

Ulrich Gisi
Ilan Chet
M. Lodovica Gullino
Editors



PLANT PATHOLOGY IN THE 21ST CENTURY

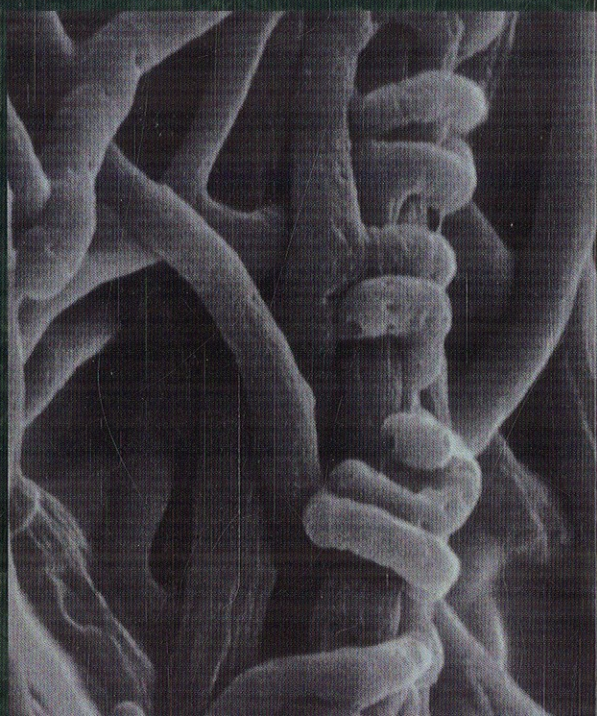
Contributions to the 9th International Congress

1

Recent Developments in Management of Plant Diseases



Springer



Contents

Introduction.....	ix
List of Contributors	xi
Part I Concepts in Chemical Control	
1 The Challenges of Chemical Control of Plant Diseases.....	3
Andy Leadbeater and Ulrich Gisi	
2 Novel Tools to Identify the Mode of Action of Fungicides as Exemplified with Fluopicolide.....	19
Valérie Toquin, François Barja, Catherine Sirven, Stéphanie Gamet, Lucile Mauprivez, Philippe Peret, Marie-Pascale Latorse, Jean-Luc Zundel, Frédéric Schmitt, Marc-Henri Lebrun, and Roland Beffa	
3 QoI Fungicide Resistance: Current Status and the Problems Associated with DNA-Based Monitoring.....	37
Hideo Ishii	
4 Regulatory Aspects in Chemical Control of Fungal Diseases: Impact on Efficient Plant Production.....	47
Georg F. Backhaus	
Part II Concepts in Biological Control of Plant Pathogens	
5 The Roles of Cyclic Lipopeptides in the Biocontrol Activity of <i>Bacillus subtilis</i>	59
Marc Ongena, Guillaume Henry, and Philippe Thonart	
6 Biocontrol of Plant Pathogens and Plant Growth Promotion by <i>Bacillus</i>.....	71
Brian B. McSpadden Gardener	

7	Importance of Multitrophic Interactions for Successful Biocontrol of Plant Parasitic Nematodes with <i>Paecilomyces lilacinus</i> Strain 251	81
	Sebastian Kiewnick	
8	Interactions Between <i>Clonostachys rosea</i> f. <i>Catenulata</i>, <i>Fusarium oxysporum</i> and Cucumber Roots Leading to Biological Control of Fusarium Root and Stem Rot	93
	Syama Chatterton and Zamir K. Punja	
9	Screening of Biocontrol Agents for Control of Foliar Diseases	107
	Jürgen Köhl	
10	Quorum Sensing as a Target for Novel Biocontrol Strategies Directed at <i>Pectobacterium</i>	121
	Amélie Cirou, Stéphane Uroz, Emilie Chapelle, Xavier Latour, Nicole Orange, Denis Faure, and Yves Dessaux	
11	The Status of Biological Control of Plant Diseases in Soilless Cultivation	133
	Joeke Postma	
12	REBECA – EU-Policy Support Action to Review Regulation of Biological Control Agents	147
	Ralf-Udo Ehlers	
13	Fungal Disease Management in Organic Apple Orchards: Epidemiological Aspects and Management Approaches	163
	Imre J. Holb	

Part III Natural Compounds

14	Exploitation of Natural Compounds in Eco-Friendly Management of Plant Pests	181
	N.K. Dubey, Ashok Kumar, Priyanka Singh, and Ravindra Shukla	
15	Regulation and Functional Analysis of Bioprotective Metabolite Genes from the Grass Symbiont <i>Epichloe festucae</i>	199
	Barry Scott, Ruth E. Wrenn, Kimberley J. May, Daigo Takemoto, Carolyn A. Young, Aiko Tanaka, Damien J. Fleetwood, and Richard D. Johnson	

Part IV Soilborne Plant Diseases and their Control

16 IPM for Soilborne Disease Management for Vegetable and Strawberry Crops in SE USA.....	217
Frank J. Louws	
17 Integrated Control of Soilborne Pathogens of Wheat	229
Timothy C. Paulitz, Patricia A. Okubara, and Kurtis L. Schroeder	
18 Challenges in Controlling Verticillium Wilt by the Use of Nonchemical Methods.....	247
George Lazarovits and Krishnamurthy Subbarao	
19 Soil Solarization – 30 Years On: What Lessons Have Been Learned?	265
Jaacov Katan and Abraham Gamliel	
20 Back to the Future: Total System Management (Organic, Sustainable)	285
Dan O. Chellemi	
21 Global Phaseout of Methyl Bromide Under the Montreal Protocol: Implications for Bioprotection, Biosecurity and the Ozone Layer.....	293
Ian Porter, Jonathan Banks, Scott Mattner, and Paul Fraser	
22 Accelerated Degradation of Soil Fumigants: Occurrence and Agricultural Consequences.....	311
Abraham Gamliel and Shachaf Triky-Dotan	
23 Recent Developments in Disease Management	329
William Ntow and Husein Ajwa	

Part V Plant Breeding and Resistance Strategies

24 Worldwide Monitoring Systems: The Need for Public and Private Collaboration	349
Roger D. Magarey, William E. Dolezal, and Thomas J. Moore	
25 Identification of New Sources of Resistance to Soybean Rust.....	357
Shuxian Li	
Index.....	375