



2nd ClimWine Symposium



terclim

July 3 – 8, 2022 | Bordeaux, France

XIVth International Terroir Congress

 **Scientific program**

Sunday 3 July, 2022

Welcome reception at Credit Agricole (La Cité du Vin, Bordeaux)	
17:30–19:00	Registration
18:00–19:00	<p style="text-align: center;">Inaugural conferences</p> <p style="text-align: center;">Pr. Gregory Jones (CEO Abacela, Oregon, USA) Climate, viticulture, and wine ... my how things have changed!</p> <p style="text-align: center;">Mireia Torres (Familia Torres, Spain) Climate change adaptation and mitigation measures at Familia Torres</p>
19:00–19:45	Opening ceremony
20:00–21:00	Welcome cocktail

Monday 4 July, 2022

8:00–8:30	Registration and poster installation	
8:30–8:40	Welcome message : Jean-Philippe Roby & Nathalie Ollat	
Session A : Integrated terroir studies, from methodologies to landscapes Chair : Benjamin Bois (IUVV Dijon, France)		
8:40–9:05	Invited speaker : Antonello Bonfante (CNR Portici, Italy) Terroir analysis and its complexity	A1
9:05–9:30	Invited speaker : Amélie Quiquerez (Univ. of Bourgogne Dijon, France) Legacy of land-cover changes on soil microbiology in Burgundy vineyards (Pernand-Vergelesses, France)	A2
9:30–9:45	Cécile Laurent Local influence of climate on grapevine: an analytical process involving a functional and Bayesian exploration of farm data time series synchronised with an eGDD thermal index	A3
9:45–10:00	Johanna Döring The impact of sustainable management regimes on amino acid profiles in grape juice, grape skin flavonoids, and hydroxycinnamic acids	A4
10:00–10:05	Alena Wilson * Geospatial trends of bioclimatic indexes in the topographically complex region of Barolo DOCG	A5
10:05–10:10	Carlo Ferretti Vineyards and soil mineralogy: Analytical approach to assessing clay minerals and correlations with soil's properties	A6

10:10–10:15	Constance Demestih A blueprint for managing vine physiological balance at different spatial and temporal scales in Champagne	A7
10:15–10:20	Andreu Maraita * Organic recycled mulches in sustainable viticulture: assessment of spontaneous plants communities and weed coverage	A8
10:20–10:30	Presentation by the Chairs of the posters session A	
10:30–11:00	Coffee break + Posters	
Session B : Smart technologies for terroir studies Chair : Marc Greven (ISVV Bordeaux, France)		
11:00–11:25	Invited speaker : Rob Bramley (CSIRO Adelaide, Australia) Underpinning terroir with data: rethinking the zoning paradigm	B1
11:25–11:40	Juan Fernández-Navales Use of a new, miniaturized, low-cost spectral sensor to estimate and map the vineyard water status from a mobile platform	B2
11:40–11:55	Léo Pichon Towards a regional mapping of vine water status based on crowdsourcing observations	B3
11:55–12:10	Haitham Ezzy * Effect of multi-level and multi-scale spectral data source on vineyard state assessment	B4
12:10–12:15	Alberto Lázaro-López * Enhancing the integrated terroir zoning via Digital Soil Mapping: application in the Designation of Origin Campo de Borja	B5
12:15–12:20	Presentation by the Chairs of the posters session B	
12:25–13:55	Lunch + Posters	
Session C : Soil physical, chemical and microbiological properties and their impact on vine physiology Chair : Virginie Lauvergeat (ISVV Bordeaux, France)		
13:55–14:00	Stage announcements	
14:00–14:25	Invited speaker : Isabelle Masneuf-Pomarède (ISVV Bordeaux, France) The concept of terroir: what place for microbiota?	C1
14:25–14:50	Invited speaker : Stefanos Koundouras (Univ. of Thessaloniki, Greece) Deconstructing the soil component of terroir: from controversy to consensus	C2

14:50–14:05	Jean-Yves Cahurel Soil quality in Beaujolais vineyard. Importance of pedology and cultural practices	C3
15:05–15:20	Marc Viñas Impact of long term agroecological and conventional practices on subsurface soil microbiota in Macabeu and Xarel-lo vineyards	C4
15:20–15:25	Presentation by the Chair of the posters session C	
15:45–16:45	Departure by bus to the Saint-Emilion vineyards	
17:00–19:00	Field trip 1	
19:00–22:30	Wine tasting and dinner at <i>Tonnellerie Sylvain</i>	
22:30–23:30	Return by bus to hotels	

Tuesday 5 July, 2022

8:30–8:40	Stage announcements	
Session D : Adaptation to climate change through cultural practices Chairs : Jean-Philippe Roby (ISVV Bordeaux, France) Christian Gary (INRAE Montpellier, France)		
8:40–9:05	Invited speaker : Kaan Kurtural (UC Davis, USA) Adapting the vineyard to climate change in warm climate regions with cultural practices	D1
9:05–9:20	Christian Gary Co-design and evaluation of spatially explicit strategies of adaptation to climate change in a Mediterranean watershed	D2
9:20–9:35	Luca Brillante Late season canopy management practices to reduce sugar loading and improve color profile of Cabernet-Sauvignon grapes and wines in the high irradiance and hot conditions of California Central Valley	D3
9:35–9:40	Lauren Marigliano * Photosensitive shade films mitigate heat wave damage by reducing anthocyanin and flavonol degradation in grapevine (<i>Vitis vinifera</i> L.) berries	D4
9:40–9:45	Cassandra Collins Grapevine recovery after fire and a first look at rapid damage assessment with satellite imagery	D5
9:45–9:50	Maria Zumkeller * Permanent cover cropping with reduced tillage increased resiliency of wine grape vineyards to climate change	D6
9:50–9:55	Thierry Dufourcq Effect of partial net shading on the temperature and radiation in the grapevine canopy, consequences on the grape quality of cv. Gros Manseng in PDO Pacherenc-du-vic-Bilh	D7

9:55–10:00	Eric Serrano Better understand the soil wet bulb formation with subsurface or aerial drip irrigation in viticulture	D8
10:00–10:30	Coffee break + Posters	
10:30–10:55	Invited speaker : Gonzaga Santesteban (Univ. de Navarra, Spain) Extreme canopy management for vineyard adaptation to climate change: is it a good idea?	D9
10:55–11:10	Alexander Levin Delaying irrigation initiation linearly reduces yield with little impact on maturity in Pinot noir	D10
11:10–11:25	Thibaut Verdenal Carryover effects of crop thinning and foliar N fertilisation on grape amino N composition	D11
11:25–11:30	Susanne Tittmann The impact of leaf canopy management on eco-physiology, wood chemical properties and microbial communities in root, trunk and cordon of Riesling grapevines (<i>Vitis vinifera</i> L.).	D12
11:30–11:35	Esther Hernández-Montes Combining effect of leaf removal and natural shading on grape ripening under two irrigation strategies in Manto negro (<i>Vitis vinifera</i> L.).	D13
11:35–11:40	Benjamin Pike * Pruned vine biomass exclusion from a clay loam vineyard soil - Examining the impact on physical/chemical properties	D14
11:40–11:45	Bhaskar Bondada Differential responses of red and white grape cultivars trained to a single trellis system - the VSP	D15
11:45–12:00	Presentation by the Chairs of the posters session D	
12:00–13:55	Lunch + Posters	
Session E : Climate change projections Chair : Gregory Jones (CEO Abacela, Oregon, USA)		
13:55–14:00	Stage announcements	
14:00–14:25	Invited speaker : João Santos (UTAD Vila Real, Portugal) Climate change projections to support the transition to climate-smart viticulture	E1
14:25–14:40	Benjamin Bois Frost risk projections in a changing climate are highly sensitive in time and space to frost modelling approaches	E2
14:40–14:55	Felicidad de Herralde Assessment of climate change impacts on water needs and growing cycle on grapevine in three DOs of NE Spain	E3

14:55–15:10	Sébastien Zito Climate projections over France wine-growing region and its potential impact on phenology	E4
15:10–15:15	Renan Le Roux Climate modeling at local scale in the Waipara winegrowing region in the climate change context	E5
15:15–15:20	Jeanne Thibault * Modelling new potential wine growing areas in the context of climate change	E6
15:20–15:25	Presentation by the Chair of the posters session E	
15:45–16:45	Departure by bus to the Médoc vineyards	
17:00–19:00	Field trip 2	
19:00–22:30	Wine tasting and cocktail reception at <i>Château La Tour Carnet</i>	
22:30–23:30	Return by bus to hotels	

Wednesday 6 July, 2022

8:30–8:40	Stage announcements	
<p align="center">Session F : Climate vine interaction including climate change impacts Chair(s) : Cassandra Collins (Univ. of Adelaide, Australia) Hans Schultz (Hochschule Geisenheim Univ., Germany)</p>		
8:40–9:05	Invited speaker : Hans Schultz (Hochschule Geisenheim Univ., Germany) Soil, vine, climate change; the challenge of predicting soil carbon changes and greenhouse gas emissions in vineyards and is the 4 per 1000 goal realistic?	F1
9:05–9:20	Cécile Kahn * Vineyard FACE: Investigation of a moderate (+20%) increase of ambient CO2 level on berry ripening dynamics and fruit composition of Cabernet-Sauvignon	F2
9:20–9:35	Franco Meggio The interplay between grape ripening and weather anomalies in Northern Italy – A modelling exercise	F3
9:35–9:50	Mark Gowdy * Variety-specific response of bulk stomatal conductance of grapevine canopies to changes in net radiation, atmospheric demand, and drought stress	F4
9:50–9:55	Luca Brillante Comparison of imputation methods in long and varied phenological series. Application to the Conegliano dataset, including observations from 1964 over 400 grape varieties	F5
9:55–10:00	João Santos Modelling vine water stress during a critical period and potential yield reduction rate in European wine regions: a retrospective analysis	F6

10:00–10:05	Philippe Pieri Spatial variability of temperature is linked to grape composition variability in the Saint-Emilion winegrowing area	F7
10:05–10:10	Yvette Wohlfahrt Impact on leaf morphology of <i>Vitis vinifera</i> L. cvs. Riesling and Cabernet Sauvignon under Free Air Carbon dioxide Enrichment (FACE)	F8
10:10–10:15	Justin Tanner 'Cabernet Sauvignon' (<i>Vitis vinifera</i> L.) berry skin flavonol and anthocyanin composition is affected by trellis systems and applied water amounts	F9
10:15–10:20	Basile Pauthier Late frost protection in Champagne	F10
10:20–10:50	Coffee break + Posters	
10:50–11:15	Invited speaker : Nathalie Ollat (ISVV Bordeaux, France) Climate change impacts: a multi-stress issue	F11
11:15–11:30	Cassandra Collins Grapevine recovery after fire and a first look at rapid damage assessment with satellite imagery	F12
11:30–11:45	Sébastien Nicolas * Metabolomic discrimination of grapevine water status for Chardonnay and Pinot noir	F13
11:45–11:50	Matthias Friedel Mobile device to induce heat-stress on grapevine berries	F14
11:50–11:55	Chloé Delmas Quantifying the grapevine xylem embolism resistance spectrum to identify varieties at risk in a future dry climate	F15
11:55–12:00	Chloé Delmas Short-term relationships between climate and grapevine trunk diseases in southern French vineyards	F16
12:00–12:05	Ramiro Tachini * Study of mesoclimate and its impact on <i>Vitis vinifera</i> L. cv. Tannat in the atlantic winegrowing region of Uruguay	F17
12:05–12:10	João Santos Bioclimatic shifts and land use options for Viticulture in Portugal	F18
12:10–12:15	Joaquín Cámara Climate zoning and impact of Climate Change on the viticultural climate of the Protected Designation of Origin "Jumilla" (SE Spain)	F19

12:15–12:20	Eugenia Monaco * Analysis of Cabernet Sauvignon and Aglianico responses to different pedo-climatic environments in southern Italy	F20
12:20–12:25	Ivan Prša Influence of weather and climatic conditions on the viticultural production in Croatia	F21
12:25–12:35	Presentation by the Chairs of the posters session F	
12:45–14:45	Wine tasting + Lunch + Posters	

Free afternoon and evening

Thursday 7 July, 2022

8:30–8:40	Stage announcements	
Session G : Adaptation to soil and climate through the choice of plant material Chair(s): Nathalie Ollat (ISVV Bordeaux, France) Eric Duchêne (INRAE Colmar, France)		
8:40–9:05	Invited speaker : Eric Duchêne (INRAE Colmar, France) Adaptation to soil and climate through the choice of plant material	G1
9:05–9:20	Marc Plantevin * Using $\delta^{13}\text{C}$ and hydroscares as a tool for discriminating cultivar specific drought responses	G2
9:20–9:35	Fernando Alves 20 years old data set: scion x rootstock x climate, relationship's. Effects on phenology and sugar dynamics	G3
9:35–9:40	Coralie Dewasme The use of rootstock as a lever to face climate change and vineyard dieback	G4
9:40–9:45	Josefina Bota Local ancient grapevine cultivars to face future viticulture	G5
9:45–9:50	Nazareth Torres Effects of graft quality on growth and grapevine-water relations	G6
9:50–9:55	Ignacio Buesa Ecophysiological performance of <i>Vitis</i> rootstocks under water stress	G7
9:55–10:00	Megan Bartlett Optimizing stomatal traits for future climates	G8
10:00–10:30	Coffee break + Posters	

10:30–10:45	Etienne Neethling Sustaining wine identity through intra-varietal diversification	G9
11:45–11:00	German Puga * Climate and the evolving mix of grape varieties in Australia's wine regions	G10
11:00–11:15	Elisa Marguerit The rootstock, the neglected player in the scion transpiration even during the night	G11
11:15–11:20	Luciana Wilhelm * Water deficit differentially impacts the yield and the accumulation of grape metabolites of new varieties tolerant to fungi	G12
11:20–11:25	Joana Valente Adaptability of grapevines to climate change: characterization of phenology and sugar accumulation of a large range of grape varieties, under hot climate conditions	G13
11:25–11:30	Taran Limousin How can historical cultivars mitigate the effects of climate change?	G14
11:30–11:35	Olivier Geffroy Investigating the impact of grape exposure and UV radiations on rotundone in <i>Vitis vinifera</i> L. cv. Tardif grapes under field trial conditions	G15
11:35–11:45	Presentation by the Chairs of the posters session G	
12:00–13:55	Lunch + Posters	
Session H : Global and multidisciplinary approaches for vineyard sustainability Chair : Stéphanie Peres (ISVV Bordeaux, France)		
13:55–14:00	Stage announcements	
14:00–14:25	Invited speaker: Marion Demossier (Southampton Univ., UK) Climate ethnography and wine environmental futures	H1
14:25–14:40	Antonio Graça Making sense of available information for climate change adaptation and building resilience into wine production systems across the world	H2
14:40–14:55	Nina Graveline Exploring resilience and competitiveness of wine estates in Languedoc-Roussillon in the recent past: a multi-level perspective	H3
14:55–15:10	Simon Tscholl * Assessing the climate change vulnerability of European winegrowing regions by combining exposure, sensitivity and adaptive capacity indicators	H4

15:10–15:25	Serena Fantasia The effects of alternative herbicide free cover cropping systems on soil health, vine performance, berry quality and vineyard biodiversity in a climate change scenario in Switzerland	H5
15:25–15:30	Joan Rosselló Analysis of some environmental factors and cultural practices that affect the production and quality of the Manto Negro, Callet and Prensal Blanc varieties	H6
15:30–15:35	Jorge Ducati Effect of vigour and number of clusters on enological parameters of cabernet sauvignon red wines	H7
15:35–15:40	Julián Palacios Assessment of the impact of actions in the vineyard and its surrounding environment on biodiversity in Rioja Alavesa (Spain)	H8
15:40–15:50	Presentation by the Chair of the posters session H	
16:00–16:45	Departure by bus to the Sauternes vineyards	
17:00–19:00	Field trip 3	
19:30–22:30	Gala dinner at <i>Château La Clotte-Cazalis</i>	
23:00–23:30	Return by bus to hotels	

Friday 8 July, 2022

9:30–9:40	Stage announcements	
Session I : Impact of terroir and climate change on wine quality and typicity Chair(s) : Philippe Darriet (ISVV Bordeaux, France) Sue Bastian (Adelaide Univ., Australia)		
9:40–10:05	Invited speaker : Cornelis van Leeuwen (ISVV Bordeaux, France) Aromatic maturity is a cornerstone of terroir expression in red wine	I1
10:05–10:20	Lira Souza Gonzaga Revealing the Barossa zone sub-divisions through sensory and chemical analysis of Shiraz wine	I2
10:20–10:35	Damian Martin Grape berry size is a key factor in determining New Zealand Pinot noir wine composition	I3
10:35–10:50	Max Spencer * Teasing apart terroir: the influence of management style on native yeast communities within Oregon wineries and vineyards	I4
10:50–11:05	Sebastian Candiago * A spatial explicit inventory of EU wine protected designation of origin to support decision making in a changing climate	I5
11:05–11:35	Coffee break + Posters	

11:35–11:50	Carlo Ferretti Terroir traceability in grapes, musts and wine: results of research on Gewürztraminer and Sauvignon Blanc grape varieties in northern Italy	16
11:50–12:05	Thierry Simonneau A better understanding of the climate effect on anthocyanin accumulation in grapes using a machine learning approach	17
12:05–12:20	Cécile Coulon-Leroy From a local to an international scale: sensory benchmarking of PDO wines. ‘Sauvignon blanc’ wines as a case study (France)	18
12:20–12:35	Ron Runnebaum Elucidating vineyard site contributions to key sensory molecules: identification of correlations between elemental composition and volatile aroma profile of site-specific Pinot noir wines	19
12:35–12:40	Justine Garbay * How does aromatic composition of red wines, resulting from varieties adapted to climate change, modulate fruity aroma?	110
12:40–12:45	Presentation by the Chair of the posters session I	
12:45–13:15	Nathalie Ollat / Cornelis van Leeuwen Awards presentation + Concluding remarks	
13:15–15:00	Wine tasting + Lunch	

Posters

Sessions A,B,C,D,E - Monday 08:00 / Wednesday 12:30 ; Sessions F,G,H,I - Wednesday 12:30 / Friday 14:00

Session A : Integrated terroir studies, from methodologies to landscapes		
Poster 1	Isabella Ghiglieno * Biodiversity in the vineyard agroecosystem: exploring systemic approaches	A9
Poster 2	Sandra Bravo First step in the preparation of a soil map of the protected designation of origin Valdepeñas (Central, Spain)	A10
Poster 3	Sandra Bravo Protected designation of origin (D.P.O.) Valdepeñas: classification and map of soils	A11
Poster 4	Maria Heinrich austrianvineyards.com: online viewer of all designations of Austrian wine	A12
Poster 5	Alenka Mihelcic * Different soil types and relief influence the quality of Merlot grapes in a relatively small area in the Vipava Valley (Slovenia) in relation to the vine water status	A13
Poster 6	Hugo Fernandez-Mena Grapevine yield-gap: identification of environmental limitations by soil and climate zoning in Languedoc-Roussillon region (south of France)	A14
Poster 7	Brent Sams Spatiotemporal patterns of chemical attributes in ' <i>Vitis vinifera</i> ' L. cv. Cabernet Sauvignon vineyards in Central California	A15
Poster 8	Gavin Duley * How distinctive are single vineyard Gewürztraminer musts and wines from Alto Adige (Italy) based on untargeted analysis, sensory profiling, and chemometric elaboration?	A16
Poster 9	Christian Gary Traditional agroforestry vineyards, sources of inspiration for the agroecological transition of viticulture	A17
Poster 10	Gwenaël Morin * Downscaling of remote sensing time series: thermal zone classification approach in Gironde region	A18
Poster 11	Darko Jaksic Spatial determination of areas in the Western Balkans region favorable for organic production	A19
Session B : Smart technologies for terroir studies		
Poster 12	Cassandra Collins Mapping and tracking canopy size with VitiCanopy	B6
Poster 13	Tommaso Nicolato $\delta^{13}\text{C}$: A still underused indicator in precision viticulture	B7
Poster 14	Jacques Rousseau Use of multispectral satellite for monitoring vine water status in mediterranean areas	B8
Poster 15	María Dolores Loureiro Rodríguez VINIoT: Precision viticulture service for SMEs based on IoT sensors network	B9
Poster 16	Carole Feilhes / Clara Gérardin VINIoT - Precision viticulture service	B10

Session C : Soil physical, chemical and microbiological properties and their impact on vine physiology		
Poster 17	Elena Baraza Effect of the commercial inoculum of arbuscular mycorrhiza in the establishment of a commercial vineyard of the cultivar "Manto negro"	C5
Poster 18	Jorge Ducati Variations of soil attributes in vineyards influence their reflectance spectra	C6
Poster 19	Arantxa Molins Effect of one-year cover crop and arbuscular mycorrhiza inoculation in the microbial soil community of a vineyard	C7
Poster 20	Laure Gontier Diagnosis of soil quality and evaluation of the impact of viticultural practices on soil biodiversity in a vineyard in southwestern France	C8
Poster 21	Vincent Lailheugue * Influence of grapevine rootstock/scion combination on rhizosphere and root endophytic microbiomes	C9
Session D : Adaptation to climate change through cultural practices		
Poster 22	Ana Aizpurua Influence of a spontaneous cover crop on the vineyard and soil erosion under Mediterranean climate	D16
Poster 23	Fernando Alves Combined effects of climate, soils, and deficit irrigation on yield and quality of the Touriga Nacional under high atmospheric demand at Douro Region	D17
Poster 24	Felicidad de Herralde Influence of agronomic practices in soil water content in mid-mountain vineyards	D18
Poster 25	Coralie Dewasme Impact of changes in pruning practices on vine growth and yield	D19
Poster 26	Thierry Dufourcq Effect of fertigation strategies to adapt PGI Côtes de Gascogne production to hot vintage	D20
Poster 27	Amelia Montoro The modification of cultural practices in grapevine cv. Syrah, does it modify the characteristics of the musts?	D21
Poster 28	Jorge Queiroz Second pruning as a strategy to delay maturation in cv. 'Touriga nacional' in the Portuguese Douro region	D22
Poster 29	Lukas Egarter Vigl Elevational range shifts of mountain vineyards: Recent dynamics in response to a warming climate	D23
Poster 30	Mercedes Fourment Post-veraison shoot trimming in Tannat and Merlot: preliminary results on yield components, plant balance and berry composition	D24
Poster 31	Marijan Bubola Modulation of berry composition by different vineyard management practices	D25
Poster 32	Alicia Pou Effects of organic mulches on the soil environment and yield of grapevine	D26
Poster 33	Eugenia Monaco A multidisciplinary approach to evaluate the effects of the training system on the performance of "Aglianico del Vulture" vineyards	D27

Poster 34	Jacques Rousseau Grapevine varietal diversity as mitigation tool for climate change: Agronomic and oenological potential of 14 foreign varieties grown in Languedoc region (France)	D28
Poster 35	Florian Haas Green berries on Gewürztraminer (<i>Vitis vinifera</i> L.) in South Tyrol, Italy	D29
Poster 36	María José Graña Caneiro The plantation frame as a measure of adaptation to climate change	D30
Poster 37	Rebeca Murillo-Peña * Effect of regulated deficit irrigation regime on amino acids content of Monastrell (<i>Vitis vinifera</i> L.) grapes	D31
Poster 38	Rebeca Murillo-Peña * Phenolic composition of Tempranillo Blanco grapes changes after foliar application of urea	D32
Poster 39	Rebeca Murillo-Peña * Evolution of the amino acids content through grape ripening: Effect of foliar application of methyl jasmonate with or without urea	D33
Poster 40	Igor Gonçalves Climate change impacts on Douro region viticulture and adaptation measures	D34
Session E : Climate change projections		
Poster 41	Helder Fraga Heatwaves and grapevine yield in the Douro region, crop model simulations	E7
Poster 42	Helder Fraga Grapevine sugar concentration model in the Douro Superior, Portugal	E8
Poster 43	Darko Jaksic Current climate change in the Oplenac wine-growing district (Serbia)	E9
Poster 44	Bryan Berenguer Modeling the suitability of Pinot noir in Oregon's Willamette valley in a changing climate	E10
Poster 45	Jesús Martínez Projected changes in vine phenology of two varieties with different thermal requirements cultivated in La Mancha DO (Spain) under climate change scenarios	E11
Session F : Climate vine interaction including climate change impacts		
Poster 46	Laura Massano * Impact of climate variability and change on grape yield in Italy	F22
Poster 47	Paige Breen * Updating the Winkler index: an analysis of Cabernet sauvignon in Napa Valley's varied and changing climate	F23
Poster 48	Jeanne Thibault * Simulating climate change impact on viticultural systems in historical and emergent vineyards	F24
Poster 49	Ricardo Egipto * Low-cost sensors as support tool to monitor soil-plant heat exchanges in a Mediterranean vineyards	F25
Poster 50	Mark Gowdy * Estimating bulk stomatal conductance of grapevine canopies	F26

Poster 51	Ghislaine Hilbert Anthocyanin profile is differentially affected by high temperature, elevated CO ₂ and water deficit in Tempranillo (<i>Vitis vinifera</i> L.) clones	F27
Poster 52	Nazareth Torres What are the optimal ranges and thresholds for berry solar radiation for flavonoid biosynthesis	F28
Poster 53	Christian Gary Grapevine yield estimation in a context of climate change: the GraY model	F29
Poster 54	Vanda Pedrosa Evaluation of climate change impacts at the Portuguese Dão terroir over the last decades: observed effects on bioclimatic indices and grapevine phenology	F30
Poster 55	Dragoslav Ivanisevic Grape must quality and mesoclimatic variability in Fruška Gora wine-growing region, Serbia	F31
Session G : Adaptation to soil and climate through the choice of plant material		
Poster 56	Agnès Destrac Irvine Phenological characterization of a wide range of <i>Vitis vinifera</i> varieties	G16
Poster 57	Sergio Serrano Parra * Long-term drought resilience of 13 traditional red grapevine varieties from a semi-arid region	G17
Poster 58	Andres Zhou-Tsang * De novo <i>Vitis champinii</i> whole genome assembly allows rootstock-specific identification of potential candidate genes for salt and drought tolerance	G18
Poster 59	José Ángel Amorós Leaf vine content in nutrients and trace elements in La Mancha (Spain) soils: influence of the rootstock	G19
Poster 60	Mathieu Larrey * Genotypic variability of root architectural traits and putative implications for water use efficiency in grafted grapevine	G20
Poster 61	Alejandro Calvo-López * Towards adaptation to climate change in Rioja: Quality evaluation of wines obtained from Grenache x Tempranillo selections	G21
Poster 62	Marine Morel Rootstock regulation of scion phenotypes: the relationship between rootstock parentage and petiole mineral concentration	G22
Poster 63	M. Esperanza Valdés Impact of geographical location on the phenolic profile of minority varieties grown in Spain. Red grapevines	G23
Session H : Global and multidisciplinary approaches for vineyard sustainability		
Poster 64	María Dolores Loureiro Rodríguez Sustainable fertilisation of the vineyard in Galicia (Spain)	H9
Poster 65	Clara Le Cap * Mechanisms involved in the heating of the environment by the aerodynamic action of a wind machine to protect a vineyard against spring frost	H10
Poster 66	Grégoire Loupit * Understanding graft union formation by using metabolomic and transcriptomic approaches during the first days after grafting in grapevine	H11
Poster 67	Cassandra Collins Assessing the relationship between cordon strangulation, dieback, and fungal trunk disease symptom expression	H12

Poster 68	Manuel Oliveira The potential of multispectral/hyperspectral technologies for early detection of “flavescence dorée” in a Portuguese vineyard	H13
Poster 69	Tommaso Nicolato Measurement of redox potential as a new analytical winegrowing tool	H14
Poster 70	Lionel Savignan Copper contamination in vineyard soils of Bordeaux: spatial risk assessment for the replanting of vines and crops	H15
Poster 71	Etienne Neethling Local adaptation tools to ensure the viticultural sustainability in a changing climate	H16
Poster 72	Antonello Bonfante A predictive model of spatial ECa variability in the vineyard to support the monitoring of plant status	H17
Session I : Impact of terroir and climate change on wine quality and typicity		
Poster 73	Alex Tavernar * Impact of yeast derivatives to increase the phenolic maturity and aroma intensity of wine	I11
Poster 74	António Graça Is (wine) terroir a valid concept under a changing climate?	I12
Poster 75	Duncan Hamm Inhibition of <i>Oenococcus oeni</i> during alcoholic fermentation by a selected <i>Lactiplantibacillus plantarum</i> strain	I13
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