

BOOK REVIEW

Wolpert T., Collmer A., Akimitsu K., Glazebrook J. (eds.). 2011. **Genome-Enabled Analysis in Plant-Pathogen Interactions**. APS Press – American Phytopathological Society. St. Paul MN, USA, 272 pp. 43 Figs. ISBN 978-0-69054-393-1

This book contains the papers and abstracts from the 10th Japan-United States Seminar held at Corvallis, Oregon, USA on January 24–28 2010. This important book updates and documents the recent progress in genome-enabled technologies that have enhanced and will continue to refine the understanding of how plants and microbes interact at the molecular level.

The book includes the results of studies that show the power of integrating imaging with genetic and genomic tools to link genes to function as well as using imaging to understand plant and pathogen molecules. The contribution of computational biology deciphering the genome and revealing the complex signals and biochemical networks that are involved in plant-pathogen interactions, including advances reported for fungal, oomycete and bacterial pathogens are also emphasized in the book. New approaches for identifying host genes important in plant diseases are included. Novel strategies are suggested for generating crops with a broad spectrum and durable resistance to important pathogens.

Twenty-five leading molecular scientists from Japan and USA who participated in the “Japan – US Seminar on Plant-Pathogen Interactions” contributed to this book. The results of their collective research are available in this valuable volume.

Chapters on the following topics are included: (1) Past steps in understanding specificity in host-parasite interactions, from the US-Japan seminars; (2) System-wide analysis of the signaling network controlling plant

immunity; (3) Analysis of plant susceptibility response and its similarities to resistance; (4) Association genetics reveals genes critical for *Magnaporthe*-rice interactions; (5) Defense system induced by elicitor-like proteins of the biocontrol agent *Pythium oligandrum*; (6) Nitric-oxide and reactive oxygen species plant defense responses; (7) The role of calcium and calmodulin binding protein 60 g in *Arabidopsis* defense signaling; (8) Chitin receptor for plant innate immunity; (9) Genome analysis to understand durable disease resistance in rice; (10) Pathogenesis and plant basal resistance in *Colletotrichum arbusculare* and *Magnaporthe oryzae* infected rice; (11) Regulatory mechanisms of plant defense to necrotrophic fungi; (12) Defense mechanisms mediated by chitin in rice-blast interactions; (13) Genome-enabled evolution specifically in citrus; (14) Suppression of defense – the role of fungal suppression in conditioning plant susceptibility; (15) *Cochliobolus heterotrophus* and maize: a model for genome wide integration of iron homeostasis; (16) Towards a system-level understanding of oomycete plant interactions; (17) *Pseudomonas syringae* – a model for system level exploration of plant microbe interactions; (18) Phyllosphere microbiology interactions of *Pseudomonas syringae* with itself, and of *Pseudomonas syringae* with the plants in which it lives; (19) Targeting of the rice transcription by TAL effector of *Xanthomonas oryzae*; (20) Unique features of phytoplasma genome and membrane proteins involved in host specificity; (21) Pathogenicity determinants of *Xanthomonas axonopodis* pv. *citri* causative agent of citrus canker; (22) AutoSPOTs – automated callose deposition.

From the above listed topics it is obvious that this book will stimulate similar types of research concerning various crops. Without question, this book merits great attention among phytopathologists who should take into consideration similar approaches with the other important crops such as potato, sugar beet, and others.

Jerzy J. Lipa
Institute of Plant Protection – National Research Institute
Władysława Węgorka 20, 60-318 Poznań, Poland
J.J.Lipa@iorpib.poznan.pl