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Titolo	Plant Viruses: Evolution and Management / / edited by Rajarshi Kumar Gaur, Nikolay Manchev Petrov, Basavaprabhu L. Patil, Mariya Ivanova Stoyanova
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ISBN	981-10-1406-X
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (316 p.)
Disciplina	570
Soggetti	Plant pathology Plant physiology Plant genetics Plant breeding Plant biochemistry Plant Pathology Plant Physiology Plant Genetics and Genomics Plant Breeding/Biotechnology Plant Biochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Preface -- List of Contributors -- Plant viruses: history and taxonomy -- Transmission and movement of plant viruses -- Infection, replication and expression of plant viruses in filamentous fungi -- Diverse roles of plant and viral helicases : current status and future perspective -- Cutting edge technologies for detection of plant viruses in vegetatively propagated crop plants -- Interactions among host and plant pararetroviruses: an ever evolving evolutionary dogma -- Viral diseases on medicinal plants of north-eastern Uttar Pradesh -- Geminivirus: Indian scenario -- Emerging satellites associated with begomoviruses: world scenario -- Epidemiology of begomoviruses: a global perspective -- Current knowledge of viruses infecting papaya and their transgenic management -- Potato virus y genetic variability: a

review -- Resistance against papaya ringspot virus in vasconcellea species: present and potential uses -- Closteroviruses: molecular biology, evolution and interactions with cells -- Major virus diseases of groundnut in India and their management -- Status of viruses infecting sunflower and strategies for their management -- Viral diseases of banana and their management -- About editors -- Index.

Sommario/riassunto

This book focuses on the evolution of plant viruses, their molecular classification, epidemics and management, covering topics relating to evolutionary mechanisms, viral ecology and emergence, appropriate analysis methods, and the role of evolution in taxonomy. The currently emerging virus species are increasingly becoming a threat to our way of life, both economically and physically. Plant viruses are particularly significant as they affect our food supply and are capable of rapidly spreading to new plant species. In basic research, plant viruses have become useful models to analyze the molecular biology of plant gene regulation and cell-cell communication. The small size of DNA genome of viruses possesses minimal coding capacity and replicates in the host cell nucleus with the help of host plant cellular machinery. Thus, studying virus cellular processes provides a good basis for explaining DNA replication, transcription, mRNA processing, protein expression and gene silencing in plants. A better understanding of these cellular processes will help us design antiviral strategies for plants. The book provides in-depth information on plant virus gene interactions with hosts, localization and expression and the latest advances in our understanding of plant virus evolution, their responses and crop improvement. Combining characterization of plant viruses and disease management and presenting them together makes it easy to compare all aspects of resistance, tolerance and management strategies. As such, it is a useful resource for molecular biologists and plant virologists alike.