



Integrated Protection in Viticulture

IOBC-WPRS

Meeting of the Working Group

“Integrated Protection in Viticulture”

Logroño, La Rioja (Spain)

3rd-5th October 2023

PROGRAM

Monday, 2 October 2023

Accommodation in the hotel

20:00 Cocktail reception (Espacio Lagares)

Welcome by Dr. José Miguel Martínez Zapater, Director of the Institute of Grapevine and Wine Sciences (ICVV)

Welcome by Councilor

Demonstrative video of La Rioja (Wine Region and Cultural Heritage)

Tuesday, 3 October 2023

08:00-09:00 Registration

09:00-09:10 Welcome by University and Local Authorities (UR; ICVV; La Rioja Government)

09:10-09:25 IOBC-WPRS Presentation

Christoph Hoffmann (convenor), **Dominique Mazzi** (liaison officer)

09:25-09:30 OIV Presentation

Christoph Hoffman (Scientific secretary of the OIV Commission Viticulture)

09:30-10:30 **OP OPENING CONFERENCE: Grapevine vulnerability to drought and pathogens in the context of climate change.** *Chloé Delmas, INRAE, France.*

10:30-12:30 Session 1

Topic 1.1. Advances in knowledge and new solutions against diseases: bacteria, phytoplasmas and virus

Chairpersons: Agnès Calonnec and René Fuchs

10:30-10:45 **O01 High-throughput monitoring as an approach for an early detection of quarantine pests in viticulture.** *Anna Markheiser, Sandra Biancu, Nina Minges, Christine Seinsche, Kerstin Zikeli, Michael Maixner, Wilhelm Jelkmann, Christoph Hoffmann*

10:45-11:00 **O02 Investigations on the transmission pathway of 16SrV-C phytoplasma from *Clematis vitalba* to *Vitis vinifera* by *Phlogotettix cyclops*.** *Gudrun Strauss, Helga Reisenzein*

11:00-11:15 **O03** **Climate change impacts on mealybugs vectoring grapevine leafroll disease.** *Maria Schulze-Sylvester, Annette Reineke*

11:30-12:00 **Coffee break**

12:00-12:30 **KN1** **Keynote lecture: Grapevine virus diseases: why should we care? a multidisciplinary effort to mitigate their impact in British Columbia, Canada.** *José Ramón Úrbez-Torres, Sudarsana Poojari, Patricia Bowen, Carl Bogdanoff, Kevin Usher, Thomas Lowery. Agriculture and Agri-Food, Canada*

12:30-13:30 Session 2

Topic 1.2. Advances in knowledge and new solutions against diseases: mildews

Chairpersons: Laura Mugnai and Josep Armengol

12:30-12:45 **O04** **Copper alone is not enough.** *René Fuchs, Stefan Schumacher, Mario Steinger, Gottfried Bleyer*

12:45-13:00 **O05** **The current state of fungus-resistant grape varieties in Switzerland.** *Kathleen Mackie-Haas, Marie Blackford, Jean-Laurent Spring, Olivier Felix*

13:00-13:15 **O06** **The potential of lecithins as a plant protection product in grapevine, the case of *Plasmopara viticola*.** *Diego Llamazares De Miguel, Ana María Diez Navajas*

13:15-13:30 **O07** **Predict downy mildew infection in partially resistant grapevines.** *Irene Salotti, Federica Bove, Othmane Taibi, Vittorio Rossi*

13:30-15:30 **Lunch**

15:30-17:00 Session 3

Topic 1.2. Advances in knowledge and new solutions against diseases: mildews

Topic 1.3. Advances in knowledge and new solutions against diseases: fungal trunk diseases

Chairpersons: Chloé Delmas and José Ramón Úrbez-Torres

15:30-16:00 **KN2** **Keynote lecture: Plant disease models and their impact in the integrated management of the vineyards.** *Elisa González-Domínguez, Horta srl, Italy*

16:00-16:15 **O08** **Chitosan application to induced resistance for an innovative and sustainable management of grapevine downy mildew.** *Gianfranco Romanazzi, Simone Piancatelli, Marwa Mourni*

16:15-16:30 **O09** **A qPCR protocol for the quantification of *Erysiphe necator* chasmothecia in grapevine bark samples.** *Othmane Taibi, Maela León, Federica Bove, Vittorio Rossi, Josep Armengol, Elisa González-Domínguez, Mónica Berbegal*

16:30-16:45 **O10** ***In vitro* biofilm formation of the Esca pathogen fungus *Phaeomoniella chlamydospora*.** *Zoltán Karácsony, Nikolett Molnár, Dóra Szabó, Kálmán Zoltán Váczy*

16:45-17:00 **O11** **Control of *Botryosphaeria dieback* and black-foot pathogens in grapevine propagation material using *Bacillus subtilis* PTA-271 and *Trichoderma atroviride* SC1.** *Catarina Leal, David Gramaje, Florence Fontaine, Nicolas Richet, Patricia Trotel-Aziz, Josep Armengol*

17:00-17:15 **Break**

17:15-18:00 Session 4

Topic 1.3. Advances in knowledge and new solutions against diseases: fungal trunk diseases

Chairpersons: Cecilia Rego and Akif Eskalen

- 17:15-17:30 **O12 Field control of *Botryosphaeria* dieback of grapevines by using locally sourced *Trichoderma* species.** José Ramón Úrbez-Torres, Jinxz Pollard-Flamand, Julie Boulé
- 17:30-17:45 **O13 Antifungal effect of Cu based nanocomposites against *Pleurostoma richardsiae*, *Dactylonectria torresensis* and *Fusarium oxysporum*.** Marie Zahrádková, Kateřina Štůsková, Jan Wohlmuth, Milan Špetík, Lucie Frejlichová, Dana Homolová, Zuzana Bytešníková, Tomáš Kiss, Jakub Pečenka, Lukáš Richtera, David Gramaje, Aleš Eichmeier
- 17:45-18:00 **O14 Mechanically pruning vs hand-pruning: the effect on incidence and severity of grapevine trunk disease pathogens.** Minette Havenga, Matthew Webber, Lizel Mostert, Francois Halleen

18:00-20:00 **Poster viewing session and cocktail**

Wednesday, 4 October 2023

08:30-10:00 Session 5

Topic 1.4. Advances in knowledge and new solutions against diseases: *Botrytis* and black rot

Topic 1.5. Advances in knowledge and new solutions against diseases: mycobiome and sour rot

Chairpersons: Ales Eichmeier and Catarina Leal

- 08:30-08:45 **O15 Specific effects of copper on the mycobiome of grapevine leaf surfaces.** Falk Behrens, Yannick Ditton, Michael Fischer
- 08:45-09:00 **O16 Combining indicators for a better understanding and management of black rot risk?** Agnès Calonnec, Ghislain Delestre, Philippe Cartolaro
- 09:00-09:15 **O17 Etiology and Epidemiology of Sour Rot in Ontario, Canada.** Cristina Huber, Debra Inglis, Wendy McFadden-Smith
- 09:15-09:30 **O18 New insights into sour rot: a complex interaction between the microbial community, vinegar flies and weather.** Ignacio Romero Lozano, Sébastien Hévin, Valérie Hofstetter, Patrik Kehrlj
- 09:30-09:45 **O19 Pruning wound protection products induce alterations in the wood mycobiome profile of grapevines.** Giovanni Del Frari, Marie Rønne Aggerbeck, Alex Gobbi, Chiara Ingrà, Lorenzo Volpi, Teresa Nascimento, Alessandra Ferrandino, Lars Hestbjerg Hansen, Ricardo Boavida Ferreira
- 09:45-10:00 **O20 Promising future for *Botrytis cinerea* (Helotiales: Sclerotiniaceae) management using strategies based on *Xenorhabdus* and *Photorhabdus* (Morganellaceae) in vineyards.** Ignacio Vicente-Díez, Elizabeth Carpentero, Xoaquín Moreira, Victoria Pastor, Mar Vilanova, Alicia Pou, Raquel Campos-Herrera

10:00-10:30 **Coffee break**

10:30-12:00 Session 6

Topic 2. New strategies in arthropod pest control

Chairpersons: Saioa Legarrea and Carlo Duso

- 10:30-10:45 **O21 Habitat management as an integrative tool for the control of grapevines Flavescence dorée.** *Alan Oggier, Mauro Jermini, Marco Conedera, Christophe Debonneville, Olivier Schumpp, Attilio Rizzoli*
- 10:45-11:00 **O22 Trapping *Scaphoideus titanus* (Hemiptera: Cicadellidae) in Italian vineyards: where, when and why?** *Bruno Bagnoli, Giovanni Benelli, Piero Braccini, Vieri Caciagli, Renato Ricciardi, Patrizia Sacchetti, Andrea Lucchi*
- 11:00-11:15 **O23 Studies on the *Scaphoideus titanus* phenology in a diversified region: implications for management strategies.** *Gianluca Spessotto, Stefan Cristian Prazaru, Francesco Pavan, Carlo Duso*
- 11:15-11:30 **O24 Kaolin against *Scaphoideus titanus* as an alternative to natural pyrethrins in Swiss vineyards?** *Christian Linder, Michel Jeanrenaud, Patrik Kehrl*
- 11:30-11:45 **O25 Spatial and temporal distribution of leafhoppers and their parasitoids in vineyards located in north-eastern Italy.** *Stefan Cristian Prazaru, Elena Merlin, Francesca Carriero, Isabel Martinez Sanudo, Alberto Pozzebon, Francesco Pavan, Carlo Duso*
- 11:45- 12:00 **O26 Sugar feeders as a tool for ant-mediated plant defense against leafcutter ants in grapevine.** *Maria Schulze-Sylvester, Francisco Sylvester, Victor Manuel Torres, José Antonio Corronca*

12:00-12:15 **Break**

12:15-13:45 Session 7

Topic 2. New strategies in arthropod pest control

Chairpersons: Raquel Campos-Herrera and Nicola Mori

- 12:15-12:45 **KN3 Keynote lecture: Insect senses and pest management.** *César Gemenó, University of Lleida, Spain*
- 12:45-13:00 **O27 Waves and tortricids: Ultrasounds, vision and pest control.** *Alejandro Martín-Gabarrella, Luis Elvira-Segura, Gregor Belušič, César Gemenó*
- 13:00-13:15 **O28 Grapevine yeast attracts grapevine moth.** *Carles Amat, Ramon Gonzalez, Pilar Morales, César Gemenó*
- 13:15-13:30 **O29 A double dispenser for mating disruption of two grape pests: *Lobesia botrana* and *Cryptoblabes gnidiella*.** *Renato Ricciardi, Giovanni Benelli, Francesca Cosci, Andrea Iodice, Francesco Savino, Edith Ladurner, Andrea Lucchi*
- 13:30-13:45 **O30 Oviposition by three tortricid moths on filter paper treated with different doses of gustatory stimuli.** *Carles Amat, Margherita Marmugi, Giovanni Benelli, Andrea Lucchi, Rajendra Prasad, Renato Ricciardi, César Gemenó*

13:45-15:45 **Lunch**

16:00-20:00 **Congress Tour** Vivanco Winery and Museum of Wine Culture

Departure from Riojaforum

Thursday, 5 October 2023

08:30-10:45 Session 8

Topic 3. Sustainable management of soil and weeds

Topic 4. IPM implementation and tools for sustainable viticulture

Chairpersons: Claudio Ioriatti and Andrea Lucchi

- 08:30-09:00 **KN4 Keynote lecture: Cover crops and organic mulches for weed management in Mediterranean vineyards.** *Jordi Recasens, University of Lleida, Spain*
- 09:00-09:15 **O31 How organic mulches affect spontaneous weed vegetation and soil properties.** *Andreu Mairata, David Labarga, Miguel Puelles, Joaquín Huete, Javier Portu, Luis Rivacoba, Alicia Pou*
- 09:15-09:30 **O32 Weed management by cover crops in organic Mediterranean vineyards.** *Diego Barranco-Elena, Jordi Recasens, Àurea Guiu, Bàrbara Baraibar*
- 09:30-09:45 **O33 Managing viticultural ecosystems using functional biodiversity indicators and agroecology approaches for sustainable production and consumer engagement: the case of SOGRAPE in Portugal and Spain.** *António Graça, Natacha Fontes, José Manso, João Vasconcelos Porto, Mafalda Guedes, Isabel Morais, María Barúa, Alberto Saldón, Luisa Freire*
- 09:45-10:00 **O34 Phytoseiid mites in European wine-growing regions were influenced at the field and landscape scale.** *Stefan Möth, Sylvie Richart-Cervera, Maria Comsa, Rafael Alcalá Herrera, Christoph Hoffmann, Sebastian Kolb, Daniela Popescu, Jo Marie Reiff, Adrien Rusch, Pauline Tolle, Andreas Walzer, Silvia Winter*
- 10:00-10:15 **O35 Entomopathogenic nematodes for controlling *Lobesia botrana* in vineyards: fine-tuning of application, target area, and timing.** *Raquel Campos-Herrera, María del Mar González-Trujillo, Ignacio Vicente-Díez, Elizabeth Carpentero, Miguel Puelles, Elisabet Vaquero, Rasa Cepulyte*
- 10:15-10:30 **O36 Entomopathogenic fungi for the control of grapevine sap-sucking insects.** *Riccardo Barbera, Nicola Bodino, Daniele Vitti, Domenico Bosco, Paola Dolci*
- 10:30-10:45 **O37 Enhanced biocontrol of vine mealybug, *Planococcus ficus*, using hydrogel-based control of sugar-feeding ants.** *David Haviland, Stephanie Rill, Chelsea Gordon, Nathan Mercer, Kent Daane*

10:45-11:30 **Coffee break and
Poster viewing session**

11:30-13:30 Session 9

Topic 4. IPM implementation and tools for sustainable viticulture.

Chairpersons: Tirtza Zahavi and Christoph Hoffmann

- 11:30-11:45 **O38 Deciphering the effects of agronomical practices on *Aspergillus* incidence and carpospheres microbial communities of grapevine.** *Stefanos Testempasis, Christina Papazlatani, Serafeim Theocharis, Panagiotis Karas, Stefanos Koundouras, Dimitrios Karpouzas, George Karaoglanidis*
- 11:45-12:00 **O39 Impact of weather data sources on infection risk provided by a decision support system and implications in disease management.** *Sara Elisabetta Legler, Elisa Gonzalez-Domínguez, Vittorio Rossi*

- 12:00-12:15 **O40** **Parametrization and validation of a Physiologically Based Demographic Model (PBDM) for *Scaphoideus titanus* Ball (Fam: Cicadellidae).** Marta Corbetta, Sara Elisabetta Legler, Vittorio Rossi
- 12:15-12:30 **O41** **Field evaluation of endophytic and rhizospheric bacteria against grapevine trunk diseases.** Marcelo Bustamante, Karina Elfar, Akif Eskalen
- 12:30-12:45 **O42** **Adaptation of the VitiMeteo forecasting system to PIWIs.** Stefan Schumacher, Caroline Mertes, Thomas Kaltenbach, Nour Sawas, Barbara Augenstein, Ronald Krause, Gottfried Bleyer, René Fuchs
- 12:45-13:00 **O43** **Hybrid grapevine resistance to downy and powdery mildew in Israel.** Tamir Zonenberg, Tirtza Zahavi, Ofir Degani, Meir Shlissel, Mery Dafny-Yelin

13:00-15:00 **Lunch**

15:00-16:00 Session 10

Topic 4. IPM implementation and tools for sustainable viticulture.

Chairpersons: Sara Elisabetta Legler and Gianfranco Romanazzi

- 15:00-15:15 **O44** **Impact of sustainable farming interventions in the vineyard and its surrounding area on the dynamics of pest and natural enemies' populations in Rioja Alavesa, Spain.** Bárbara Sebastián, Luis G. Santesteban, Nazareth Torres, Ignacio Arzo, Maite Loidi, Luis Rubén Román-Fernández, Ainara Crespo-Susperregui, Gonzalo Sainz de Samaniego, Julián Palacios
- 15:15-15:30 **O45** **Are Farm to fork strategy goals reasonable and achievable? State of the art of Península de Setubals winegrowers.** Miguel Cachão, Ana Chambel, Sérgio Pinto
- 15:30-15:45 **O46** **Long-term historical characterization of French vineyard exposure to pests and diseases: case study of Bordeaux and Champagne regions.** Marc Fermaud, Anne Merot, Lionel Delbac, Leslie Daraignes, Marianne Fraysse, Nathalie Smits
- 15:55-16:00 **O47** **Effects of organic management, pesticide reduction, and landscape diversification for arthropod conservation in viticulture.** Marvin Kaczmarek, Martin H. Entling, Christoph Hoffmann

16:00-17:00 **CC** **CLOSING CONFERENCE (online participation): Agroecology: Designing biodiverse and resilient vineyard agroecosystems for a planet in crisis.** Miguel A. Altieri, University of California, Berkeley, USA

17:00-18:00 Closing remarks and elections for convenor and deputy convenor

Christoph Hoffmann, Dominique Mazzi

20:00 **Gala dinner** Bodegas Franco Españolas

Includes a winery free tour. Dinner starts at 21:00

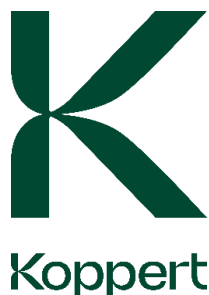
POSTER CONTRIBUTIONS

- P01** Characterization of Czech PIWI cultivars using SSR markers linked to mildew resistance loci. Kateřina Baránková, Miloš Michlovský, Ivana Flašingerová
- P02** DNA metabarcoding reveals that grapevine parts harbor different, niche-specific mycobiome. Adrienn Geiger, Carla Mota Leal, Zoltán Karácsony, Richard Golen, Kálmán Zoltán Váczy, József Geml
- P03** *In vitro* interactions between *Armillaria* sp. and *Trichoderma* sp. collected from mushroom crop residues. David Labarga, Ignacio Vicente-Díez, Miguel Puelles, Andreu Mairata, Alicia Pou.
- P04** Increasing microalgae biomass feedstock by valorizing wine gaseous and liquid residues. Miguel Cachão, Ana Chambel
- P05** Nature resistance to *P. viticola* in interspecific grapevine genotypes revealed by MASS and transcriptomic. Martin Hádlík, Kateřina Baránková, Viera Kovacova
- P06** New Biocontrol agents for fungi obtained from vermicompost of sewage sludge and grape bagasse. Vanessa Redondo, Nadia Cambra, Pablo Pérez, Manuel Aira, Jorge Domínguez
- P07** *In vitro* evaluation of the antifungal activity of vermicompost teas against the phytopathogenic fungus *Botrytis cinerea*. Vanessa Redondo, Nadia Cambra, Pablo Pérez, Manuel Aira, Jorge Domínguez
- P08** Preliminary trial of the effect of *Trichoderma atroviride* I-1237 on the control of *Phomopsis* Cane and Leaf Spot caused by *Phomopsis viticola* (Sacc.) Jorge Sofia, Raul Sofia, João Vila-Maior
- P09** Survey and diversity of Grapevine Pinot gris virus in La Rioja region of Spain. Aleš Eichmeier, Jakub Pečenka, Eliška Hakalová, Tomáš Kiss, Beatriz López Manzanares, Milagros Marín Terrazas, David Gramaje, José Luis Ramos Sáez de Ojer
- P10** REVINE. Regenerative agricultural approaches to improve ecosystem services in Mediterranean vineyards. Miguel Cachão, Ana Chambel, Sérgio Pinto
- P11** Effect of *Trichoderma atroviride* SC1 and *Bacillus subtilis* PTA-271 on grapevine rhizosphere microbiome and plant defenses. Catarina Leal, Rebeca Bujanda, Josep Armengol, Patricia Trotel-Aziz, Florence Fontaine, Ales Eichmeier, David Gramaje
- P12** Endophytic microorganisms for trunk diseases control in Chilean patrimonial vineyards. Daina Grinbergs, Javier Chilian, Mariana Isla, Juan Felipe Alfaro-Quezada
- P13** Implementation of qPCR for the assessment of Grapevine trunk diseases in Chilean patrimonial vineyards. Javier Chilian, Daina Grinbergs, Mariana Isla, Juan Felipe Alfaro-Quezada
- P14** The roles of terroir and vintage in the composition of the grapevine pathobiome. Carla Mota Leal, Adrienn Geiger, Anna Molnár, Glodia Kgobe, Kálmán Zoltán Váczy, József Geml
- P15** *In vitro* and nursery evaluation of electrolyzed water to control fungal grapevine trunk pathogens. Mónica Berbegal, Antonia Frinkler, Farah Ben Atia, Adolfo Blasco, José Vicente Ros-Lis, Grégoire Gaume, Josep Armengol

- P16 Innovative biopesticides to control grapevine fungal pathogens.** *Serena Medaglia, Lucía González, David Gramaje, Mónica Berbegal, M^a Dolores Marcos, Andrea Bernardos, Josep Armengol, Ramón Martínez-Máñez*
- P17 Grapevine dieback caused by *Botryosphaeriaceae* species *Paraconiothyrium brasiliense*, *Seimatosporium vitis* and *Truncatella angustata* in Piedmont: characterization and pathogenicity.** *Greta Dardani, Laura Mugnai, Vladimiro Guarnaccia*
- P18 Evaluation of the risk related to *Halyomorpha halys* in the Libournais wine region.** *Lionel Delbac, Léna Laflaquière, Pietro Achilli, Raphaël Rouzes*
- P19 *Cryptoblabes gnidiella* and their natural enemies in Italian vineyards: an update.** *Renato Ricciardi, Augusto Lonj, Giovanni Benelli, Andrea Lucchi*
- P20 Is the grape's microbiome responsible for *Drosophila suzukii* attraction to different grape varieties?** *Maryam Goodarzi, Falk Behrens, Christoph Hoffmann*
- P21 Protocol "AVELEDA DIY - Do It Yourself" for determination of the risk of primary infection and the detection of oospores maturity of *Plasmopara viticola*.** *António Azevedo Guedes, Pedro Maria Barbosa, Maria José Moutinho*
- P22 Fungicide reduction enhances beneficial arthropods in grapevine.** *Jo Marie Reiff, Martin H. Entling, Christoph Hoffmann*
- P23 Efficacy of recent active aerosol emitters versus conventional passive dispensers for the mating disruption of grapevine moths.** *Denis Pasquier, Patrik Kehrl*
- P24 New multiple linear regression models for predicting the European grapevine moth (*Lobesia botrana*) in Austria.** *Kerstin Kolkmann, Sylvia Blümel, Josef Eitzinger*
- P25 Diseases and arthropods susceptibility of *Vitis vinifera* in the grape growing regions of Quebec, Canada.** *Caroline Provost, Andréanne Héabert-Haché*
- P26 The Use of knotwood extracts for potential bioprotection against grapevine trunk diseases.** *Loriane Merlen, Lucas Galimand, Céline Tarnus, Christine Gerardin, Philippe Gerardin, Mélanie Gellon*
- P27 Bismuth subsalicylate: fungistatic and plant defence stimulator for grapevine trunk diseases management.** *Loriane Merlen, Céline Tarnus, Christelle Delaite, Mélanie Gellon*
- P28 Field investigation on phenology, ecology and integrated management of *Pseudococcus comstocki* in north-eastern Italy vineyards.** *Enrico Marchesini, Massimiliano Pasini, Gabriele Posenato, Lorenzo Tosi, Nicola Mori*
- P29 Development of High-Resolution Melting assay for detection of Grapevine Trunk Disease fungal pathogens.** *Filipe Azevedo-Nogueira, Beatriz Silva, Ana Gaspar, Cecília Rego, David Gramaje, Paula Martins-Lopes*
- P30 Effects of *Trichoderma atroviride* SC1 on nursery vines and GTDs pathogens.** *Fabio Osti, Alessandra Benigno, Giuseppe Carella, Elisa Metruccio, Laura Mugnai, Stefano Di Marco*
- P31 Reasoned approach to *Botrytis cinerea* biocontrol in grapevine.** *Valeria Altieri, Vittorio Rossi, Giorgia Fedele*

- P32** Portrait of the distribution of grapevine trunk diseases in Quebec, Canada, and consideration of the microbiome in their epidemiology. Caroline Provost, *Philippe Constant, Audrey-Anne Durand*
- P33** Validation of a Physiologically Based Demographic Model (PBDM) to predict adults and juvenile stages of *Lobesia botrana* in Spain. *Marta Corbetta, Francisco Martínez, Jordi Martí, Sara E. Legler, Elisa Gonzalez-Domínguez, Vittorio Rossi*
- P34** Fungicide sensitivity and resistance assessment of *Plasmopara viticola* populations from Basque Country vineyards. Helene Sánchez-Zelaia, *Mónica Hernández, Ana M. Díez-Navajas*
- P35** Climate-resilient disease management in viticulture using AI-based Decision Support System (DSS). *Johannes Eifert, Kathleen Mackie-Haas, Luciano Moffatt, Dimitira Bourou Martin Wiederkehr, Ernst Arn, Sike Fieseler-Hein, Pierre-Henri Dubuis, Saurabh Pandey*
- P36** The importance of rural extension and advisory services to achieve a sustainable viticulture in a climate change scenario. Ana Chambel, *Miguel Cachão, Sérgio Pinto, Luis Mendes, Ana Cavaco, Maria Godinho*
- P37** Integrated Grape Production in Trentino (Northern Italy): where are we after thirty years since its first implementation? Claudio Ioriatti, *Valerio Mazzoni, Gianfranco Anfora, Alberto Gelmetti*
- P38** Different grapevine cultivar responses to black rot attack in Romania-Crăciunelu de Jos vineyard. *Maria Comşa, Liliana Lucia Tomoiagă, Horia-Silviu Răcoare, Alexandra Doina Sîrbu, Veronica Sanda Chedea, Maria-Doinița Muntean*
- P39** Field evaluation of sensitivity of disease resistant grape varieties to invertebrate pests. Tirtza Zahavi, *Shai Daniel, Shimon Pargamanik, Tamir Zonenberg, Mery Dafny-Yelin*
- P40** The entomopathogenic fungus *Metarhizium robertsii* and its endophytic potential in grapevine to regulate radicolle grape phylloxera populations. Mathilde Ponchon, *Daciana Papura, Denis Thiéry, Annette Reineke*

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