

Book Review

**Phytopathogenic Procaryotes and Plant Diseases, by B.S. Thind**

Scientific Publishers (India) ([www.scientificpub.com](http://www.scientificpub.com))

Hardback/ISBN 978-81-7233-701-8/2012/576 pp. Price Rs. 2675 (\$US 110)

Paperback/ISBN 978-81-7233-780-3/2012/576 pp. Price Rs. 375 (\$US 13)

The book *Phytopathogenic Procaryotes and Plant Diseases* provides comprehensive, up-to-date information on aspects of phytopathogenic procaryotes, as well as comprehensive insights into their relationships with plants. The book is appropriately arranged in 13 chapters. Chapter 1 is an introduction to this group of important plant pathogens, and more generally to the science of plant bacteriology. The economic importance of phytopathogenic procaryotes is briefly highlighted, and the history of phytobacteriology is outlined. Chapters 2 and 3 are devoted to basic information on the procaryotic cell, growth and metabolism of bacteria, while the Chapter 4 describes mechanisms of variability in bacteria. An up-to-date and detailed classification of plant pathogenic bacteria is presented in Chapter 5, where 40 genera of plant pathogenic bacteria are outlined, and all the pathogenic species and pathovars reported to date are listed. Chapter 7 deals with fastidious phytopathogenic procaryotes, including methods used for their cultivation and characterization, and the plant diseases they cause. The disease symptoms caused by this group and information on their management are discussed in Chapter 13. Chapter 9 focuses on bacteriophages, including types of phages, their classification, how they replicate, and their uses. Chapter 10 is an excellent description of host-pathogen relationship, highlighting the gene-for-gene hypothesis, avirulence genes, hypersensitive response and pathogenicity genes, bacterial secretion systems, quorum sensing, and the role of toxins, enzymes, growth regulators and extracellular polysaccharides in plant disease development.

The diagnosis of bacterial diseases of plants is the main topic of Chapter 11. Several conventional techniques of diagnosis are described as well as more recently developed detection methods, such as monoclonal antibody-based enzyme-linked immunosorbent assays (ELISA) and PCR-based methods. Chapter

13 describes 52 bacterial plant diseases in diverse cultivated hosts. Included are economically important diseases of international importance such as bacterial blight of rice, ratoon stunting disease of sugarcane, bacterial wilt of solanaceous crops, soft rot of fleshy vegetables and fruits, crown gall of plants, citrus canker and citrus huanglongbing. The diseases described are well-chosen representatives from different crops and regions, without any important omissions. Diagnostic symptoms, pathogenic variability, disease cycles and practical management aspects are discussed in detail, with the latest literature adequately cited. Disease management, using biocontrol agents, plant growth-promoting rhizobacteria, bacteriophages, bacteriocins and siderophores, is also covered in Chapter 12. The usefulness of these strategies is documented with success stories. In recent years, there has been an increased emphasis on combination of various disease management strategies to effectively reduce the losses caused by devastating bacterial plant diseases. This aspect has been highlighted appropriately in the Chapters 12 and 13. The book ends with comprehensive subject and author indexes.

This book is written with clarity, in easy to understand language. It contains 68 high quality colour photographs and detailed and comprehensive information in tables on important aspects and illustrative schemes. The book covers important recent information about phytopathogenic procaryotes and diseases they cause, covering all relevant topics. This book will be of great value for students, teachers and professionals in phytopathology and plant disease control.

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