

Khan, J.A., Dijkstra, J. (ed.): **Plant Viruses as Molecular Pathogens**. - Food Products Press, an imprint of The Haworth Press, New York - London - Oxford 2002. 537 pp. Hardcover USD 129.95, ISBN 1-56022-894-6; softcover USD 59.95, ISBN 1-56022-895-4.

This book represents a valuable source of up to date information on diverse fields of plant molecular virology including current virus taxonomy, the molecular basis of virus transmission, movement of plant viruses, replication and gene expression of RNA/DNA viruses, resistance to viruses, recombination events, molecular diversity and novel aspects of plant virus detection technologies. Moreover, some chapters present very interesting concepts regarding the use of molecular techniques to gain new insight into long-standing pathological issues such as virus evolution, host adaptation, and epidemiology.

The book consists of six sections subdivided into twenty-one chapters. Chapter 1 in Section I gives an overview of the present plant virus classification and provides insight into taxonomic rationalization. The latest rules for writing the names of taxonomic entities are discussed in Chapter 2.

Section II contains five chapters dealing with the transmission and transport of viruses. Chapters 3 through 6 describe the various ways plant viruses are transmitted by insects, nematodes, and fungi as well as through seed. They present current knowledge of genes and gene products involved in their respective transmission strategies. Chapter 7 details molecular mechanisms involved in the movement of a virus in its host plant.

Molecular biology of RNA viruses is discussed in Section III. Chapter 8 reviews the mechanism of RNA synthesis by a viral RNA-dependent RNA polymerase, while Chapter 9 focuses on novel aspects of gene expression strategies. Events and mechanisms of recombinations encountered in nature as well as under experimental conditions are highlighted in Chapter 10. The last chapter in this section, Chapter 11, describes the main characteristics of the *Potyvirus* genus, the diversity

of *Potato virus Y* at the biological and molecular levels and discusses the evolutionary aspects of its variability.

Section IV dealing with molecular biology of DNA viruses (Chapters 12 - 15) covers mechanisms of DNA synthesis and gene expression, molecular epidemiology, translational strategies, and recombination.

How plants develop resistance to viral infection is the focus of Section V. Chapter 16 presents an exhaustive overview of natural resistance, and Chapter 17 describes biotechnological strategies of pathogen-derived resistance, with emphasis on RNA-mediated resistance.

Finally, different molecular methods are presented in Section VI. Chapter 18 describes expression of recombinant proteins, such as antibodies, and their role in engineered resistance. Chapter 19 provides information on the recent developments of nucleic acid-based hybridization methodology, its technological advances, and its potential role in studying plant viruses and vectors. The enormous versatility of PCR (polymerase chain reaction) is extensively reviewed in Chapter 20. This chapter highlights the significant use of PCR and discusses its different forms and technical protocols. Last, in Chapter 21, the early detection of viruses in animal vectors and their impact on epidemiological studies are presented.

Content and more informations about the book are available at the book's website:

[www.haworthpress.com/store/product.asp?sku=2170](http://www.haworthpress.com/store/product.asp?sku=2170)

The book "Plant Viruses as Molecular Pathogens" provides comprehensive approach to a range of topics in molecular plant virology, is excellently documented with illustrations, photos, figures, models, reference tables and detailed index. This book is very informative and valuable for all people with an interest in plant phytopathology, especially in plant virology.

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