

CHAPTER

1

**PLANT PATHOLOGY- IN-
TRODUCTION, HISTORY
AND IMPORTANCE**

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ABSTRACT

Plant pathology (also phytopathology) is study of diseases in plants caused by pathogens and environment conditions. The causal agent may be a fungus, bacterium, virus or parasitic flowering plant. It deals with cause, control and prevention of plant diseases at *in vitro* as well as field level. Plant pathology began with Theophrastus in the ancient era, when he studied plant diseases in field and influence of environment on disease development. The scientific approach to plant pathology began with the Early Modern period with the invention of microscope by Leeuwenhoek. Since then, with the advent of technologies new discoveries are being made which helps us prevent these diseases, which have a potential to cause famines and widespread epidemics and lead to heavy economic losses.

Keywords: Plant Pathology, history, mycology, bacteria, virology, epidemiology

INTRODUCTION

“Plant Diseases are Shift Enemies”

- E C Stakman

Introduction To The History Of Plant Pathology

**C. Lee Campbell, Paul David
Peterson, Clay S. Griffith**



Introduction To The History Of Plant Pathology:

Introduction to the History of Plant Pathology Geoffrey Clough Ainsworth,1981 Provides a concise and straightforward account of the historical development of the diverse and interwoven themes of infectious diseases of plants

An Introduction to the History of Plant Pathology Don Edwin Ellis,1969 *Fundamentals of Plant Pathology* S. Parthasarathy,2024-02-06 This book introduces the nature causes and impact of plant diseases describes briefly the history of plant pathology as a scientific discipline and introduces the disease cycle as the key tool for understanding disease development and devising appropriate management strategies The book describes the diverse organisms and agents that cause diseases plant pathogens Print edition not for sale in India *Introduction to Principles of Plant Pathology* R. S. Singh,2017-09-30 The rapid advances in concepts of different aspects of plant pathology since 1984 have compelled the present revision and expansion of the book To avoid repetition the chapter on plant disease management is condensed At the same time new information on epidemiology host parasite relationship and genetic and molecular aspects of host parasite interaction have been incorporated Contents Introduction History of Plant Pathology Causes of Plant Diseases Symptoms and Identification of Plant Diseases Pathogenesis Survival of Plant Pathogens Dispersal of Plant Pathogens The Phenomenon of Infection Epidemiology Effect of Infection on the Host Role of Toxins in Plant Pathogenesis Defence Mechanisms in Plants Genetic Variability in Plant Pathogens Genetics and Molecular Basis of Host Parasite Interaction Effect of Environments on Pathogenesis Assessment of Disease Incidence Severity and Loss Disease Management Principles Disease Management The Practices *Plant Pathology and Disease Management* S. Parthasarathy,P. Lakshmidivi,V.K. Satya,C.

Gopalakrishnan,2024-02-06 This book introduces the nature causes and impact of plant diseases It briefly describes the history of plant pathology as a scientific discipline and introduces the disease cycle as the key tool for understanding disease development and devising appropriate management strategies It addresses the mechanisms of pathogenicity and immunity It explores the biology of the interactions between plants and plant pathogens from the cellular level to the population level with the chapter addressing epidemiology The book then concerns the approaches we can take to alleviate the effects of plant pathogens Print edition not for sale in India *Plant Pathology at a Glance (Encyclopedia of Plant Pathology)* D. P.

Tripathi,2013-06-01 The book entitled *Plant Pathology at a Glance* has been written exclusively for under graduate and post graduate students of general Botany Mycology Microbiology Plant Virology Plant Bacteriology Plant Nematology and Plant Pathology It covers core courses prescribed by most of the Universities and Institutions The book has been divided into fifteen chapters dealing with difference aspects of Plant Pathology and its sub disciplines Plant diseases incited by different biotic and abiotic pathogens have also been described in brief making the book comprehensive informative and all in one

The Formative Years of Plant Pathology in the United States C. Lee Campbell,Paul David Peterson,Clay S. Griffith,1999 The *Formative Years of Plant Pathology in the United States* describes more completely than ever before the history of where

and how the scientific interest in plant disease arose and was developed. Covering the early events of plant pathology and related disciplines, this book shows how the impact of major figures, organizations, and education led to the successful development of this scientific field. This history will be an enjoyable read for anyone interested in the shaping of this science and profession.

Principles of Plant Pathology Charles Elmer Owens, 1928. Modern plant pathology. Definition, symptoms, and classification of plant diseases. Methods of investigating plant diseases. Plant diseases as related to environment. Plant diseases control. General statement. Fungicides. Disease-free seed and nursery stock. Quarantine and inspection. Sick soil. Disease resistance in plants. Relation of insects to plant diseases. Diseases caused by slime molds. Diseases caused by bacteria. Diseases caused by fungi phycmycetes. Diseases caused by fungi ascomycetes. Diseases caused by fungi basidiomycetes. Diseases caused by fungi imperfecti. Diseases caused by algae. Diseases caused by parasitic seed plants. Diseases caused by nematodes. Virus diseases. Non-parasitic diseases.

The History of Natural History Gavin D. R. Bridson, 2008. With over 500 added references, this revised and updated edition is an essential source of information for scientists, researchers, and enthusiastic amateurs. The History of Natural History is one of those key works that should be kept in easy reach of anyone interested in the study of natural history in all its branches.

Plant Pathology V1 James G. Horsfall, 2012-12-02. *Plant Pathology: An Advanced Treatise, Volume I: The Diseased Plant* presents an integrated synthesis of the scope, importance, and history of plant pathology, emphasizing the concept of disease, not of diseases. The book focuses on pathological processes, defense devices, predisposition, and therapy of the diseased plant. It explores the normal pathways that are obstructed in sick plants, how the pathogen causes dysfunction, and how the host plant reacts to the pathogen. This book also considers the logistics and the strategy of disease and how to combat it. This volume is organized into 15 chapters and begins with an overview of plant pathology, its history, and its relation to other sciences, along with plant predisposition to disease and the resistance-susceptibility problem. The next chapters examine how sickness in plants is recognized and diagnosed, the tissue breakdown in diseases, and the effects of parasites on the processes in plants. The impact of disease on water balance and respiration in plants, and the histology of disease resistance in plants, are also explained. This volume also covers the physiological and chemical basis of defense by higher plants against potential or invading pathogens, and the hypersensitivity concept in plant pathology. The final chapter discusses the physical and chemical therapy of the diseased plant. This book will appeal to all who are interested in a theoretical treatment of plant pathology and in the broad ecological relationships among organisms, as well as to research workers and advanced students of applied biology.

Phytopathology, 1928. Some issues accompanied by lists of members of the society.

Manual of Plant Diseases Fred DeForest Heald, 1926. Symptoms of disease in plants. Non-parasitic diseases. Diseases due to deficiencies of food materials in the soil. Diseases due to excesses of soluble salts in the soil. Diseases due to unfavorable water relations. Diseases due to improper air relations. Diseases due to high temperatures. Diseases due to low temperatures. Diseases due to unfavorable light relations. Diseases due to

manufacturing or industrial processes Diseases due to control practices Virus and related diseases Parasitic diseases
 Bacterial diseases of plants Diseases due to slime molds The conditions of a fungus in or on the substratum Diseases due to
 downy mildews and allies Diseases due to pondscum parasites Diseases due to black molds and allies Diseases due to leaf
 curls and related fungi Diseases due to cup fungi and allies Diseases due to powdery mildews and allies Diseases due to
 sphere fungi and allies Diseases due to imperfect fungi Diseases due to smut fungi Diseases due to rust fungi Diseases due to
 palisade fungi and allies Parasitic seed plants and the troubles they cause Nematodes and the diseases they cause *Plant
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 Blight Disease of Potato 63 69 13 Tikka Disease of Ground nut 70 74 14 Yellow vein mosaic of bean 75 76 15 Little leaf of
 brinjal 77 79 16 Citrus canker 80 81 Perspectives in World Agriculture Commonwealth Agricultural Bureaux, 1980
Historical Studies in the Natural Sciences, 2008 **A Text-book of Mycology and Plant Pathology** John William
 Harshberger, 1917 **The Actinomycetes**, 1981 *Technical Bulletin* Virginia Agricultural Experiment Station, 1920
Progress in Mycology Tulasi Satyanarayana, Sunil Kumar Deshmukh, Mukund V. Deshpande, 2021-08-20 Indian
 mycologists have extensively studied various groups of fungi such as soil fungi aquatic fungi marine fungi endophytic fungi
 fungi associated with man and animals Though several books on various aspects of fungi are published this is the first
 account of the history and developments in mycology in India It discusses at length various stages of development of
 mycology including both classical and biotechnological aspects It begins with a historical account of Indian mycology
 followed by a description of research on fossil fungi Further chapters cover the latest updates on different taxonomic groups
 of fungi A dedicated section describes the roles and applications of fungal endophytes The book also includes research in
 other important areas such as mushrooms and wood rotting fungi Different chapters are written by leading mycologists This
 book is useful to students teachers and researchers in botany microbiology biotechnology and life sciences agriculture and
 industries using fungi to produce various valuable products Indian Journal of Mycology and Plant Pathology, 1979

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dec 3 2015 gas mulia dan halogen merupakan unsur kimia yang sifatnya sangat bertolak belakang gas mulia dinamakan mulia karena seperti logam mulia sukar sekali bereaksi sementara halogen halos garam artinya adalah pembentuk garam halogen memiliki 6 bilangan oksidasi sehingga mudah sekali berreaksi dengan unsur lainnya gas mulia noble

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pembuatan gas mulia gas helium mempunyai titik didih yang sangat rendah yaitu 268 8 0c sehingga pemisahan gas helium dari gas alam dilakukan dengan cara pengembunan liquefaction sampai gas alam akan mencair sekitar 156 0c dan gas helium terpisah dari gas alam pembuatan ne ar kr dan xe dilakukan dengan proses destilasi bertingkat

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oct 7 2021 disebut gas mulia karena semua unsur pada golongan ini berwujud gas dan memiliki konfigurasi elektron yang sangat stabil sehingga akan sangat sulit untuk bereaksi dengan unsur lainnya unsur unsur gas mulia antara lain adalah helium he neon ne argon ar kripton kr xenon xe dan radon rn

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nov 26 2015 1 wujud gas mulia unsur gas mulia terdapat sebagai gas tak berwarna yang monoatomik ini erat kaitannya dengan struktur elektronoktet dan duplet dari gas mulia sedangkan wujud gas pada suhu kamar disebabkan titik

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apr 16 2017 mempunyai titik didih dan titik leleh yang sangat rendah jari jari atom gas mulia sangat kecil mempunyai elektron valensi 8 khusus untuk helium elektron valensinya 2 sudah stabil sehingga sukar membentuk senyawa dengan unsur lain dialam tidak pernah di temukan senyawa gas mulia gas mulia terdapat sebagai molekul monoatomik

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