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Nota di contenuto	Part I. Pathogenic Fungus – Plant Interactions -- Modulation of Host Immunity and Development by Ustilago Maydis -- RNA Dialogues in Fungal-Plant Relationships -- The Role of Tox Effector Proteins in the Parastagonospora Nodorum-Wheat Interaction -- Part II. Mutualistic Fungus – Plant Interactions -- Genomes of Arbuscular Mycorrhizal Fungi -- Diversity of Seed Endophytes: Causes and Implications -- Lichens and Their Allies Past and Present -- Lichen Fungal Secondary Metabolites: Progress in the Genomic Era Towards Ecological Roles in the Interaction -- Part III. Sensing and Signalling in Fungus-Plant Interactions -- Regulation of Plant Infection Processes by MAP Kinase Pathways in Ascomycetous Pathogens -- Role of pH in the Control of

Fungal MAPK Signalling and Pathogenicity -- Role of Volatile Organic Compounds in Establishment of the Trichoderma-Plant Interaction -- Part IV. Regulation of Fungal Gene Expression and Development -- Epigenetic Regulation of Fungal Genes Involved in Plant Colonization -- Toward Understanding the Role of Chromatin in Secondary Metabolite Gene Regulation in the Rice Pathogen Fusarium Fujikuroi -- The Rice Blast Fungus Magnaporthe Oryzae Uses a Turgor-Dependent, Septin-Mediated Mechanism to Invade Rice -- Role of Light in the Life Cycle of Botrytis Cinerea -- Part V. Genomes and Evolution -- Species of Zymoseptoria (Dothideomycetes) as a Model System to Study Plant Pathogen Genome Evolution -- Accessory Chromosomes of the Fusarium Oxysporum Species Complex and Their Contribution to Host Niche Adaptation -- Part VI. Global Pandemics and Food Security -- Global Landscape of Rust Epidemics by Puccinia Species: Current and Future Perspectives -- Magnaporthe oryzae and Its Pathotypes: A Potential Plant Pandemic Threat to Global Food Security.

Sommario/riassunto

This fully revised 3rd edition provides a comprehensive overview of the biology of fungi associated with plants. Since the publication of the 2nd Edition in 2009, tremendous new knowledge has been gained in the field of fungal-plant interactions, which is reflected in the contributions of this book. World-leading scientists in the field provide authoritative insights into fungal-plant interactions covering the following main topics: Mutualistic and pathogenic fungal-plant interactions in natural and agricultural ecosystems Sensing and signalling in fungus-plant interactions Regulation of fungal gene expression and development Fungal genomes and evolution Global pandemics caused by fungal pathogens and their implications for food security This volume will be of great interest to both specialists and generalists. It is an indispensable resource for researchers, lecturers and students in microbiology, mycology, and plant sciences, as well as agriculture and biotechnology.