

## Book review

***Phytophthora Diseases Worldwide***. By D. C. Erwin and O. K. Ribeiro. 1996. APS Press, St. Paul, Minnesota, USA. Price: US \$145.00- Elsewhere \$180.00. ISBN 0-89054-212-0.

Ever since the potato late blight epidemics of the mid-nineteenth century, members of the genus *Phytophthora* have emerged as major pathogens of innumerable crops. Nowadays, with more than fifty species recognized, *Phytophthora* remains an active subject of study for both fundamental and applied scientists.

In recent years, several books have been published on *Phytophthora* pathogens and diseases. None has been as comprehensive as this monumental 560 page treatise by Donald C. Erwin and Olaf K. Ribeiro. Various aspects of the biology and methods of study of the genus are presented in the first seven chapters, followed by 64 chapters in which each species is treated separately. The list of cited literature, covering 86 pages, contains full titles and is a valuable representation of the *Phytophthora* literature. A short glossary precedes the index.

One strength of this book is the combination of fundamental concepts with more practical facts. Numerous research methods and aspects of the biology of *Phytophthora* are summarized in the convenient format of tables and appendices. Information is compiled on subjects as diverse as selective chemicals, fungicide resistance, growth and isolation media, baiting techniques, sporangial production, oospore germination, taxonomic classification and characteristics, and identification using molecular technology. Such an extensive coverage of methodology makes the book a useful bench companion to both seasoned *Phytophthora* researchers and newcomers to the field.

The systematic description of each recognized species in individual chapters is particularly judicious and convenient for the reader. For each species (or major varieties for some species) historical accounts,

taxonomic status, detailed morphological descriptions, growth requirements, and distinguishing characteristics are given. These are often accompanied by high quality illustrations and summary tables. Diseases caused by the examined species are then described and all host plants known in the literature are listed along with their geographical distribution. These listings of host plants are sure to raise some eye-brows and can be confusing at times. This is best illustrated by the chapter on *P. infestans* where ninety host plants are named, whereas in the appendix of chapter 4, this species is said to display a narrow host range (one to two species). Nevertheless, despite these limitations, the lists will serve as good reference points to readers interested in host-specificity of *Phytophthora* species.

The bulk of the information contained in the book will remain current for some years. However, some data, particularly those related to the taxonomy of the genus will soon be outdated. A number of laboratories are involved in phylogenetic analyses using molecular data, particularly rDNA sequences. Several articles on the subject have been published recently. This research will lead to a grouping of *Phytophthora* species in phylogenetic units that may not necessarily match the taxonomic groups used in the book. A good understanding of the phylogenetic relationships between *Phytophthora* species is essential for comparative biological studies and for designing sound disease control approaches.

It is unfortunate that little attention is given to the molecular biology and genetics of *Phytophthora*. To date, 74 nucleotide and ninety protein sequences from *Phytophthora* species can be retrieved from databases. Only a handful of these genes and proteins are mentioned in the book. A number of laboratories are actively isolating and characterizing genes and macromolecules involved in fundamental aspects of the biology of *Phytophthora*, such as, pathogenesis, host-specificity, development, mating, and chemotaxis. Understanding the molecular mechanisms under-

lying the biology and pathology of *Phytophthora* will not only improve our knowledge of the genus but will also lead to novel disease control strategies.

Despite the stated criticism, this book is destined to become a plant pathology classic. It is a helpful reference work for students and researchers alike. This is also a timely publication considering that an increasing number of researchers from diverse backgrounds are

studying *Phytophthora*. Hopefully, a captivating work as this one will encourage even more researchers to join the field.

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