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Plant Virology *Applied Plant Virology* **Comparative Plant Virology** *Geminiviruses* **Plant Virology** *Plant Viruses* **Grapevine Viruses: Molecular Biology, Diagnostics and Management Plant Virology Matthews' Plant Virology Plant Virology** *Plant Virology Plant Virus Emergence* Fundamentals of Plant Virology *Genomics and Biotechnological Advances in Veterinary, Poultry, and Fisheries* **Advances in Virus Research Current Research Topics in Plant Virology** Diversity, Distribution, and Current Status **Plant Virus Epidemiology Desk Encyclopedia of Plant and Fungal Virology Soilborne Microbial Plant Pathogens and Disease Management (Two Volume Set) A Century of Plant Virology in India** Seed-borne plant virus diseases **Environmental Virology and Virus Ecology Applied Plant Virology Plant Virology in Sub-Saharan Africa Handbook of Plant Virology** Phytoplasma Diseases of Major Crops, Trees, and Weeds **Insect Virology The Journal of General Virology Introduction to General Virology Phytopathogenic Bacteria and Plant Diseases International Journal of Tropical Plant Diseases** Plant Resistance to Viruses Plant RNA Viruses *Applied Plant Virology* Control of Plant Virus Diseases Soilborne Microbial Plant Pathogens and Disease Management, Volume Two **Encyclopedia of Virology Comprehensive and Molecular Phytopathology Virus Taxonomy**

Plant Virus Emergence Nov 22 2021 This compilation of articles elaborates on plant virus diseases that are among the most recent epidemiological concerns. The chapters explore several paradigms in plant virus epidemiology, outbreaks, epidemics, and pandemics paralleling zoonotic viruses and that can be consequential to global food security. There is evidence that the local, regional, national, and global trade of agricultural products has aided the global dispersal of plant virus diseases. Expanding farmlands into pristine natural areas has created opportunities for viruses in native landscapes to invade crops, while the movement of food and food products disseminates viruses, creating epidemics or pandemics. Moreover, plant virus outbreaks not only directly impact food supply, but also incidentally affect human health.

Control of Plant Virus Diseases Oct 29 2019 The first review series in virology and published since 1953, Advances in Virus Research covers a diverse range of in-depth reviews, providing a valuable overview of the field. The series of eclectic volumes are valuable resources to virologists, microbiologists, immunologists, molecular biologists, pathologists, and plant researchers. Volume 90 features articles on control of plant virus diseases. Contributions from leading authorities Comprehensive reviews for general and specialist use First and longest-running review series in virology

Applied Plant Virology Oct 02 2022 Applied Plant Virology: Advances, Detection, and Antiviral Strategies provides an overview on recent developments and applications in the field of plant virology. The book begins with an introduction to important advances in plant virology, but then covers topics including techniques for assay detection and the diagnosis of plant viruses, the purification, isolation and characterization of plant viruses, the architecture of plant viruses, the replication of plant viruses, the physiology of virus-infected hosts, vectors of plant viruses, and the nomenclature and classification of plants. The book also discusses defense strategies by utilizing antiviral agents and management strategies of virus and viroid diseases. With contributions from an international collection of experts, this book presents a practical resource for plant virologists, plant pathologists, horticulturalists, agronomists, biotechnologists, academics and researchers interested in up-to-date technologies and information that advance the field of plant virology. Covers the detection, control and management of plant viruses Discusses antiviral strategies, along with mechanisms of systemic induced resistance to enhance the defense of plants against viruses Provides contributory chapters from expert plant virologists from different parts of the world

Genomics and Biotechnological Advances in Veterinary, Poultry, and Fisheries Sep 20 2021 Genomics and Biotechnological Advances in Veterinary, Poultry, and Fisheries is a comprehensive reference for animal biotechnologists, veterinary clinicians, fishery scientists, and anyone who needs to understand the latest advances in the field of next generation sequencing and genomic editing in animals and fish. This essential reference provides information on genomics and the advanced technologies used to enhance the production and management of farm and pet animals, commercial and non-commercial birds, and aquatic animals used for food and research purposes. This resource will help the animal biotechnology research community understand the latest knowledge and trends in this field. Presents biological applications of cattle, poultry, marine and animal pathogen genomics Discusses the relevance of biomarkers to improve farm animals and fishery Includes recent approaches in cloning and transgenic cattle, poultry and fish production

Plant Virology Nov 03 2022 The seminal text Plant Virology is now in its fifth edition. It has been 10 years since the publication of the fourth edition, during which there has been an explosion of conceptual and factual advances. The fifth edition of Plant Virology updates and revises many details of the previous edition while retaining the important earlier results that constitute the field's conceptual foundation. Revamped art, along with fully updated references and increased focus on molecular biology, transgenic resistance, aphid transmission, and new, cutting-edge topics, bring the volume up to date and maintain its value as an essential reference for researchers and students in the field. Thumbnail sketches of each genera and family groups Genome maps of all genera for which they are known Genetic engineered resistance strategies for virus disease control Latest understanding of virus interactions with plants, including gene silencing Interactions between viruses and insect, fungal, and nematode vectors Contains over 300 full-color illustrations

Plant Resistance to Viruses Jan 31 2020 Concern about the environmental consequences of the widespread use of pesticides has increased, and evidence of pesticide-resistant virus vectors have continued to emerge. This volume presents a timely survey of the mechanisms of plant resistance and examines current developments in breeding for resistance, with particular emphasis on advances in genetic engineering which allow for the incorporation of viral genetic material into plants. Discusses the mechanisms of innate resistance in strains of tobacco, tomato, and cowpea; various aspects of induced resistance, including the characterization and roles of the pathogenesis-related proteins; antiviral substances and their comparison with interferon; and cross-protection between plant virus strains. Also presents several papers which evaluate the status of genetic engineering as it relates to breeding resistant plants. Among these are discussions of the potential use of plant viruses as gene vectors, gene coding for viral coat protein, satellite RNA, and antisense RNA, and practical issues such as the durability of resistant crop plants in the field.

Comparative Plant Virology Sep 01 2022 Comparative Plant Virology provides a complete overview of our current knowledge of plant viruses, including background information on plant viruses and up-to-date aspects of virus biology and control. It deals mainly with concepts rather than detail. The focus will be on plant viruses but due to the changing environment of how virology is taught, comparisons will be drawn with viruses of other kingdomes, animals, fungi and bacteria. It has been written for students of plant virology, plant pathology, virology and microbiology who have no previous knowledge of plant viruses or of virology in general. Boxes highlight important information such as virus definition and taxonomy Includes profiles of 32 plant viruses that feature extensively in the text Full color throughout

Diversity, Distribution, and Current Status Jun 17 2021 Diversity, Distribution, and Current Status is the first volume in a three-volume series dedicated to the analysis of this important group of plant pathogens across Asia with a particular focus on geographic distribution. This book offers updated data on the most prevalent phytoplasma diseases specific to each region. Phytoplasmas are emerging plant pathogens all around the world, causing significant economic losses to crops, as well as affecting international trade. The chapters in Volume 1 look closely at different countries and regions across Asia, providing data on country-wide distribution, phytoplasma groups, insect vectors and transmission. The Phytoplama Diseases in Asian Countries series will be an essential read for university students, researchers and agriculturalists interested in Plant

Pathology. Volume 1 will be of particular interest to those needing the latest data on the distribution and transmission rates specific to the various regions of Asia.
Current Research Topics in Plant Virology Jul 19 2021 Topics covered in this book include RNA silencing and its suppression in plant virus infection, virus replication mechanisms, the association of cellular membranes with virus replication and movement, plant genetic resistance to viruses, viral cell-to-cell spread, long distance movement in plants, virus induced ER stress, virus diversity and evolution, virus-vector interactions, cross protection, geminiviruses, negative strand RNA viruses, viroids, and the diagnosis of plant viral diseases using next generation sequencing. This book was anticipated to help plant pathologists, scholars, professors, teachers and advanced students in the field with a comprehensive state-of-the-art knowledge of the subject.
Fundamentals of Plant Virology Oct 22 2021 Fundamentals of Plant Virology is an introductory student text covering all of modern plant virology. The author, Dr. R.E.F. Matthews, has written this coursebook based on his classic and comprehensive Plant Virology, Third Edition. Four introductory chapters review properties of viruses and cells and techniques used in their study. Five chapters are devoted to current knowledge of all major plant viruses and related pathogens. Seven chapters describe biological properties such as transmission, host response, disease, ecology, control, classification, and evolution of plant viruses. A historical and future overview concludes the text. Fundamentals of Plant Virology is a carefully designed instructional format for a plant virology course. It is also an invaluable resource for students of plant pathology and plant molecular biology. Summarizes knowledge on all aspects of plant virology Condenses all essential material from Plant Virology 3/e Compares basic properties of cells and viruses Outlines principles of gene manipulation technology Discusses serological techniques including monoclonal antibodies Geared to student level course
Applied Plant Virology Nov 30 2019 For the past twenty years I have worked as an applied plant virologist, attempting to identify and control virus diseases in field crops. During the last ten years it has been my privilege to present short courses in plant virology to final-year students studying plant pathology, micro biology and general botany. Throughout the period I have been lecturing, it has been possible to recommend several excellent 'library' books for further reading in plant virology, but there has been no publication covering applied plant virology that a student might consider purchasing. With teaching requirements in mind this book has been written to provide a concise introduction to applied plant virology based on the experiences I have gained working on virus diseases, both in an applied laboratory and in the field. The text concentrates on introducing the reader to aspects of plant virology that would be encountered every day by an applied virologist trying to identify viruses and develop control measures for virus diseases of crop plants. Although a brief introduction to virus structure and its terminology is given in the opening chapter of the book, no attempt is made to cover in detail the more fundamental aspects of virus structure, biochemistry and replication. Similarly, the symptoms caused by individual viruses are not described, although the various types of symptoms that plant viruses cause and which might be encountered by a student or research worker are described.
Plant Virology Jun 29 2022 This edition updates and revises many details of the previous edition. Includes updated references and increased focus on molecular biology, transgenic resistance, aphid transmission, and new, cutting-edge topics.
A Century of Plant Virology in India Feb 11 2021 The book is a compilation of research work carried out on plant viruses during past 100 years in India. Plant viruses are important constraints in Indian agriculture. Tropical and sub-tropical environments and intensive crop cultivation practices ideally favours perpetuation of numerous plant viruses and their vectors in India, which often cause wide spread crop losses. Of all the plant pathogens, studies of plant viruses have received a special attention as they are difficult to manage. A large body of literature has been published on the plant virus research from India during past 100 years; however the information is so far not available in one place. This book provides comprehensive information on the biology, molecular biology, epidemics, crop losses, diagnosis and management of viruses and viroids occurring in India. Description of properties of the viruses are provided in the chapters comprising of different genera such as Allexivirus, Begomovirus, Babuvirus, Badnavirus, Carlavirus, Carmovirus, Cucumovirus, Closterovirus, Ilavirus, Mandrivirus, Potyvirus, Tospovirus, Tungrovirus and Sobemovirus. Virus-vector research related to aphid, thrips and whitefly is discussed. The work on the management aspects of plant viral diseases has been described with reference to the conventional, antiviral and transgenic approaches. Further, the quarantine mechanism developed in India for the exclusion of viruses and vectors has also been included. The book also provides useful information about the capacity building on the research and education on Plant Virology in India. Overall, the book covers a wide range of accounts of research findings and innovations in Plant Virology in India during past 100 years. The book will be a resourceful reference to the students, scientists, agricultural professionals and policy makers.
Seed-borne plant virus diseases Jan 13 2021 Seeds provide an efficient means in disseminating plant virus and viroid diseases. The success of modern agriculture depends on pathogen free seed with high yielding character and in turn disease management. There is a serious scientific concern about the transmission of plant viruses sexually through seed and asexually through plant propagules. The present book provides the latest information along with the total list of seed transmitted virus and viroid diseases at global level including, the yield losses, diagnostic techniques, mechanism of seed transmission, epidemiology and virus disease management aspects. Additional information is also provided on the transmission of plant virus and virus-like diseases through vegetative propagules. It is also well known that seed transmitted viruses are introduced into new countries and continents during large-scale traffic movements through infected germplasm and plant propogules. The latest diagnostic molecular techniques in different virus-host combinations along with disease management measures have been included. The book shall be a good reference source and also a text book to the research scientists, teachers, students of plant pathology, agriculture, horticulture, life sciences, green house managers, professional entrepreneurs, persons involved in quarantines and seed companies. This book has several important features of seed transmitted virus diseases and is a good informative source and thus deserves a place in almost all university libraries, seed companies and research organizations.
Soilborne Microbial Plant Pathogens and Disease Management, Volume Two Sep 28 2019 Crop disease management strategies revolve around the principles of exclusion, eradication and immunization. Cultural practices are aimed at preventing or reducing the accumulation of pathogen population (inoculum). Development of cultivars with genetic resistance by transgressing resistance gene(s) through traditional breeding procedures or biotechnological techniques is the most effective and acceptable strategy, as it is environment-friendly and does not need any additional cost to the grower. Assessment of different grades of resistance of cultivars or genotypes to soilborne microbial pathogens has been possible by quantifying pathogen populations or their DNA contents in the test plants by applying biological and molecular methods. This second volume of a two-volume set focuses on the soilborne microbial plant pathogens and the diseases caused by them. The book provides information on ecology and epidemiology of soilborne microbial plant pathogens and various strategies applicable for effective management of diseases. Chapters cover exclusion and prevention strategies; improvement of host plant resistance; biological management; application of chemicals; and integration of these disease management strategies. Features Discusses various aspects of soilborne microbial plant pathogens to develop effective methods of managing diseases. Presents information on epidemiology and ecology of soilborne microbial plant pathogens. Facilitates the application of management strategies alone or in combination with others for effective suppression of disease development. Features information on application of biotic and abiotic biological control agents (BCAs) to suppress pathogen development either by directly acting on the pathogen(s) or indirectly by enhancing host resistance to the pathogens. Employs biotic and abiotic biocontrol agents either to replace or reduce the use of chemicals is an achievable approach for managing the soilborne microbial pathogens.
Plant Viruses May 29 2022 Plant viruses cause many of the most important diseases threatening crops worldwide. Over the last quarter of a century, an increasing number of plant viruses have emerged in various parts of the world, especially in the tropics and subtropics. As is generally observed for plant viruses, most of the emerging viruses are transmitted horizontally by biological vectors, mainly insects. Reverse genetics using infectious clones-available for many plant viruses-has been used for identification of viral determinants involved in virus-host and virus-vector interactions. Although many studies have identified a number of factors involved in disease development and transmission, the precise mechanisms are unknown for most of the virus-plant-vector combinations. In most cases, the diverse outcomes resulting from virus-virus interactions are

poorly understood. Although significant advances have been made towards understand the mechanisms involved in plant resistance to viruses, we are far from being able to apply this knowledge to protect cultivated plants from the all viral threats.The aim of this Special Issue was to provide a platform for researchers interested in plant virology to share their recent results. To achieve this, we invited the plant virology community to submit research articles, short communications and reviews related to the various aspects of plant virology: ecology, virus-plant host interactions, virus-vector interactions, virus-virus interactions, and control strategies. This issue contains some of the best current research in plant virology.

Environmental Virology and Virus Ecology Dec 12 2020 Environmental Virology, Volume 101, the latest in the Advances in Virus Research series, contains new, informative updates on the topic. First published in 1953, this series covers a diverse range of in-depth reviews, providing a valuable overview of the current field of virology. Updates to this release include sections on the host landscape and vector behavior, key determinants of plant virus evolution and emergence, plant virome analysis using spatial metagenomics, host range evolution in generalist viruses, the influence of environment, water-mediated spread and transmission of viruses, viruses transmitted by means other than insect vectors, and more. Contains contributions from leading authorities in the field of virology Informs and updates on all the latest developments in the field Features a diverse range of virology topics, including discussions of host landscape and vector behavior and viruses transmitted by means other than insect vectors

Plant Virology Jan 25 2022 Major developments have taken shape in the ten years since the publication of Plant Virology, Second Edition. This Third Edition of the leading comprehensive text and reference for the field contains more than sixty percent new material, including applications and results of gene manipulation techniques. As with the first and second editions, this volume covers all aspects of plant virology, from molecular to ecological. Plant Virology, Third Edition, is intended for graduate students, researchers, and teachers in plant virology, plant pathology, general virology, and microbiology, and scientists in related areas of molecular biology, biochemistry, plant physiology, and entomology.

Geminiviruses Jul 31 2022 This book provides in-depth information on all key aspects of geminivirus biology, e.g. the genetics and evolution, global diversity and spread of these plant pathogens, as well as the molecular mechanisms underlying their virulence. Geminiviridae is one of the largest viral families, comprising numerous plant-infecting viruses that cause diseases in crops and weeds. These diseases have been reported from nearly all continents, in particular Asia, Europe, Africa and America. The book summarizes the current state of knowledge on the interactions between plant host and virus. In addition, it discusses advances regarding the trans-replication of satellite molecules and its effect on geminiviral pathogenesis, as well as pest management strategies to combat these diseases in the field. Given its scope, the book is a must-read reference guide for all researchers and advanced students working in virology, agriculture and plant biotechnology..

Plant Virology in Sub-Saharan Africa Oct 10 2020

Insect Virology Jul 07 2020 Insect Virology focuses on viruses affecting insects, from the Tipula and Sericesthis iridescent viruses to the acute and chronic bee paralysis viruses and sacbrood virus. The book explores the symptomatology and pathology of virus diseases in insects; the isolation and purification of the viruses as well as their morphology and chemistry; and the host range. Organized into 12 chapters, this book begins with a historical overview of insect virology and its emergence as a scientific discipline, along with the previous studies on virus diseases in insects. Before discussing the different kinds of viruses and their distribution throughout the insect kingdom, the book first describes the viruses attacking the insects and the diseases they cause. The book then examines the mode of virus replication, transmission, and latent viral infections. The text explains a rapidly developing technique, the growing of insect tissues in culture, and its use to study the virus in the living cell. The book also considers the relationships of plant viruses with the insects that transmit them. The last chapter deals with the use of insect viruses in the biological control of insect pests. This book is a valuable source of information for entomologists, insect virologists, virologists in other fields, microbiologists, and others interested in insect virology.

Encyclopedia of Virology Aug 27 2019 Encyclopedia of Virology, Fourth Edition, builds on the solid foundation laid by the previous editions, expanding its reach with new and timely topics. In five volumes, the work provides comprehensive coverage of the whole virosphere, making this a unique resource. Content explores viruses present in the environment and the pathogenic viruses of humans, animals, plants and microorganisms. Key areas and concepts concerning virus classification, structure, epidemiology, pathogenesis, diagnosis, treatment and prevention are discussed, guiding the reader through chapters that are presented at an accessible level, and include further readings for those needing more specific information. More than ever now, with the Covid19 pandemic, we are seeing the huge impact viruses have on our life and society. This encyclopedia is a must-have resource for scientists and practitioners, and a great source of information for the wider public. Offers students and researchers a one-stop shop for information on virology not easily available elsewhere Fills a critical gap of information in a field that has seen significant progress in recent years Authored and edited by recognized experts in the field, with a range of different expertise, thus ensuring a high-quality standard

Introduction to General Virology May 05 2020 Introduction to General Virology provides broad overview of the fundamental and applied aspects of virology. The book starts off with broad overview which includes topics such as milestones in the development of virology, the general properties of viruses, morphology, genome organization and genetics, replication strategies, and taxonomy. The remaining parts cover specific types of viruses. Part 2 covers the properties, classification, structural organization, and life cycle of bacteriophages. Part 3 includes select human and animal viruses as well as insect and prion viruses. Part 4 and plant virology rounds out the book discusses plant virus classification, nomenclature, disease symptoms, transmission, detection and diagnosis, management, and control. Introduction to General Virology is an informative introductory resource for advanced undergraduates, graduate students, professors, or researchers entering virology, microbiology, and infectious diseases. Provides an overview of the development of virology, properties of viruses, morphology, taxonomy, genome organization, viral genetics, and replication strategies Covers both the fundamental and applied aspects of animal, human, bacterial, insect, and plant virology Discusses select infectious diseases caused by viruses such as Ebola, Zika, Coronaviruses, HIV, and Oncoviruses

Virus Taxonomy Jun 25 2019 This is the standard and definitive reference for virus taxonomy, generated by the ICTV approximately every 3 years. The VIII ICTV Virus Taxonomy Report provides information on 3 orders of viruses, 73 families, 9 subfamilies, 287 genera and 1938 virus species, illustrated by more than 429 pictures and diagrams, most of them in color. * The standard official ITCV reference for virus taxonomy and nomenclature, compiling data from 500 international experts * Covers over 6000 recognized viruses, organized by family with diagrams of genome organization and virus replication cycle * Provides data on the phylogenic relationships between viruses belonging to the same or different taxa * Now includes information about the qualitative and quantitative relationships between virus sequences

Desk Encyclopedia of Plant and Fungal Virology Apr 15 2021 This volume consists of 85 chapters that highlight recent advances in our knowledge of the viruses that infect plants and fungi. It begins with general topics in plant virology including movement of viruses in plants, the transmission of plant viruses by vectors, and the development of virus-resistant transgenic plants. The second section presents an overview of the properties of a selection of 20 well-studied plant viruses, 23 plant virus genera and a few larger groups of plant viruses. The third section, which is abundantly illustrated, highlights the most economically important virus diseases of cereals, legumes, vegetable crops, fruit trees and ornamentals. The last section describes the major groups of viruses that infect fungi. The most comprehensive single-volume source providing an overview of virology issues related to plant and fungi Bridges the gap between basic undergraduate texts and specialized reviews Concise and general overviews of important topics within the field will help in preparation of lectures, writing reports, or drafting grant applications

Comprehensive and Molecular Phytopathology Jul 27 2019 This book offers a collection of information on successive steps of molecular ‘dialogue’ between plants and pathogens. It additionally presents data that

reflects intrinsic logic of plant-parasite interactions. New findings discussed include: host and non-host resistance, specific and nonspecific elicitors, elicitors and suppressors, and plant and animal immunity. This book enables the reader to understand how to promote or prevent disease development, and allows them to systematize their own ideas of plant-pathogen interactions. * Offers a more extensive scope of the problem as compared to other books in the market * Presents data to allow consideration of host-parasite relationships in dynamics and reveals interrelations between pathogenicity and resistance factors * Discusses beneficial plant-microbe interactions and practical aspects of molecular investigations of plant-parasite relationships * Compares historical study of common and specific features of plant immunity with animal immunity

Grapevine Viruses: Molecular Biology, Diagnostics and Management Apr 27 2022 The domestication of grapes dates back five thousand years ago and has spread to nearly all continents. In recent years, grape acreage has increased dramatically in new regions, including the United States of America, Chile, Asia (China and India), and Turkey. A major limiting factor to the sustained production of premium grapes and wines is infections by viruses. The advent of powerful molecular and metagenomics technologies, such as molecular cloning and next generation sequencing, allowed the discovery of new viruses from grapes. To date, grapevine is susceptible to 64 viruses that belong to highly diverse taxonomic groups. The most damaging diseases include: (1) infectious degeneration; (2) leafroll disease complex; and (3) rugose wood complex. Recently, two new disease syndromes have been recognized: Syrah decline and red blotch. Losses due to fanleaf degeneration are estimated at $1 billion annually in France alone. Other diseases including leafroll, rugose wood, Syrah de cline and red blotch can result in total crop loss several years post-infection. This situation is further exacerbated by mixed infections with multiple viruses and other biotic as well as adverse abiotic environmental conditions, such as drought and winter damage, causing even greater destruction. The book builds upon the last handbook (written over twenty years ago) on the part of diagnostics and extensively expands its scope by inclusion of molecular biology aspects of select viruses that are widespread and economically most important. This includes most current information on the biology, transmission, genome replication, transcription, subcellular localization, as well as virus-host interactions. It also touches on several novel areas of scientific inquiry. It also contains suggested directions for future research in the field of grapevine virology.

Soilborne Microbial Plant Pathogens and Disease Management (Two Volume Set) Mar 15 2021 Soil has a versatile role in supporting the development of a wide range of organisms, including plants and microorganisms. Soilborne pathogens and root diseases are the primary limiting factor in many crops and tend to be very difficult to control. This first volume of a two-volume set introduces disease-causing microorganisms including oomycetes, fungi, bacteria, and viruses found in soils. It focuses on the biology, detection, and identification of soilborne bacterial, fungal, and viral plant pathogens. Volume two provides information on ecology and epidemiology of soilborne microbial plant pathogens and strategies applicable to manage diseases. Chapters cover exclusion and prevention strategies; improvement of host plant resistance; biological management; application of chemicals; and integration of disease management strategies.

International Journal of Tropical Plant Diseases Mar 03 2020

Plant Virology Dec 24 2021 Plant Virology, Second Edition, was written to cover the substantial developments in many areas of plant virology since the first edition was published. Advances have been made in all branches of the subject, but these have been most far reaching with respect to the structure of viruses and of their components, and in the understanding of how viral genomes are organized and how viruses replicate in cells. Significant developments have also occurred in the understanding of how viruses are transmitted by invertebrates and in the application of control measures for specific diseases. The taxonomy of viruses has advanced significantly, and there are now 25 internationally approved families and groups of plant viruses. All these developments have required that most sections be entirely rewritten. This book is intended primarily for graduate students in plant pathology, plant virology, general virology, and microbiology, and for teachers and research workers in these fields. It should also prove useful to some people in related disciplines—molecular biologists, biochemists, plant physiologists, and entomologists.

Applied Plant Virology Nov 10 2020 Written for advanced undergraduate students, this book is a practical, in-depth guide to plant virology. Beginning with an introduction to viruses and their classification, the text describes virus pathology, including how viruses enter and move through plant cells and induce disease. Subsequent chapters discuss how viruses spread in the field and how to measure this. Throughout, the book remains reader-friendly, using focus boxes for clear, easy to obtain information, enabling students to quickly access relevant information but supply sufficient detail for advanced studies. In addition to basic information on virus biology there is an additional focus on applied virology, ideal for students undertaking agricultural studies for whom study of disease and its control is essential.

The Journal of General Virology Jun 05 2020

Plant Virus Epidemiology May 17 2021 Published since 1953, Advances in Virus Research covers a diverse range of in-depth reviews providing a valuable overview of the current field of virology. In 2004, the Institute for Scientific Information released figures showing that the series has an Impact Factor of 2.576, with a half-life of 7.1 years, placing it 11th in the highly competitive category of Virology. * Edited by an experienced plant pathologist who has over 50 years experience in plant virus epidemiology * Covers topics such as Evolutionary epidemiology of plant virus disease, The control of tropical plant virus diseases, and Control of plant virus diseases * A valuable resource for students and researchers alike

Matthews' Plant Virology Feb 23 2022 It has been ten years since the publication of the third edition of this seminal text on plant virology, during which there has been an explosion of conceptual and factual advances. The fourth edition updates and revises many details of the previous editon, while retaining the important older results that constitute the field's conceptual foundation. Key features of the fourth edition include: * Thumbnail sketches of each genera and family groups * Genome maps of all genera for which they are known * Genetic engineered resistance strategies for virus disease control * Latest understanding of virus interactions with plants, including gene silencing * Interactions between viruses and insect, fungal, and nematode vectors * New plate section containing over 50 full-color illustrations

Plant RNA Viruses Jan 01 2020 Plant RNA Viruses: Molecular Pathogenesis and Management provides wide-ranging coverage of the of the recognition and signaling events between plants and RNA viruses. The book examines the molecular biology of signaling, host-virus interaction, RNA virus diversity, and how plants and cellular pathogens interact. Plant RNA Viruses is organized into three sections - Section 1: Virus Diversity and Diagnosis, Section 2: Virus-Host Interactions, and Section 3 Virus Management. The book begins with an overview of the classification and nomenclature of the viruses and details the molecular characteristics of viral genomes, which plays a key role in pathogenicity towards the host, in plant viruses. The book highlights the viral manipulation of cellular key regulatory systems for successful virus infection and discusses the movement of plant viruses into plant cells. Additional topics include RNA plant viruses and host interaction, detection and diversity of plant RNA viruses, and strategies for combating and management of plant viruses. With contributions from an international group of experts, the book is a comprehensive reference for those in research, academia and industry engages in the study of the plant viruses at the molecular level.

Phytoplasma Diseases of Major Crops, Trees, and Weeds Aug 08 2020 Phytoplasma Diseases of Major Crops, Trees, and Weeds is the second volume in a three-volume series dedicated to the analysis of plant pathogenic phytoplasmas across Asia. With a close look into the different types of plants affected by phytoplasma, the book offers management strategies to develop resistant plant strains. Phytoplasma diseases pose serious economic losses in many Asian countries, for which there is very little awareness within society. The chapters in Volume 2 comprehensively review predominant plant species and how they are impacted by phytoplasma diseases, providing information on host-pathogen interaction, characterization, and genetic diversity. The Phytoplasma Diseases in Asian Countries series will be an essential read for students, researchers and agriculturalists interested in plant pathology. Volume 2 will be of particular interest to those needing to access the latest information on plant management and successful plant breeding strategies.

Advances in Virus Research Aug 20 2021 Published since 1953, Advances in Virus Research covers a diverse range of in-depth reviews providing a valuable overview of the current field of virology. In 2004, the Institute for Scientific Information released figures showing that the series has an Impact Factor of 2.576, with a half-life of 7.1 years, placing it 11th in the highly competitive category of Virology.

Handbook of Plant Virology Sep 08 2020 All the information you need on plant viruses in a single volume The Handbook of Plant Virology is a comprehensive guide to the terms and expressions commonly used in the study of plant virology, complete with descriptions of plant virus families down to the generic level. Rather than simply listing terms in alphabetical order, this unique book links each term to related terms within a theme and adds commentary from authors whose specific expertise adds additional dimensions to the topics. The result is an invaluable resource for research workers, educators, and students working in plant virology and pathology, crop protection, molecular biology, and plant breeding. The Handbook of Plant Virology provides enough details and background in the discussion of each topic to present a clear and thorough understanding of terms without the lengthy analysis found in most textbooks. The book's first section covers: the mechanics of virus classification internal and external symptoms (with color illustrations) isolation and purification genome packaging replication and gene expression detection and identification various methods of virus transmission serology forecasting disease development recombination control strategies economic importance and much more The second section of The Handbook of Plant Virology is devoted to concise descriptions of the 81 genera and 18 families of plant viruses, including: positive-sense, single-stranded RNA viruses, such as Potyviridae, Sequiviridae, and Comoviridae double-stranded RNA viruses, such as Reoviridae and Partitiviridae negative-sense, single-stranded RNA viruses, such as Rhabdoviridae and Bunyaviridae single-stranded DNA viruses, such as Geminiviridae, Pseudoviridae, Metaviridae The Handbook of Plant Virology also includes photos, illustrations, figures, diagrams, and brief, but detailed, bibliographies. The book's concise mix of information on currently assigned taxonomic families and the genera of plant viruses make it an essential reference tool for practitioners, researchers, educators, and students.

Phytopathogenic Bacteria and Plant Diseases Apr 03 2020 The field of Phytobacteriology is rapidly advancing and changing, because of recent advances in genomics and molecular plant pathology, but also due to the global spread of bacterial plant diseases and the emergence of new bacterial diseases. So, there is a need to integrate understanding of bacterial taxonomy, genomics, and basic plant pathology that reflects state-of-the-art knowledge about plant-disease mechanisms. This book describes seventy specific bacterial plant diseases and presents up-to-date classification of plant pathogenic bacteria. It would be of great help for scientists and researchers in conducting research on ongoing projects or formulation of new research projects. The book will also serve as a text book for advanced undergraduate and postgraduate students of disciplines of Phytobacteriology and Plant Pathology. Contains latest and updated information of plant pathogenic bacteria till December 2018 Describes seventy specific bacterial diseases Presents classification of the bacteria and associated nomenclature based on Bergey's Manual Systematic Bacteriology and International Journal of Systematic and Evolutionary Microbiology Discusses practical and thoroughly tested disease management strategies that would help in controlling enormous losses caused by these plant diseases Reviews role of Type I-VI secretion systems and peptide- or protein-containing toxins produced by bacterial plant pathogens Briefs about plants and plant products that act as carriers of human enteric bacterial pathogens, like emphasizing role of seed sprouts as a common vehicle in causing food-borne illness Dr B. S. Thind was ex-Professor-cum-Head, Department of Plant Pathology, Punjab Agricultural University Ludhiana, India. He has 34 years of experience in teaching, research, and transfer of technology. He has conducted research investigations on bacterial blight of rice, bacterial stalk rot of maize, bacterial blight of cowpea, bacterial leaf spot of green gram, bacterial leaf spot of chillies and bacterial soft rot of potatoes. He also acted as Principal Investigator of two ICAR-funded research schemes entitled, "Detection and control of phytopathogenic bacteria from cowpea and mungbean seeds from 1981 to 1986 and "Perpetuation, variability, and control of Xanthomonas oryzae pv. oryzae, the causal agent of bacterial blight of rice" from 1989 to 1993, and also of a DST funded research scheme "Biological control of bacterial blight, sheath blight, sheath rot, and brown leaf spot of rice" from 1999 to 2002. He also authored a manual entitled, "Plant Bacteriology" and a text book entitled, "Phytopathogenic Procaryotes and Plant Diseases" published by Scientific Publishers (India). He is Life member of Indian Phytopathological Society, Indian Society of Plant Pathologists, Indian Society of Mycology and Plant Pathology, and Indian Science Congress Association.

Plant Virology Mar 27 2022 It has been ten years since the publication of the third edition of this seminal text on plant virology, during which there has been an explosion of conceptual and factual advances. The fourth edition updates and revises many details of the previous editon, while retaining the important older results that constitute the field's conceptual foundation. Key features of the fourth edition include: * Thumbnail sketches of each genera and family groups * Genome maps of all genera for which they are known * Genetic engineered resistance strategies for virus disease control * Latest understanding of virus interactions with plants, including gene silencing * Interactions between viruses and insect, fungal, and nematode vectors * New plate section containing over 50 full-color illustrations