Volume 90 (2, Supplement) August 2008

Journal of Plant Pathology

Formerly *Rivista di patologia vegetale* established in 1892

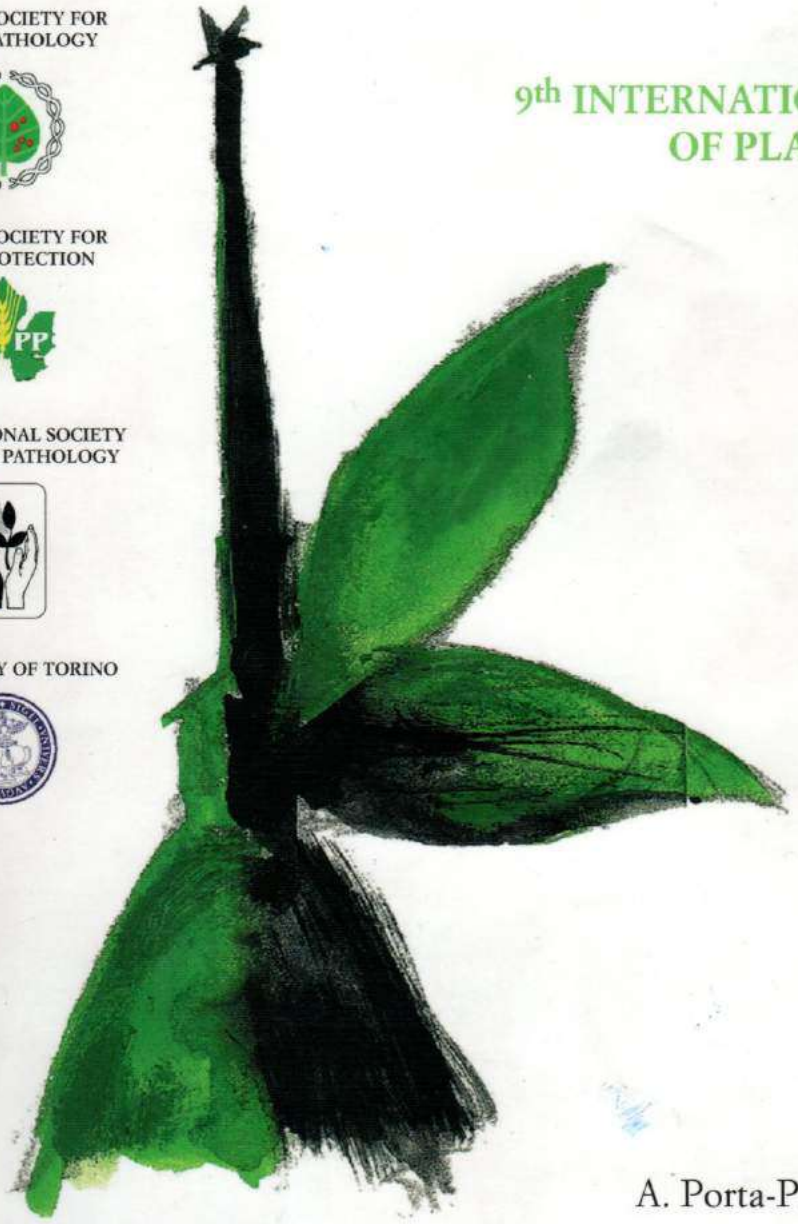
An International Journal of the Italian Society for Plant Pathology

ITALIAN SOCIETY FOR PLANT PATHOLOGY

ITALIAN SOCIETY FOR CROP PROTECTION

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

UNIVERSITY OF TORINO



ICPP 2008

9th INTERNATIONAL CONGRESS OF PLANT PATHOLOGY

August 24-29, 2008
Torino, Italy

Healthy and Safe Food for Everybody

BOOK OF ABSTRACTS

Edited by
A. Porta-Puglia and P. Gonthier

EDIZIONI ETS, Pisa, Italy

ISSN 1125-4653

Poste Italiane S.p.A. - Spedizione in Abbonamento Postale - D.L. 353/2003
(conv. in L. 27/02/2004 n° 46) art. 1, comma 1 - DCB AREA CENTRO 1/Pisa.

Volume 90 (2, Supplement) August 2008

Journal of Plant Pathology

Formerly *Rivista di patologia vegetale* established in 1892

An International Journal of the Italian Society for Plant Pathology

ICPP 2008
9th International Congress of Plant Pathology

Abstracts of invited and offered papers

Edited by
A. Porta-Puglia and P. Gonthier

Torino, Italy, 24-29 August 2008

EDIZIONI ETS, Pisa, Italy
Poste Italiane S.p.A. - Spedizione in Abbonamento Postale - D.L. 353/2003
(conv. in L. 27/02/2004 n° 46) art. 1, comma 1 - DCB AREA CENTRO 1/Pisa.

ISSN 1125-4653

The **Società Italiana di Patologia Vegetale, SIPaV, (Italian Society for Plant Pathology)** was established in 1992 following the dissolution of the Italian Society for Crop Protection (SIF) and the Italian Phytopathological Association (AFI). Its main aims are to promote research into different branches of plant pathology, to disseminate knowledge about plant diseases and their aetiological agents and to promote cooperation among experts working in the field of plant pathology, and partnership in fundamental and applied reasearch. The Society organizes meetings, gathers and distributes information about plant diseases, and maintains cooperation with other national and international scientific organizations and with national and local administrative authorities on problems involving plant health management.

The Society publishes a journal (Journal of Plant Pathology), which hosts articles by members and external contributors, a bulletin and other bibliographic material to exchange information among members.

The SIPaV is affiliated to the International Society for Plant Pathology (ISPP) and to the European Foundation for Plant Pathology (EFPP).

COUNCIL (2008-2010)

President
Gaetano Magnano di San Lio
Dipartimento di Agrochimica e Agrobiologia, Università Mediterranea,
Località Feo di Vito, 89061 Reggio Calabria

Past-President
Felice Scala
Dipartimento di Arboricoltura, Botanica e Patologia Vegetale, Università di Napoli,
Via Università 100, 80055 Portici (NA)

Secretary/Treasurer
Leonardo Schena
Dipartimento di Agrochimica e Agrobiologia, Università Mediterranea,
Località Feo di Vito, 89061 Reggio Calabria

Elected Members
Roberto Buonaurio (**Vice-President**)
Dipartimento di Scienze Agrarie ed Ambientali, Università degli Studi,
Via Borgo XX Giugno 74, 06121 Perugia

Paola Battilani
Istituto di Entomologia e Patologia Vegetale, Università Cattolica del Sacro Cuore,
Via Emilia Parmense 84, 29100 Piacenza

Donato Boscia
Istituto di Virologia Vegetale del CNR, sezione di Bari,
Via Amendola 165/A, 70126 Bari

Corrado Fanelli
Dipartimento di Biologia Vegetale, Università "La Sapienza",
Largo Cristina di Svezia 24, 00165 Roma

Quirico Migheli
Dipartimento di Protezione delle Piante, Università degli Studi,
Via E. De Nicola 9, 07100 Sassari

Alessandro Ragazzi
Dipartimento di Biotecnologie Agrarie, Università degli Studi,
Piazzale delle Cascine 28, 50144 Firenze

Membership and Administration

SIPaV, Dipartimento di Agrochimica e Agrobiologia, Università Mediterranea.
Località Feo di Vito, I-89061 Reggio Calabria, Italy
Tel: +39.0965.801284 - Fax: +39.0965.312827 - E-mail: lschena@unirc.it

ICPP 2008
Organising Committee

President
Giovanni P. Martelli, University of Bari

Vice Presidents
Peter Scott, UK
Wenhua Tang, P.R. China
Cleora J. D'Arcy, USA
Jaacov Katan, Israel

Chairperson
M. Lodovica Gullino, University of Torino

International Advisory Committee
Khaled M. Makkouk, Arab Society for Plant Protection
Gert. H.J. Kema, Royal Netherlands Society of Plant Pathology
Eliane Dumas-Gaudot, French Phytopathological Society
José M. Melero Vara, Spanish Society for Plant Pathology
Georg F. Backhaus, The German Phytomedical Society

Scientific Programme Committee
Angelo Garibaldi, University of Torino and
Giuseppe Surico, University of Firenze - Chairpersons
Naldo Anselmi, Tuscia University, Viterbo
Paola Bonfante, University of Torino
Giorgio Calabrese, University of Torino
Antonino Catara, University of Catania
Maurizio Conti, National Research Council, Torino
Francesco Faretra, University of Bari
Paolo Gonthier, University of Torino
Franco Lamberti, National Research Council, Bari †
Cristina Marzachì, National Research Council, Torino
Giancarlo Pratella, University of Bologna †
Felice Scala, University of Napoli

Proceedings and Posters Committee
Angelo Porta-Puglia, Ministry for Agricultural, Food and Forestry Policies, Roma - Chairperson Proceedings
Giovanni Vannacci, University of Pisa - Chairperson Posters
Matteo Lorito, University of Napoli
Paolo Cortesi, University of Milano

Finance Committee
Angelo Garibaldi, University of Torino - Chairperson
Donato Gallitelli, University of Bari
Marina Barba, Agricultural Research Council, Roma

Local Arrangements Committee
M. Lodovica Gullino, University of Torino - Chairperson
Cristina Marzachì, National Research Council, Torino
Paolo Gonthier, University of Torino
Piero Roggero, National Research Council, Torino †
Davide Spadaro, University of Torino
Federico Tinivella, University of Torino
Massimo Pugliese, University of Torino

Congress Secretariat
Valentina Communication
Via Cibrario 27, 10143 Torino (Italy)
ph. +39 011 4374250 - Fax +39 011 4374318
e-mail: info@icpp2008.org

ISPP Executive Committee 2003-2008

President
Richard E. Falloon, New Zealand

Immediate Past President
Peter R. Scott, United Kingdom

Vice President
Tang Wenhua, China

Vice President
M. Lodovica Gullino, Italy

Secretary-General
Greg Johnson, Australia

Treasurer
Chuji Hiruki, Canada

ISPP Newsletter Editor
Brian Deverall, Australia

ISPP Executive Committee 2008-2013

President
M. Lodovica Gullino, Italy

Immediate Past President
Richard E. Falloon, New Zealand

Vice President
Wafa Khoury, Lebanon

Vice President
You-Liang Peng, China

Secretary-General
Greg Johnson, Australia

Treasurer
Thomas Evans, USA

ISPP Newsletter Editor
Brian Deverall, Australia

symptoms at the site. On the basis of systematic transects, subsequent surveys established the precise location of the pathogen, which appeared to be confined to two areas within one of the Wollemi pine stands. Concurrent to the on-going monitoring of pathogen spread, there was an urgent need to establish control strategies for managing this problem. A study was initiated to investigate the effects of metalaxyl and potassium phosphonate on *Phytopthhora* root rot of Wollemi pine. Post-infection soil drenching of potassium phosphonate was shown to be effective in controlling this disease in a greenhouse trial. No phytotoxicity was observed on plants treated with phosphonate. However, neither foliar spray of phosphonate nor soil drenching with metalaxyl effectively controlled the disease. Implications of these results in relation to management strategies are discussed.

38.56 VANILLA STEM ROT PATHOGEN CAN SURVIVE AS AN ENDOPHYTE WITHIN HEALTHY VINES. E.C.Y. Liew, A. Pinaria, F. Rondonuwu, J. Paath, D.T. Sembel and L.W. Burgess. *Royal Botanic Gardens Sydney, Botanic Gardens Trust, DECC, Mrs Macquaries Rd, Sydney, NSW 2000, Australia. Email: edward.liew@rbgsyd.nsw.gov.au*

Vanilla is an important and popular cash crop offering high economic returns to smallholding farmers in North Sulawesi, Indonesia. However, vanilla production in this region is greatly constrained by *Fusarium* stem rot. Although the disease is most severe on the stems, it is also found on the leaves and roots. On the stem internode, small brown water-soaked spots or lesions initially appear, which enlarge and become necrotic, eventually girdling and shrivelling the stem. Etiological studies confirmed the causal agent to be *Fusarium oxysporum* f.sp. *vanillae*. Interestingly, although this is a soilborne vascular pathogen, disease lesions are often observed between healthy internodes in the absence of any apparent wounds, raising questions as to the pathogen's mode of entry. We showed in a greenhouse trial that *F. oxysporum* isolates obtained from healthy stems without any external or internal symptoms were pathogenic on vanilla vines, indicating the possibility of this pathogen surviving as an endophyte within healthy vines. This finding has significant implications on disease management as vanilla is vegetatively propagated and most planting material is obtained from existing farms with various levels of disease incidence.

38.57 *SPONGOSPORA SUBTERRANEA* DAMAGES POTATO PLANT GROWTH AND YIELD. R.A. Lister, R.E. Falloon and D. Curtin. *New Zealand Institute for Crop & Food Research Limited, PB 4704, Christchurch, New Zealand. Email: ListerR@crop.cri.nz*

Spongospora subterranea f.sp. *subterranea* causes powdery scab on potato tubers (*Solanum tuberosum*), which is the well recognised quality-limiting effect of this pathogen. Root infections by *S. subterranea* (zoosporangia and root galls) are common but rarely observed, and their significance has not been documented. We have completed several experiments indicating that this pathogen can adversely affect plant growth and yield parameters. A field trial, where powdery scab was severe, measured a mean total tuber yield increase of 28% due to soil-applied pesticides that effectively controlled the disease. A second field trial measured a 42% reduction in mean tuber yield following *S. subterranea* inoculation of uninfested soil. Several glasshouse experiments have tested whether inoculation with *S. subterranea* sporosori affected plant growth. Relative to uninoculated plants, inoculated plants yielded 21% less total dry matter, were 17% shorter and had 7% fewer leaves. Shoots from inoculated plants had reduced content of the elements P, K, S, Mn, Cu, and Zn, and increased amounts of N, Mg, and Na, and their roots were discoloured, indicating that the pathogen damaged roots and disrupted root membrane function. Cultivar resistance to powdery scab is generally assessed as low tuber infection. However, inoculation reduced total plant dry weight of cv. Iwa (very susceptible to powdery scab on tubers) by 27%, and of cv. Gladiator (resistant) by 28%. These results are strong evidence that *S. subterranea* has effects that could harm crop yields as well as quality, in cultivars that are resistant or susceptible to powdery scab on tubers.

38.58 UNDERESTANDING AND MANAGING EPIDEMICS CAUSED BY *PHYTOPHTHORA CAPSICI* IN CHILE-PEPPER. J. Luna-Ruiz and O. Moreno-Rico. *Universidad Autónoma de Aguascalientes, Av. Universidad 940, Cd. Universitaria, C.P. 20100, Aguascalientes, Ags., Mexico. Email: jjluna@correo.uaa.mx*

Phytophthora capsici causes severe infection of roots, crowns, stems, leaves and fruits of chile-pepper (*Capsicum annum* L.) in commercial fields worldwide including Mexico. Our objectives are to present (1) advances related to the understanding of epidemics caused by *P. capsici* in Central Mexico, and (2) some recommendations for integrated disease management based on experimental results. As no genetic resistance to *P. capsici* is currently available in commercial chile-pepper cultivars, the initial infection and development of epidemics seem to be caused by three main factors: (a) high concentration of initial inoculum (oospores) in soil, (b) presence of summer rains, and (c) frequent and prolonged crop flooding (excess soil moisture). Factors b and c have been well documented, but even where natural sexual recombination of *P. capsici* has been demonstrated, the role of oospores as the primary/initial inoculum for infection has not been proved in Central Mexico. Experimental results and field observations indicate that early transplanting (March 15-31) on raised mulching beds, followed by drip irrigation, reduce the impact of rain and disease risk. Good crop-plant nutrition and soil applications of beneficial microorganisms (*Trichoderma harzianum*, *Bacillus subtilis*, etc.) improve plant vigor, health and strength, therefore reducing the vulnerability of susceptible chile-peppers to *P. capsici*. Crop genetic resistance is a major component of integrated disease management. Screening traditional local varieties and landraces of chile-pepper against regional aggressive strains of *P. capsici* has led to identifying excellent levels of genetic resistance for crop improvement, a major component of integrated disease management and sustainable agriculture.

38.59 ROLE OF PLANT GROWTH-PROMOTING RHIZOBACTERIA IN THE SUPPRESSION OF SOIL-BORNE DISEASES OF TWO MEDICINAL CROPS, *COLEUS FORSKOHLII* AND *WITHANIA SOMNIFERA*. S.B. Mallesh and S. Lingaraju. *Department of Plant Pathology, U.A.S., Dharwad 580005, Karnataka, India. Email: lingaraju_s@rediffmail.com*

Fusarium chlamydosporium, *Ralstonia solanacearum* and *Meloidogyne incognita* were found to be the predominant pathogens affecting the medicinal crops, *Coleus forskohlii* and *Withania somnifera* in a survey done in Karnataka, southern India. We investigated the ability of 50 rhizobacterial strains isolated from healthy rhizoplanes and rhizospheres of these crops to suppress the activity *in vitro* of *F. chlamydosporium* or *R solanacearum*, using the dual culture technique. Cell-free filtrates of the same strains were tested for *M. incognita* juvenile mortality and inhibition of egg