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Abstracts

Abstracts of invited Keynote lectures, Keynote and Oral presentations and Poster papers presented at the 17th Congress of the Mediterranean Phytopathological Union, July 6–10, 2025, in Bari, Italy

This Issue of *Phytopathologia Mediterranea* firstly outlines a summary of the Congress, and then publishes abstracts of all the invited Keynote papers, and offered Oral and Poster papers, that were presented at the Congress.

Preface

The 17th International Congress of the Mediterranean Phytopathological Union (MPU) was headlined as addressing "New Phytopathology Frontiers of Research and Education for Plant Health and Food Safety". The Congress was organized by the Mediterranean Phytopathological Union (MPU), and the Mediterranean intergovernmental organization CIHEAM Bari, International Centre for Advanced Mediterranean Agronomic Studies.

The Congress Plenary Session was opened with welcoming remarks by Dr Biagio Di Terlizzi, Director of CIHEAM Bari; Prof. Dimitri Tsitsigiannis, President of MPU; and Dr Ugo Della Marta, Director General of the Directorate for Food Hygiene, Safety and Nutrition (DGISAN) of the Italian Ministry of Health.

The Congress was attended by more than 350 participants from 38 countries: 19 countries in the Mediterranean region (Albania, Algeria, Croatia, Egypt, France, Greece, Israel, Italy, Jordan, Lebanon, Montenegro, Morocco, Palestine, Portugal, Slovenia, Spain, Syria, Tunisia, Turkey), eight elsewhere in Europe (Belgium, Germany, Hungary, Latvia, Lettonia, North Macedonia, Serbia, The Netherlands), and 11 other countries (Australia, Chile, Congo, Georgia, New Zealand, Pakistan, Reunion Island, South Africa, United Arab Emirates, United Kingdom, United States of America).

The congress was aimed to promote knowledge exchange and dialogue between science, institutions, industry and civil society, reinforcing a vibrant, connected, and forward-looking scientific community. Among these, beside researchers of the 15 National Plant Pathology or Plant Protection societies that are MPU members, people also attending included representatives from: IPPC-FAO, FAO-RNE, EUPHRESCO, Ministry of Agriculture, Food Sovereignty and Forests (MASAF), Directorate General for Food Hygiene, Food Safety and Nutrition (DGISAN), EPPO, EFSA, the National Research Council (CNR), the Apulia Region, the European Commission, and numerous universities and research centers.

Papers presented at the Congress included: 14 Keynote lectures, 36 Session Keynote papers, and research papers as 88 oral and 180 poster presentations, in a total of in 18 Congress sessions. Beyond its scientific scope, the Congress was a platform to strengthen existing partnerships and forge new collaborations across borders and research disciplines. This included links with the International Society for Plant Pathology, the International Society for Mycotoxicology, EUPHRESCO, and CIHEAM Bari, supporting advancements in plant health sciences as a pillar of the One Health approach recognizing the links between human, animal, plant, and environmental health.

CIHEAM Bari took active steps to make the Congress accessible to young researchers, especially from non-European regions. This included reduced registration and accommodation fees for students (including PhD candidates) and early career scientists.

An all-day field trip on 10 July included observations of ancient olive trees infected by *Xylella fastidiosa* and the characteristic sites of Alberobello, providing a unique opportunity to connect field and territory observations with the latest research and disease mitigation strategies.

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To recognize scientific excellence of the early career researchers, MPU presented awards for the oral presentations by Marah Abukhmaish (Palestine), Serafina Amoia (Italy) and Marco Crudele (Italy), and the poster papers of Martini Florian (Belgium), Luiza Sánchez-Pereira (Spain), and Aleksandra Susnjar (Republic of Serbia). The Congress also hosted the award ceremony for the 4th edition of the video competition *Plant Health TV: Promoting the Importance of Plant Health Research*. Organized by EUPHRESCO III, CIHEAM Bari, the Plant Biosecurity Research Initiative (PBRI), IPPC, and CABI, this competition highlights global efforts in plant health research. The award recipient was Spyridoula Dimitropoulou, for the video "Saving Greece's plane trees: digital technologies for early detection of *Ceratocystis platani*". The award included a 2-week internship in Australia, sponsored by the PBRI.

In its concluding session, the congress identified key frontiers and pressing challenges in plant pathology that must be addressed, including:

- The integration of Plant Health within the One Health framework.
- The role of climate change in driving the emergence and spread of new pests and diseases.
- The urgent need for predictive tools and early warning systems.
- The integration of digital technologies, genomics, and field ecology into plant health research and practice.
- The necessity of addressing biosecurity vulnerabilities and regulatory gaps.
- The imperative of safeguarding global food security and biosecurity in increasingly complex and interconnected supply chains.

To respond effectively to these developments and challenges, interdisciplinary and collaborative educational models across all professional levels are essential. Such models are crucial for training a new generation of plant pathologists equipped with the necessary skills, technological expertise, and cross-sectoral understanding.

Furthermore, strong support for early career researchers is vital to ensure continuity, innovation, and the advancement of knowledge in the field.

In this context, the Mediterranean Phytopathological Union (MPU), in collaboration with national, regional, and international networks, aims to significantly strengthen interdisciplinary and cross-border cooperation in the field of plant health, while fostering meaningful dialogue among the scientific community, regulatory bodies, and society at large.

Photographs from the Congress are available at: https://ciheambaricongressmpu2025.org/photo-gallery/

Editorial disclaimer

The Co-Editors-in-Chief of Phytopathologia Mediterranea present these Congress Abstracts with the proviso that all abstracts are published as submitted by the respective paper authors. The abstracts have not been refereed using the normal standard peer review processes applied for research papers in this journal.

gene. This six-year study (2017–2022) aimed to investigate the emergence and distribution of zoxamide-resistant *P. viticola* strains under different field conditions and fungicide use histories. Sensitivity was assessed through biological assays on the oospores and complemented by molecular screening for resistance-associated mutations. A total of 126 samples were collected from 57 vineyards, mostly located in North-Eastern Italy. The majority (90%) showed full sensitivity to zoxamide (EC_{50} < 0.2 mg L^{-1}; EC_{95} and MIC < 10 mg L^{-1}). Thirteen samples exhibited reduced sensitivity (MIC >100 mg L^{-1}), but only two showed a consistent presence (24–33%) of resistant oospores at 100 mg L^{-1}. Resistance was mainly observed in vineyards where zoxamide had been applied four or more times per season. Multiple polymorphisms at codon 239 of the β- tubulin gene were identified through sequencing, including the known C239S and C239G mutations and a potentially novel C239T variant. These findings highlight the role of selection pressure in shaping resistance in *P. viticola* populations and emphasize the need to limit the number of zoxamide applications per season. The observed genetic variability also calls for further research into the fitness and epidemiology of resistant strains to inform sustainable resistance management strategies.

This research is carried out within the framework of an industrial PhD programme confounded by the ministry of university and research and by Gowan company.

Elucidating the key determinants affecting Italian *Pyricularia oryzae* genetic diversity. S. BOSCO[1], F. SILLO[2], P. RUFFA[1], D. TENNI[3], P. ABBRUSCATO[4], D. TORELLO MARINONI[1], M. ROMANI[3], M. MEZZALAMA[1,5], V. GUARNACCIA[1,5], D. SPADARO[1,5]. [1]*Dept. Agricultural, Forest and Food Sciences (DISAFA), University of Turin, Largo Paolo Braccini, 2, 10095, Grugliasco, TO, Italy.* [2]*Institute for Sustainable Plant Protection, National Research Council (CNR-IPSP), Strada delle Cacce, 73, 10135, Turin, TO, Italy.* [3]*Ente Nazionale Risi, Centro Ricerche Sul Riso, Strada per Ceretto, 4, 27030 Castello d'Agogna, PV, Italy.* [4]*Nuova Genetica Italiana, Piazza XX Settembre, 2, 22079, Villa Guardia, CO, Italy.* [5]*Interdepartmental Centre for Innovation in the Agro-environmental Sector (AGROINNOVA), Largo Paolo Braccini, 2, 10095, Grugliasco, TO, Italy.* E-MAIL: davide.spadaro@unito.it

Rice blast, caused by *Pyricularia oryzae* Cavara, is the most damaging disease in Italy. The use of resistant cultivars represents a sustainable method to minimize yield loss, however high genomic plasticity of the pathogen promotes rapid adaptation to host resistance. Understanding *P. oryzae* population structure is fundamental to assess its genetic variability and to devise durable management practices. While the first population study in Italy dates to 2005, updated knowledge of local *P. oryzae* diversity is lacking. In this study, we genotyped the population structure of 242 isolates collected from rice panicles in five Italian regions (Piedmont, Lombardy, Veneto, Emilia-Romagna, and Sardinia) in 2011–2012 and 2020–2022 using SSR markers. The potential occurrence of sexual reproduction was determined by linkage disequilibrium and mating type assessment, displaying the exclusive presence of the MAT1-1 idiomorph, thus confirming the clonal structure of the Italian *P. oryzae* population. Cluster analysis of 200 distinct multilocus genotypes (MLGs) via DAPC, UPGMA, and STRUCTURE allowed to identify five genetic clusters. Molecular variance and genetic divergence analyses revealed that geographic origin and sampling year significantly affected population structure. Correlation analysis in isolates from Piedmont highlighted combined effects of climatic factors and geographic origin on local allelic diversity. Virulence testing of cluster-representative strains suggested the disappearance of a less virulent cluster over time. These findings provide novel insights into the temporal and spatial dynamics of the Italian *P. oryzae* population in Italy.

This research was financially supported by the "REACT-EU – PhD programmes on innovation and green topics" funded by NOP Research and Innovation 2014-2020. Part of this work was also granted by the European Commission – NextGenerationEU, Project "Strengthening the MIRRI Italian Research Infrastructure for Sustainable Bioscience and Bioeconomy", code n. IR0000005.

The potassium phosphite-based fungicide CANON® controls basil downy mildew under greenhouse conditions in Israel. N. NITZAN, H. GOREN. *The Valley of Springs Research & Extension Center, Israel, M. P. Beit She'an.* E-MAIL: nitzan_nadav@yahoo.com

Sweet basil downy mildew (BDM), caused by *Peronospora belbahrii*, is the most destructive disease of commercially produced sweet basil in Israel, and unless properly managed, may lead to 100% yield reduction. Four experiments were conducted over three growing seasons (fall 2021, fall 2022 and spring 2023) under commercial-like conditions to determine the efficacy of the phosphonic acid-based fungicide Canon® following a conservative, seven-day protective spraying protocol.