

BOOK OF ABSTRACTS



II PLAN PESTS AND DISEASES FORUM

**REDEFINING CONCEPTS, MECHANISMS &
MANAGEMENT TOOLS**

MARCH 24TH | ONLINE

ORGANIZATION



***Plant Stress* lab**

PROGRAM

1st Session: Plant Diseases

8:30am | Opening talk

8:45am | Dr. Elodie Vandelle (University of Verona)

"Deciphering the determinants of *Pseudomonas syringae* pv. *actinidiae* virulence on host"

9:15am | Dr. Fabio Rezzonico (Zurich University of Applied Sciences)

"Tracking the dissemination of fire blight pathogen *Erwinia amylovora* in Europe and in Central Asia using CRISPR spacer sequences"

9:45am | Dr. Francesco Spinelli (University of Bologna)

"Volatile organic compounds in plant-pathogen interactions: their biological roles and technological application"

10:15am | Break

10:30am | Dr. Hernâni Gerós (University of Minho)

"Flavescence Dorée-Derived Leaf Yellowing in Grapevine (*Vitis vinifera* L.) Is Associated to a General Repression of Isoprenoid Biosynthetic Pathways"

11:00am | Dr. Cátia Teixeira (University of Porto)

"Harnessing the potential of spider venom peptides to control plant pests"

11:30am | E-Poster Pitch 1

Nadeem Iqbal

"Fusaric acid-induced changes in the photosynthetic activity of tomato plants"

Maria Lopes

"*Aspergillus* fungi and their toxic metabolites — A threat to *Salicornia* and public health"

Márcia Peixoto

"*Trachyspermum ammi* and *Thymus mastichina* essential oils as biofungicides for the control of postharvest diseases caused by *Alternaria alternata*"

Marta Nunes da Silva

"Defence-related pathways, phytohormones and primary metabolism are key players in the distinct tolerance of *Actinidia* spp. to *Pseudomonas syringae* pv. *Actinidiae*"

11:50am | Oral presentations 1

Helena Santos

"Putative aroma biomarkers of infected *Vitis vinifera* cv. Trincadeira grapes with *Botrytis cinerea*"

Guilherme Possamai

"Chestnut brown rot and *Gnomoniopsis smithogilvyi*: characterization of the disease and of the causal agent in Portugal"

Daniela Costa

"Molecular diversity of cork oak pathogen *Biscogniauxia mediterranea* and biocontrol using host endophytic fungi"

12:20pm | General discussion

12:40pm | Lunch break

2nd Session: Plant Pests

2:00pm | Dr. Rocío Escobar-Bravo (University of Bern)

"Plant-mediated facilitation of leafminer metamorphosis in the soil"

2:30pm | Dr. Salvatore Arpaia (ENEA)

"The use of RNAi in plants as a tool for pest and disease management"

3:00pm | Dr. José Melo-Ferreira (University of Porto)

"Using population genomics to understand biological invasions: *Drosophila suzukii* as case study"

3:30pm | Break

3:40pm | E-Poster Pitch 2

Zalán Czékus

"Chitosan-induced local and systemic defence responses of tomato plants: The role of ethylene and light"

Mafalda Reis-Pereira

"A review on the main challenges in early diagnostics of plant diseases based on proximal sensing"

Liliána Tóth

"Bioprotective potential of *Neosartorya (Aspergillus) fischeri* antifungal protein and its de novo rationally designed peptide derivative in combined application on tomato plant against *Botrytis cinerea*"

Manuel J.R.A. Oliveira

"Benzothiadiazole enhances metabolic responses in *Catharanthus roseus* infected with "aster yellow" phytoplasmas"

4:00pm | Oral presentations 2

Luna Morcillo

"Biotic and abiotic interactions triggering Aleppo Pine (*Pinus halepensis*) forests decline."

Jonathan Willow

"RNAi efficacy is enhanced by chronic dsRNA feeding in pollen beetle"

Leonor Martins

"Comparative genomics of walnut associated *Xanthomonas euroxanthea* and *Xanthomonas arboricola* pv. *juglandis* strains isolated from a single host tree"

4:30pm | General discussion

4:45pm | Dr. Marie Dufresne (Paris-Saclay University)

"*Trichoderma* sp. as a biocontrol agent for *Fusarium* Head Blight of cereals: from the lab to the field"

5:15pm | Dr. Adela Sánchez-Moreiras (University of Vigo)

"*Plants vs. plants: how to get advantage of secondary metabolites for weed control*"

5:45pm | Closing talk

Chestnut brown rot and *Gnomoniopsis smithogilvyi*: characterization of the disease and of the causal agent in Portugal

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Sweet chestnut (*Castanea sativa* Mill.) is a nutritious food with high social and economic impact in Portugal. Fungal infection and rots lead to great economic and quality losses in stored chestnut. The fungus *Gnomoniopsis smithogilvyi* (syn. *Gnomoniopsis castaneae*) is currently considered one of the major threats to the chestnut chain worldwide. Considering the lack of knowledge on both the disease and the causal agent in Portugal, studies have been conducted in an attempt to timely develop the necessary control strategies towards the mitigation of the disease.

Under this scope, the chestnut brown rot and its causal agent have been characterized for the first time in Portugal. The study was performed on chestnuts from Bragança, Portugal, that were received, processed and stored in a local industry during the growing season 2018-2019. Thirty-three samples were collected from different processing stages and from three chestnut varieties (Longal, Judia and Martainha). Several isolates of *G. smithogilvyi* obtained were characterized at the morphological, ecophysiological, enzymatic and molecular levels. The fungus was also characterized in terms of pathogenicity and virulence.

G. smithogilvyi was confirmed as the causal agent of brown rot disease in Portuguese chestnut varieties, which showed high susceptibility. The fungus showed high adaptability to chestnut substrates. The Portuguese isolates of *G. smithogilvyi* are morphologically and genetically similar to those isolated in other countries, even though some physiological and enzymatic variability was observed among the Portuguese isolates. Post-harvest control strategies towards the mitigation of the disease are discussed.

Keywords: *Castanea sativa*; phytopathogen; Koch postulates, amylase

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