt

Wageningen University and Research, Netherlands

08:50 - 10:20

ORAL PRESENTATIONS

Productive and non-productive use of water of common bean under full and deficit irrigation

A. Lipovac¹, R. Stricevic¹, M. Cosic¹, N. Djurovic¹

¹*University of Belgrade, Serbia*

Agronomical effects and response of growers in the application of the DSS GesCoN at commercial farms scale

A. Elia¹, G. Conversa¹, C. Lazzizzera¹

¹*University of Foggia, Italy*

Commercial yield response of iceberg lettuce (*Lactuca sativa* L. var. capitata) to water irrigation at a cool semi-arid climate of Maipo Valley, Santiago, Chile

A. Antunez¹, C. Blanco¹, S. Felmer¹, M. Vidal¹, R. Morales¹

¹*Instituto de Investigaciones Agropecuarias, Chile*

Broomrape (*Phenilpanche* and *orobanche* spp.) management in Israel using drip herbigation

Hanan Eizenberg

¹*Agricultural Research Organization ARO, Israel*

Assessing the optimal timing of partial root-zone drying alternation in tomato crops under furrow irrigation

J. Puertolas¹, S. Yeboah², P. Oteng-Darko², B. Annor², I.C. Dodd¹

¹*Lancaster University, United Kingdom*; ²*Crop Research Institute - CSIR, Ghana*

Potential reuse of drainage solutions from three soilless crops grown under Mediterranean conditions

M. Santos¹, M. Lourenço¹, R. Pereira¹, S. Carvalho¹

¹*ISA, Portugal*

Water use and evapotranspiration estimates at a California container plant nursery

B. Pitton¹, G. Johnson², L. Oki¹, D. Haver²

¹*University of California, United States of America*; ²*South Coast Research and Extension Center, United States of America*

Developing an automated leaching fraction-based irrigation schedule for nursery crops

L. Fessler¹, W. Wright¹, J. McHugh¹, Q. Cypher¹, A. Fulcher¹, X. Sun¹

¹*University of Tennessee, United States of America*

Optimizing irrigation set-points for the growth and quality of two *Chrysanthemum morifolium* cultivars in two soilless substrates

J.D. Lea-Cox¹, B. Belayneh¹, A. Ristvey¹

¹*University of Maryland, United States of America*

10:30 – 11:30

POSTER VIEWING SESSIONS 7-8 and coffee break

13:30 – 15:00

LUNCH

15:00 – 16:00

ISHS BUSINESS MEETING AND YOUNG MIND AWARDS

POSTER SESSIONS

SESSION 1. Climate and water resource perspectives: social and economic aspects

15:10 - 16:00

PS1-01 Profitability and regional differences of irrigated sweet corn in Hungary

I.E. Berczi¹, E. Vári¹, A. Kis^{1,2}, S. Németh¹, F. Apáti²

¹Association of Hungarian Small Holders and Cooperative, Hungary;

²University of Debrecen, Hungary

PS1-02 Drip line size selection in micro irrigation design for tree crops: economic and energetic sustainability

R. Tomasone¹, P. Menesatti¹, M. Pagano¹, G. Sperandio¹, C. Cedrola¹, A. Acampora¹, P. Santelli¹

¹CREA, Italy

PS1-03 Olive yield response to irrigation under climate change scenarios

A. López-Bernal¹, H. Mairech², L. Testi², F. Villalobos²

¹Universidad de Córdoba, Spain; ²CSIC, Spain

PS1-04 Water conservation expertise and Involvement Influence plant purchases and enjoyment of U.S. consumers

B. Behe¹, M. Knuth², C. Hall², P. Huddleston¹, T. Fernandez¹, L. Sage¹

¹Michigan State University, United States of America; ²Texas AM University, United States of America

PS1-05 Soil hydrology research platform underpinning innovation to manage water scarcity in European & Chinese cropping systems

E. Plaas¹, G. Quaranta², R. Salvia², F. Zhong³, A.S. Montero⁴,

J. Gomez⁴, W. Xu³

¹University of Göttingen, Germany; ²University of Basilicata, Italy; ³Nanjing Agricultural University, China; ⁴IAS-CSIC, Spain

SESSION 2. Non conventional water use: saline and urban wastewater

15:10 - 16:00

PS2-01 Feasibility of tertiary treated wastewater reuse in the irrigation of grapes and olives

C. Salerno¹, P. Vergine¹, G. Berardi¹, G. Pappagallo¹, A. Pollice¹

¹University of Bari, Italy

PS2-02 Process energy analysis for the agricultural reuse of industrial wastewaters

T. Perri¹, M. Oriolo¹, M. Capocelli²

¹Eni Foundation Enrico Mattei, Italy; ²University Campus Biomedico, Italy

PS2-03 Interactions of fertilizer and chemical sanitizing agents in water

P. Fisher¹, G. Mohammad-Pour¹

¹University of Florida, United States of America

PS2-04 Remediation of phytopathogen contaminants from irrigation runoff using floating treatment wetlands

S. White¹, N.L. Bell², J.C. Majsztrik², S.N. Jeffers¹, D.R. Hitchcock³

¹Poole Ag Center, United States of America; ²Westinghouse Rd, United States of America; ³Baruch Institute of Coastal Ecology Fores, United States of America

PS2-05 Are farmers willing to use urban wastewater for irrigation? Results from a survey to Apulian irrigators

G. Gannoccaro¹, R. Sardaro¹, R. de Vito¹, L. Roselli¹, B. de Gennaro¹

¹University of Bari, Italy

PS2-06 Physiological changes of grapefruit trees irrigated with saline reclaimed water combined with deficit irrigation detected by multispectral images

G.A. Vivaldi¹, C.R. Trigueros¹, J.M. Bayona Gambín², A.B. Mira García², A. Ottaviano¹, P.A. Nortes Tortosa², J.J. Alarcón Cabañero², E. Nicolás²

¹University of Bari, Italy; ²Campus Universitario de Espinardo, Spain

PS2-07 Preliminary assessment of using nitrates and potassium probes for sustainable management of fertigation with reclaimed water in citrus

A.B. Mira García¹, E. Nicolás¹, P. Nortes¹, J.M. Bayona¹

¹CEBAS-CSIC, Spain

PS2-08 The potential role of arbuscular mycorrhizae fungi and mixed substrate in the physiological and agronomical behaviour of tomato plants irrigated with saline reclaimed wastewater

M.J. Gómez Bellot¹, B. Lorente¹, I. Zugasti¹, P.A. Nortes¹,

M.J. Sánchez Blanco¹, M.F. Ortuño¹, J.J. Alarcón¹

¹CEBAS-CSIC, Spain

PS2-09 Agrichemical remediation from runoff water using bioreactors

D. Kort¹, D. Abdi¹, F. Hinz², C. Wilson², J. Owen³, J. Brindley³, A. Paulk³, B. Cregg¹, T. Fernandez¹

¹University of Michigan, United States of America; ²University of Florida, United States of America; ³University of Virginia, United States of America

PS2-10 Tolerance and physiological response of young *Ficus carica* L. plants irrigated with saline water

G. Palai¹, G. Caruso¹, C. D'Onofrio¹, R. Gucci¹

¹University of Pisa, Italy

SESSION 3. Evapotranspiration, irrigation requirement and modeling

15:10 – 16:00

PS3-01 Evapotranspiration and crop coefficients of micro-irrigated pistachio orchards grown on non-saline and increasingly saline soils in the San Joaquin Valley of California

D. Zaccaria¹, G. Marino¹, B. Sanden², B. Lampinen¹, S. Grattan¹, K. Bali³, R. Snyder¹

¹University of California, United States of America; ²Cooperative Extension Kern County, United States of America; ³Kearney Agricultural Research Extension, United States of America

PS3-02 Microclimatic drivers of leaf and tree transpiration and water use efficiency for low to high canopy cover irrigated apple orchards in two production regions of South Africa

S. Midgley¹, S. Zirebwa¹, S. Dzikiti², N. Taylor³, T. Volschenk⁴, M. Gush², E. Lötze¹, Z. Ntshidi², N. Mobe²

¹University of Stellenbosch, South Africa; ²CSIR, Stellenbosch, South Africa; ³University of Pretoria, South Africa; ⁴ARC, Stellenbosch, South Africa

PS3-03 Estimating the spatial variability of water needs using soil ECa, rooting depth, and fruit developmental stage in sweet cherry orchard

N. Tsoulias¹, W.B. Herppich¹, S. Fountas², M. Zude-Sasse¹

¹Leibniz-Inst. Agric. Eng. Bioecon., Germany; ²Agricultural University of Athens, Greece

PS3-04 Surface energy flux measurements over a drip-irrigated young almond orchard

R. López-Urrea¹, L. Simón², J.M. Sánchez³, L. Martínez⁴, F. Valentin⁴
¹ITAP, Spain; ²Parque Empresarial Campollano, Spain; ³UCLM, Spain; ⁴ITAP, Spain

PS3-05 Evapotranspiration of a rainfed sweet cherry orchard in Eastern Free State, South Africa

P.C. Tharaga¹, W. Tesfahuney¹, G. Coetzer¹, M. Savage²
¹University of the Free State, South Africa; ²University of Kwa Zulu Natal, South Africa

PS3-06 Assessing evapotranspiration of mountain foothills agriculture in the south Mediterranean region using scintillometry and thermal infrared satellite data. Case of the Rheraya catchment, Morocco

J. Elfarkh¹, J. Ezzahar¹, S. Er-Raki¹, L. Jarlan², B. Hssaine¹, V. Simonneaux², S. Rachidi³, A. Brut², S. Khabba¹
¹University Cadi Ayyad, Morocco; ²CESBIO, France; ³ABHT, Morocco

PS3-07 Slope, aspect and row orientation effects on crop coefficients

R.L. Snyder¹, D. Spano², D. Zaccaria¹, G. Marino¹, L. Wunderlich³
¹University of California, United States of America; ²University of Sassari, Italy; ³UC Cooperative Extension, United States of America

PS3-08 Modelling root-zone soil moisture from observed and simulated fluxes

A. Amazirh¹, S. Er-Raki¹, O. Merlin², S. Khabba¹, L. E. Olivera Guerra², C. Mattar³
¹University Cadi Ayyad, Morocco; ²CESBIO, France; ³Laboratory for Analysis of the Biosphere, Chile

PS3-09 Evaluation of the reduction of non-beneficial evaporation losses with an anorganic mulch structure (Tree hog) in a commercial citrus orchard in the Western Cape, South Africa

E. Lötze¹, G.F.A Lötze¹, C. Jarmain¹
¹University of Stellenbosch, South Africa

PS3-10 Total evapotranspiration of apple trees with drip irrigation in high density orchard

E. Rubauskis¹, V. Berlands¹, M. Skrivele¹, V. Janson¹, V. Pole¹
¹Institute of Horticulture, Latvia

PS3-11 Estimation of Soil Surface Evaporation in Commercial Pistachio Orchards of Iran: the Case Study of Yazd Province

M.H. Rahimian¹, M Shayannejad², M. Fallah², R. Yazdani-Biouki¹, M. Karimi¹

¹National Salinity Research Center, Agricultural Research, Education and Extension Organization AREEO, Yazd, Iran; ²Isfahan University of Technology, Iran

Tuesday 18 June

POSTER SESSION 4. Water relations, soil and plant water stress assessment

18:00 – 19:00

PS4-01 Growth and yield of apple as affected by different irrigation levels at various phenological stages using drip irrigation system in North Himalayan region of India

R. Mushtaq, M. K. Sharma¹, K. Mushtaq¹, J. I. Mir², S. Ah Bhat¹, T. Ali¹, S. Narayan¹, B. Krishna³

¹SKUAST-Kashmir, India; ²ICAR-CITH, Srinagar India; ³JISL, Jalgaon Mumbai

PS4-02 Different indicators reveal dynamics of physiological limitations to water uptake in Pistachio under long-term salinity

G. Marino¹, D. Zaccaria¹, B. Sanden¹, P.T. Lima, M.L. Maskey¹, K. Shaphiro¹, R. Snyder¹

¹University of California, United States of America

PS4-03 Floral developmental failures and ovary size variability in field-grown olive trees under water deficit

H.F. Ropoport¹, D. Pérez-López², A. Centeno², V. Vega³, J. Hidalgo³, J.C. Hidalgo³

¹CSIC, Spain; ²Universidad Politécnica de Madrid, Spain; ³IFAPA, Spain

PS4-04 Transpiration reduction as an answer to water stress: models versus measurements for irrigated olive trees in South Portugal

S. Lourenço¹, N. Conceicao¹, J. Silvestre², J. Siqueira¹, F. Santos¹, I. Ferreira¹

¹ISA, Portugal; ²INIAV, Portugal;

PS4-05 Apple rootstock affects scion physiological responses to water limitations

N. Valverdi¹, L. Kalcsits¹

¹University of Washington, United States of America

PS4-06 Improving water productivity of avocado (*Persea americana* Mill.) var. Hass by using a reinforced plastic cover over the canopy at Petorca Valley, Region of Valparaíso, Chile

A. Antunez¹, V. Rojas¹, P. Gil², D. Cea², R. Ferreyra¹

¹Instituto de Investigaciones Agropecuarias, Chile; ²Pontificia Universidad Católica de Chile, Chile

PS4-07 Nocturnal and diurnal grapevine transpiration. Relationship with meteorological parameters

A. Montoro¹, I. Torija¹, R. López-Urrea¹

¹ITAP, Spain

PS4-08 Canopy conductance of Hazelnut orchards appeared relatively insensitive to different irrigation regimes

G. Pasqualotto¹, V. Carraro¹, E.S. Huerta², M.J. Lisperguer³,

T. De Gregorio⁴, T. Anfodillo¹

¹Università di Padova, Italy; ²Ferrero Trading, Luxembourg; ³Fruticola Agrichile S.A., Chile; ⁴Ferrero S.p.A., Italy

PS4-09 Water-yield relationship in the cultivation of strawberry

H. Kaman¹, H. Gubbuk¹, A. Tezcan¹, M. Can¹, Ö. Özbek², S. Sener¹

¹University of Akdeniz-Faculty of Agri., Turkey; ²Bati Akdeniz Agricultural Research Institu, Turkey

PS4-10 Adaptation mechanisms to water scarcity of two almond cultivars from different origin countries

L. Gaeta¹, A.M. Amendolagine¹, D. Di Gennaro¹, P. Losciale¹

¹University of Bari, Italy

PS4-11 Irrigation levels and abscisic acid application effects on pomological characteristics of strawberry

M.A.Saridas¹, B. Kapur¹, E. Celiktopuz¹, A.O. Sarwari¹, S. Paydas Kargi¹

¹University of Cukurova, Turkey

PS4-12 Can foliar anthocyanins help Prunus saplings to alleviate water stress effects?

E. Lo Piccolo¹, M. Landi¹, T. Giordani¹, G. Lorenzini¹, F. Malorgio¹,

R. Massai¹, C. Nali¹, E. Pellegrini¹, G. Rallo¹, D. Remorini¹, P. Vernieri¹,

L. Guidi¹

¹University of Pisa, Italy

PS4-14 Influence of the environmental conditions under hail nets on efficiency of irrigation and fertilization in 'Golden Delicious' apple trees

M. Mészáros¹, H. Belíková¹, P. Conka¹, J. Namestek¹

¹*VSUO Holovousy, s.r.o., Czech Republic*

SESSION 5. Sensing technologies relevant to the precision irrigation

18:00 – 19:00

PS5-01 Plant and soil water status indicators for irrigation scheduling in young lime trees

A.B. Mira Garcia¹, J. Vera¹, W.C. Puente¹, M.C. Ruiz-Sánchez¹

¹*CEBAS-CSIC, Spain*

PS5-02 A plant-based index for plant water status detection and irrigation scheduling in pear 'Abbé Fetel': first results on the use of the IPL index

P. Losciale¹, L. Manfrini², B. Morandi², M. Zibordi², A. Stellacci¹, L. Corelli-Grappadelli²

¹*University of Bari, Italy;* ²*University of Bologna, Italy*

PS5-04 A tool for simulation of water storage and infiltration capacity of agricultural soils depending on carbon management practices

G. Montanaro¹, A. Fiore¹, C. Loiodice¹, G. Carlucci¹, B. Dichio¹

¹*University of Basilicata, Italy*

PS5-06 Deepfield connect, an innovative decision support system for crops irrigation management under Mediterranean conditions

G. De Mastro¹, G. Vivaldi¹, S. Camposeo¹, L. Tedone¹, M. Berardi¹, F. Grandolfo², A. Diaferia², A. Sciusco², A. Lastella², A. Arvizzigno², S.A. Alhajj²

¹*University of Bari, Italy;* ²*BOSCH, Modugno, Italy*

PS5-07 Polyphenolic and sugar profiles in leaves from two apple cultivars grown with and without irrigation

M.F. Aksic¹, N. Horovacki¹, U. Gasic¹, T. Tosti¹, G. Zec¹, I. Ciric¹, Z. Tesic¹, M. Meland²

¹*University of Belgrade, Serbia;* ²*NIBIO Ullensvang, Norway*

PS5-08 Application of automatic irrigation system (IRRIX) to water management in nectarine commercial farm

C.C. Torres¹, M.H. Prieto², S. Millan², J. Casadesús³, A. Vivas²

¹Centro de Investigación Finca, Spain; ²CICYTEX, Spain; ³IRTA, Spain

PS5-09 A microtensiometer sensor to continuously monitor stem water status in woody plants - design and field testing

A.N. Lakso¹, S. Zhu², M. Santiago³, K. Shackel⁴, V. Volkov⁴, A. Stroock²

¹Cornell AgriTech, United States of America; ²Cornell University, United States of America; ³FloraPulse Co., United States of America; ⁴University of California, United States of America

PS5-10 A comparative study of irrigation scheduling based on morning, daylight and daily crop water stress index dynamic threshold (CWSI-DT) in apple trees

F. Ferrer¹, M. Abdelmoneim², Y. Osroosh³, T. Bates³, C. Campbell³, T. Peters²

¹University of Cervera, Spain; ²WSU-IAREC, United States of America; ³METER GROUP, United States of America

PS5-11 Plant growth as an indicator for irrigation practices

Z. Omer¹, M. Dinar²

¹Mishmar Hanegev, Israel; ²Kadima, Israel

PS5-12 Decision support systems shape new strategies to manage irrigation of orchards in a climate change context

J. Chopard¹, G. Lopez¹, C. Becel¹, P. Hublart¹, D. Fumey¹

¹ITK, France

PS5-13 Development of linear models to estimate vine water status using spectral indices

S. Ortega-Farias¹, R. Vega¹, F. Fuentes-Peñailillo¹, K. Gutter¹, J. Albornoz¹

¹University of Talca, Chile

PS5-14 Estimation of vineyard water status using infrared thermometry measured at different positions of the canopy

S. Ortega-Farias¹, K. Gutter¹, F. Fuentes-Peñailillo¹, R. Vega¹, J. Albornoz¹

¹University of Talca, Chile

PS5-15 Estimation of soil moisture from UAS platforms using RGB and thermal imaging sensors in arid and semi-arid regions

P. Paridà¹, S. Manfreda¹, S.F. Dal Sasso¹, A. Pizzaro¹, L. Mita¹

¹University of Basilicata, Italy

PS5-16 Preliminary real-time monitoring of the sap electrolyte concentration in live tree through an in vivo sensor

D. Amato¹, F. Vurro², M. Janni², A. Zappettini², S. Summerer³,
V. Nuzzo¹, G. Montanaro³

¹University of Basilicata, Italy; ²CNR-IMEM, Italy; ³Metapontum Agrobios, Italy

PS5-17 Monitoring fruit daily growth indicates the onset of mild drought stress in apple

B. Morandi¹, A. Boini¹, G. Bortolotti¹, L. Corelli Grappadelli¹, L. Manfrini¹

¹University of Bologna, Italy

PS5-18 Soil scanning and remote sensing for precision irrigation management in pear orchards

J. Vandermaesen¹, S. Delalieux², W. Akkermans¹, W. Verjans¹,
D. Bylemans¹, S. Remy¹

¹Research Centre For Fruit Cultivation, Belgium; ²PCFruit Research Station, Belgium

PS5-19 Possibilities to determine of the soil water content

H. Kaman¹, A. Tezcan¹, M. Can¹, Ö. Özbek²

¹University of Akdeniz-Faculty of Agri., Turkey; ²Bati Akdeniz Agricultural Research Institut, Turkey

PS5-20 Irrigation of grape and pomegranate by using soil sensors

G. Ferrara¹, M. Denora¹, A. Mazzeo¹

¹University of Bari, Italy

PS5-21 Field-testing of a Decision Support System (DSS) integrated with plant/soil sensors to optimize irrigation management in kiwifruit in Italy: the issue of model parameterization

V. Buono¹, M. Mastroleo², C. Lucchi², G. D'Amato¹, L. Manfrini³,
B. Morandi³

¹Sysman Projects Services Ltd, Italy; ²Apofruit Soc. Coop. Agr., Italy;

³University of Bologna, Italy

PS5-22 Optimizing sampling protocols for estimating irrigation usage with regional monitoring

M. Battany

University of California, United States of America

PS5-23 Correlating remote and terrestrial water status indices in a nectarine orchard

M.R. Conesa¹, W. Conejero¹, J. Vera¹, M.C.R. Sánchez¹

¹*CEBAS-CSIC, Spain*

PS5-24 VISCA - An integrated climate application for decision support system in vineyards

O. García-Tejera¹, J. Oliver-Manera¹, B. Basile², A. Mataffo², F. Carteni², M. Teobaldelli², P. Scognamiglio², S.M.P Carvalho³, J. Quieroz³, I.L Cabral³, R.Marcos⁴, I. Porrás⁵, C. Rossi⁶, J. Valente⁷, F. Alves⁷, J. Girona¹

¹*IRTA, Spain*; ²*University of Naples Federico II, Italy*; ³*University of Porto, Portugal*;

⁴*Barcelona Super Computing Center BSC, Spain*; ⁵*Meteosim S.L, Spain*;

⁶*ISMB, Italy*; ⁷*Symington Family Estates, Portugal*

PS5-25 An electronic Decision Support System to determine risk-based, site-specific fitness for use of irrigation water

J. Annandale¹, M. du Plessis¹, N. Benade¹

¹*University of Pretoria, South Africa*

PS5-26 A new automated station for water status monitoring in grapevines

C. Sirca¹, R.L. Snyder², S. Marras¹, A.F. de Oliveira¹, M. Lo Cascio¹, M. Barbaro³, P. Meloni³, M.G. Mameli⁴, D. Satta⁴, P. Duce⁵, C. Cesaraccio⁵, D. Spano¹

¹*University of Sassari, Italy*; ²*University of California, United States of America*;

³*University of Cagliari, Italy*; ⁴*AGRIS, Italy*; ⁵*CNR - IBIMET, Italy*

PS5-27 Mapping of deep percolation using remote sensing over irrigated area in the Haouz plain (Marrakech, Morocco)

H. Nassah¹, S. Er-Raki¹, Y. Fakir¹, V. Simonneaux², S. Khabba¹

¹*University Cadi Ayyad, Morocco*; ²*CESBIO, France*

PS5-28 Automation of drip irrigation in almond and apple tree plots considering the sources of variability that affect humidity sensors

J.D. Nino¹, J.C. Brugués¹

¹*IRTA, Spain*

PS5-29 Analysis of some key features of a web tool for automated sensor-based irrigation scheduling in horticultural crops

J. Casadesus¹, J. Domínguez¹, J. Girona¹

¹IRTA, Spain

PS5-30 Leaching fraction and soil salinity status of surface irrigated pistachio orchards in Yazd Province, Central Iran

M.-H.Rahimian¹, M. Karimi¹, R. Yazdani-Biouki¹

¹National Salinity Research Center, Iran

PS5-31 Computation of satellite-based single crop coefficients time series for drip-irrigated apple (*Malus domestica* B.) trees

D. de la Fuente-Sáiz¹, S. Ortega-Farias¹, M. Carrasco-Benavides¹

¹University of Talca, Chile

PS5-32 Evaluation of a two-source model to estimate vineyard evapotranspiration using UAV-based thermal images and meteorological data

S. Ortega-Farias¹, F. Fuentes-Peñailillo¹, J. Albornoz¹, R. Vega¹, K. Gutter¹

¹University of Talca, Chile

PS5-33 Water Savings via a Web-Based Irrigation Decision Support System

L. Corelli-Grappadelli¹, J. Bonany²

¹University of Bologna, Italy ²IRTA - Fundació Mas Badia, Girona, Spain;

SESSION 6. Tree crop irrigation management (drought and fruit quality)

18:00 – 19:00

PS6-01 Subsurface drip Irrigation and ICT for the innovative irrigation water management: application to citrus crop (C. reticulata cv. Tardivo di Ciaculli)

L. Franco¹, G. Giardina², J. Toker³, A. Motisi¹, G. Provenzano¹

¹University of Palermo, Italy; ²IRRITEC S.p.A., Italy; ³AgriNET/Tuctronics, United States of America

PS6-02 Performance of sweet cherry trees growing in pots in a controlled environment

M. Meland¹, A. Joergensen², M.F. Aksic³

¹NIBIO Ullensvang, Norway; ²Norwegian Institute of Bioeconomy Research, Norway; ³University of Belgrade, Serbia

PS6-03 Assessing drip irrigation system performance in a blueberry crop to improve the water use efficiency and productivity within the water-energy-food-nexus

A. Pannunzio¹, E. Holzapfel², P.T. Soria³, J. Brenner³, F. Dufour³, G. Demarco³

¹Berries del Sol, Argentina; ²University of Concepcion Chile, Chile; ³University of Argentina, Argentina

PS6-04 Substrate Moisture Effects on Growth, Yield and Fruit Quality of Strawberry (Fragaria X ananassa)

B. Belayneh¹, J. Lea-Cox¹

¹University of Maryland, United States of America

PS6-05 Testing three strawberry cultivars for reduced water demand in the mid-adriatic area

M. Marcellini¹, F. Balducci¹, G. Malavolta², L. Mazzoni¹, B. Mezzetti¹, F. Capocasa¹

¹University of Ancona, Italy; ²Marche Agro-Food Sector Agency, Italy

PS6-06 Irrigation of apples in a humid climate in wet and dry years

T.L. Robinson¹, J. Lordan², P. Francescato³

¹SIPS, United States of America; ²IRTA, Spain; ³Valent Biosciences LLC, United States of America

PS6-07 Effects of the application of water stress controlled technique on productive, qualitative and nutritional parameters on a late peach cultivar

I. Medori¹, P. Acciarri², F. Balducci¹, L. Mazzoni¹, B. Mezzetti¹,
F. Capocasa¹

¹University of Ancona, Italy; ²Acciarri Agricultural Society SRL, Italy

PS6-08 Evaluating irrigation practices of two olive orchards in a water-scarce environment in Cyprus

M. Siakou¹, A. Bruggeman¹, C. Zoumides¹, H. Djuma¹, M. Eliades¹

¹The Cyprus Institute Research Technology Innovation, Cyprus

PS6-09 Effects of a severe one-season water shortage on survival and yield in almond

D.M. Romero¹, E. Fereres¹, I.J. Lorite², V. González¹, L. Testi¹, F. Orgaz¹

¹Instituto de Agricultura Sostenible, Spain; ²IFAPA, Spain

PS6-10 Long-term summer pruning in peach trees: is it an advisable cultural practice?

M.C.R. Sánchez¹, I. Abrisqueta¹, W. Conejero¹, M.R. Conesa¹, J. Vera¹

¹CEBAS-CSIC, Spain

PS6-11 Irrigation strategies for citrus trees – a farm scale comparison for a Greek and Italian area

G. Morianou¹, A. N. Mininni³, V. Pisinaras², N.N. Kourgialas¹,

F. Manicone³, G. Arampatzis², G. Psarras¹

¹H.A.O - DIMITRA, N.AG.RE.F., Chania, Greece; ²H.A.O - DIMITRA, N.AG.RE.F., Sindos, Greece; ³University of Basilicata, Italy

PS6-12 The influence of water deficit and rewatering on flower bud morphogenesis in young apricot trees (*Prunus armeniaca* L.)

S. Bartolini¹, E. Lo Piccolo², D. Remorini²

¹Scuola Superiore Sant' Anna, Italy; ²University of Pisa, Italy

PS6-13 Evolution of quality parameters in cv. Angeleno (*Prunus salicina* L.) under different irrigation strategies

A. Vivas Cacho¹, M. J. Moñino Espino¹, F. Blanco-Cipollone¹,

M. H. Prieto Losada¹

¹CICYTEX, Spain

PS6-14 Efficiency of irrigation and fertigation in mature period of apple orchard

E. Rubauskis¹, V. Berlands¹, M. Skrivele¹, V. Jansons¹, V. Pole¹, I. Missa¹

¹*Institute of Horticulture, Latvia*

PS6-15 Evaluation of variable rate irrigation systems in California almond orchards

C.M. Culumber¹, K. Bali¹, S. Cooper¹, T. Rinckenberger¹, D. Rossini¹, I. Nadav², J. Nichols³

¹*University of California, United States of America*; ²*Netafim Hanegev, Israel*;

³*Nichols Farms, United States of America*

PS6-16 Deficit irrigation applied in a peach orchard under Mediterranean climatic conditions in Portugal

A.C. Duarte¹, A. Veloso¹, A. Ramos¹

¹*Higher Agricultural School, Portugal*

PS6-18 A near-hydroponic open field drip irrigation system improves young persimmon trees performance and water use efficiency

M. Parra¹, J.S. Rubio-Asensio¹, I. Abrisqueta², D. Hortelano¹, J.J. Alarcón¹, D. Intrigliolo¹

¹*CEBAS-CSIC, Murcia, Spain*; ²*RIEGOS Y TECNOLOGÍA, S.L., Spain*

PS6-19 Influence of different water stress strategies applied to olive trees on the fruit size and oil production

J.H. Moya¹, J.C.H. Moya¹, A.L. Bollero¹, D.P. Mohedano¹, V.V. Macías¹

¹*Maimonides Biomedical Research Institute of Cordoba – IMIBIC, Spain*

PS6-20 Enhancing water use efficiency in irrigated agriculture through variable rate drip irrigation: the case of a pear orchard in northern Italy

B. Ortuani¹, A. Facchi¹, A. Mayer¹, L. Brancadoro¹

¹*University of Milano, Italy*

PS6-21 Evaluation of an operational participatory system for irrigation recommendations – case study for kiwi crop in Greece

I. Tsirogiannis¹, P. Baltzoi¹, K. Fotia², P. Barouchas³, A. Christofides⁴, N. Malamos³

¹*University of Ioannina, Greece*; ²*University of Thessaly, Greece*; ³*TEI of Western Greece, Greece*; ⁴*National Technical University of Athens, Greece*

PS6-22 Overcanopy irrigation in apple orchard: a two-year study on the microclimatic, physiological and productive effects

L. Manfrini¹, B. Morandi¹, G.D. Perulli¹, A. Boini¹, K. Bresilla¹, G. Gatti¹, G. Bortolotti¹, S. Anconelli¹, D. Solimando¹, T. Letterio¹, F. Rossi¹, O. Facini¹, C. Chieco¹, S. Tadic¹, M. Gerin², L.C. Grappadelli¹

¹University of Bologna, Italy; ²University of Ferrara, Italy

PS6-23 Apple fruit quality improved by means of shading

A. Boini¹, K. Bresilla¹, G.D. Perulli¹, L. Manfrini¹, G. Bortolotti¹, B. Morandi¹, L.C. Grappadelli¹

¹University of Bologna, Italy

PS6-24 Response of juvenile plantain (Musa AAB) to irrigation

I.O. Aiyelaagbe¹, S. Adekpe²

¹University of Agriculture, Nigeria; ²University of Ibadan, Nigeria

PS6-25 The response of pear tree and fruit growth to the water stress applied during different growing stages of pear tree

S. Liu

Beijing Academy of Forestry and Pomology Sc, China

PS6-26 Evaluation of subsurface drip irrigation emitters on a split-root container-grown citrus rootstock (citrange carrizo)

L. Franco¹, A. Motisi¹, G. Provenzano¹

¹University of Palermo, Italy

PS6-27 Irrigation of intensive olive groves in the Mediterranean environment with different water regimes on two different soils - I: Effects on yields, water use efficiency, vegetative behaviour and water status of the crop

G. Lopriore¹, A. Caliandro²

¹University of Foggia, Italy; ²University of Bari, Italy

PS6-28 Irrigation of intensive olive groves in the Mediterranean environment with different water regimes on two different soils - II: : Effects on carpological parameters and technological and qualitative characteristics of the oils

G. Lopriore¹, A. Tarantino¹

¹University of Foggia, Italy

SESSION 7. Vineyard irrigation: grape and wine quality

10:30 – 11:30

PS7-01 Application of an innovative plant biostimulant to increase water use in crop production

N. Briglia¹, G. Povero², A. Petrozza³, S. Summerer³, F. Cellini³,
V. Nuzzo¹, G. Montanaro¹

¹University of Basilicata, Italy; ²Valagro SpA, Italy; ³ALSIA CRMA, Italy

PS7-02 Differences among two grapevine cultivars in their response to pre and post veraison water deficit

L. Mercenaro¹, A.F. de Oliveira¹, A. Del Caro¹, C. Fadda¹, G. Nieddu¹

¹University of Sassari, Italy

PS7-03 Is it possible to increase the soil water retention after irrigation? A practical experience in a table grape vineyard

A. Carlomagno¹, B. De Tomaso², M. Fioretti², A. Mastropirro²

¹University of Rome, Italy; ²Univerity of Bari, Italy

PS7-04 Yield and berry composition of Tempranillo grapevines exposed to deficit irrigation applied at different phenological stages

B. Basile¹, J. Girona², O. M-Tejera², J. Marsal²

¹University of Naples Federico II, Italy; ²IRTA, Spain

PS7-05 Effects of soil water availability and leaf area on transpiration rates of grapevines

A. Wenter¹, D. Zanotelli¹, M. Tagliavini¹, C. Andreotti¹

¹Free University of Bozen-Bolzano, Italy

PS7-06 Irrigation scheduling using continuously monitored data of soil volumetric water content

A. Patakas¹, V. Triantafyllidis¹, E. Kokotos¹

¹University of Patras, Greece

PS7-07 Effect of forcing vine regrowth to delay the crop cycle on canopy productivity and crop water needs of a wine vineyard in southwestern Spain

M. H. Prieto¹, N. Lavado¹, D. Uriarte¹, L.A. Mancha¹,
D. Moreno¹, E. Valdes¹

¹CICYTEX, Spain

PS7-08 Vermentino and Cagnulari adaptation responses to the regulated deficit irrigation strategy managed with stem water potential watering thresholds

M.G. Mameli¹, L. De Pau¹, D. Delpiano¹, D. Satta¹

¹AGRIS, Italy

PS7-09 Quantifying table grape vineyard water use and water use efficiency through transpiration and evapotranspiration using sap flow measurements and FruitLook remote sensing data

E. Avenant¹, G. Kanguehi², J. H. Avenant³

¹South African Table Grape Industry, South Africa; ²University of Stellenbosch, South Africa; ³ARC Infruitec-Nietvoorbij, South Africa

PS7-10 The effect of overhead netting on water utilisation and soil water content of a table grape vineyard

E. Avenant¹, J. H. Avenant²

¹South African Table Grape Industry, South Africa; ²ARC Infruitec-Nietvoorbij, South Africa

SESSION 8. Irrigation of annual crops and ornamental plants – open field and greenhouses

10:30 – 11:30

PS8-01 Driptide clogging and poor irrigation performance: the patented dripline providing a solution allowing durable supply uniformity even in the case of low filtration

G. Giardina¹, P. Chiozza¹

¹IRRITEC S.p.A., Italy

PS8-02 Two seasons of deficit irrigation of processing tomato in Hungary

S. Takács¹, Z. Pék¹, T. Bíró², L. Helyes¹

¹University Cultivating Knowledge and Sustainability SZIU, Hungary;

²National University of Public Service, Hungary

PS8-03 Agronomical, physiological and water use efficiency changes of lettuce in response to deficit irrigation regimes

Y. Rouphael¹, S. De Pascale¹, F. Karam², G. Colla³, C. Cirillo¹

¹University of Naples Federico II, Italy; ²LARI, Lebanon; ³University of Tuscia, Italy

PS8-04 Evaluating the responses of Ghanaian rice varieties to alternate wetting and drying and continuous flooding

J. Puertolas¹, S. Yeboah², P. Oteng-Darko², E. Annan-Afful², I.C. Dodd¹

¹Lancaster University, United Kingdom; ²Crop Research Institute-CSIR, Ghana

PS8-05 Controlled deficit irrigation effects on growth and water relations of (*Daucus carota* L.) tubers

W.B. Herppich¹, M. Geyer¹, H. Mempel², M. Schreiner¹, S. Huyskens-Keil³

¹Leibniz-Inst. Agricult. Eng. Potsdam-Bornim, Germany; ²University of Applied Sciences, Germany; ³University of Berlin, Berlin, Germany

PS8-06 Small' potato production: cultivar and agronomic practice influence on yield and tuber size distribution

J. Wahab¹, B. Bizimung¹, G. Larson¹

¹University of Canada, Canada

PS8-07 Influence of irrigation schedules on Radicchio production in north-eastern Italy

L. Bortolini¹, M. Tolomio¹

¹University of Padova, Italy

PS8-08 Response of melon (*Cucumis melo* L.) var. Honey dew to four levels of irrigation at Cachapoal Valley, Region de O'Higgins, Chile

A. Antunez¹, S. Felmer¹, M. Vidal¹, R. Morale¹

¹Instituto de Investigaciones Agropecuarias, Chile

PS8-09 Biofilm management in irrigation lines and hydroponic lettuce solutions using sanitizing chemicals

P. Fisher¹, P. Rodrigues², M.F. Trientini¹

¹University of Florida, United States of America; ²University of São Paulo, Brazil;

PS8-10 Influence of irrigation on effectiveness of nematicides for management of Columbia root knot nematode on potatoes

B. B. Westerdahl

University of California, United States of America

PS8-11 Simple and spatial approach to optimise water irrigation and cereal yield in the semi-arid areas

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PS8-12 Irrigating based on container capacity conserves water with minimal effect on crop quality

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PS8-13 Effect of peatmoss amended pine bark on water dynamics within a nursery container and weed growth on the substrate surface

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PS8-14 Effects of a simulated heat wave on growth and eco-physiology of seedlings in *Quercus ilex* L. and *Arbutus unedo* L.

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PS8-15 Examining the potential to reduce nursery crop fertilizer rates with a leaching fraction-based irrigation schedule

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PS8-16 A comparison of irrigation-water containment systems and management strategies, to ensure water security in two ornamental operations

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PS8-17 Effects of a biostimulant for the use in fertirrigation on processing tomato regarding the main biometric and production parameters, in controlled and field conditions

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PS8-18 Reducing agrochemical movement in container crops by irrigating based on container capacity

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PS8-19 On-the-go Automatic Resistivity Profiler (ARP®) mapping as a basis for modelling crop precision irrigation strategies

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