Viral diseases of crop plants cause significant yield and economic losses and this poses a major threat to global food security. To make matters worse there are no effective antiviral chemicals available and, although naturally resistant host genotypes exist, they are so rare that conventional breeding techniques cannot be used reliably to create resistant plants. The most effective option to combat phytopathogenic viruses is through biotechnological intervention, such as the use of genetic engineering to develop transgenic plants or the topical use of RNA silencing technologies to prevent or modulate the severity of the viral infection. Since the first report on the virus resistance of transgenic tobacco plants in 1986, enormous progress has been made in this field. In addition great strides have been made in our ability to genetically manipulate plants and viruses leading to a plethora of novel applications. This has prompted the need for this timely book which distills the most important research to provide a timely overview.

This authoritative book contains fifteen chapters whose breadth reflects the diversity of this research area. Topics covered range from: understanding the mechanisms of virus resistance in plants, and the management of whitefly-transmitted viruses, to the principles and methods involved in genetic engineering of virus resistant plants. Other chapters cover individual crops such as papaya, cassava, rice, tomato, and banana, for which virus resistance has been accomplished by employing different transgenic technologies.

This volume is essential reading for everyone working in this field, both students and specialists, from academia, research institutes/organizations and industries.
CURRENT BOOKS OF INTEREST

☞ Cyanobacteria: Signaling and Regulation Systems
Author: Dmitry A. Los (Published: 2018)

☞ Viruses of Microorganisms
Edited by: Paul Hyman and Stephen T. Abedon (Published: 2018)

☞ Protozoan Parasitism: From Omics to Prevention and Control
Edited by: Luis Miguel de Pablo and Jacob-Lorenzo Morales (Published: 2018)

☞ Genes, Genetics and Transgenics for Virus Resistance in Plants
Edited by: Basavarajabh L. Patil (Published: 2018)

☞ DNA Tumour Viruses: Virology, Pathogenesis and Vaccines
Edited by: Sally Roberts (Published: 2018)

☞ Pathogenic Escherichia coli: Evolution, Omics, Detection and Control
Edited by: Pina M. Fratamico, Yanhong Liu and Christopher H. Sommers (Published: 2018)

☞ Postgraduate Handbook: A Comprehensive Guide for PhD and Master's Students and their Supervisors
Author: Aceme Nyika (Published: 2018)

☞ Enteroviruses: Omics, Molecular Biology, and Control
Edited by: William T. Jackson and Carolyn B. Coyne (Published: 2018)

☞ Molecular Biology of Kinetoplastid Parasites
Edited by: Hemanta K. Majumder (Published: 2018)

☞ Bacterial Evasion of the Host Immune System
Edited by: Pedro Escoll (Published: 2017)

☞ Illustrated Dictionary of Parasitology in the Post-Genomic Era
Author: Hany M. Elsheikha and Edward L. Jarroll (Published: 2017)
"a guide for students, academic staff, medical and veterinary professionals" (ProtoView);
"an extensive and comprehensive glossary of contemporary concepts, terminologies, and vocabulary in modern parasitology" (Doodys);
"a pure pleasure to explore and discover" (Epidemiol. Infect.)

☞ Next-generation Sequencing and Bioinformatics for Plant Science
Edited by: Vijai Bhadauria (Published: 2017)

☞ The CRISPR/Cas System: Emerging Technology and Application
Edited by: Muhammad Jamal (Published: 2017)
"reviews recent advances" (ProtoView)

☞ Brewing Microbiology: Current Research, Omics and Microbial Ecology
Edited by: Nicholas A. Bokulich and Charles W. Bamforth (Published: 2017)
"a valuable information source ... an authoritative overview" (IMA Fungus)

☞ Metagenomics: Current Advances and Emerging Concepts
Edited by: Diana Marco (Published: 2017)
"presents those new to the field with important aspects of metagenomics" (Eur. J. Soil Sci.)

☞ Bacillus: Cellular and Molecular Biology (Third edition)
Edited by: Peter L. Graumann (Published: 2017)
"a one-stop shop for a huge range of Bacillus-focused molecular biology" (Microbiology Today)

☞ Cyanobacteria: Omics and Manipulation
Edited by: Dmitry A. Los (Published: 2017)
"a treasure trove of valuable information" (Biospektrum)

☞ Brain-eating Amoebae: Biology and Pathogenesis of Naegleria fowleri
Author: Ruqaiyyah Siddiqui, Ibne Karim M. Ali, Jennifer R. Cope and Naveed Ahmed Khan (Published: 2016)
"explains the current knowledge and research" (ProtoView)

Full details at www.caister.com