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Book review

A.J. van der Plaats-Niterink, 1981. Monograph of the genus *Pythium*. Studies in Mycology No. 21, Centraalbureau voor Schimmelcultures, Baarn, 244 pp. ISSN 0166-0616. Price Dfl. 70,—

The genus *Pythium* is one of the widespread genera of fungi, the species of which can be found all over the world on diseased or decayed plant material as well as in soil and in water. New species are continuously described. A revision of the genus from time to time is therefore necessary.

The new monograph by Mrs Van der Plaats will be heartily welcomed by everyone working with *Pythium* spp. The great advantage of this book is that a key for identification, descriptions of the species and data about occurrence and pathogenicity as well as a comprehensive literature list are brought together in one book. Up to now at least three publications had to be consulted to get sufficient information about a certain species.

The monograph starts with short chapters on culturing *Pythium* species, morphology and terminology, ecology, pathogenicity and microbial interactions. After a description of the genus *Pythium* follows the key to the species. As far as one is able to judge a key after using it for a short time, it seems that one who has some experience with this genus, can identify the species without too much troubles.

The main part of the monograph consists of the descriptions of the species. Eighty-five species are recognized and described in alphabetical order, and two highly specialized cellulolytic species are treated in an appendix. The descriptions are the result of a thorough study of many isolates, obtained from other investigators and institutes or isolated by the author. Where living material was available, the descriptions were made by the author, if possible based on the type cultures. Where no cultures were available the original description is followed. All species are illustrated by line drawings, often by the author herself; in other cases they are reproduced or redrawn from the original descriptions. A few light micrographs and scanning electron micrographs are added. For each species the taxonomic relation to other species is discussed and a compilation of literature data on occurrence and pathogenicity is given. The list of references contains 1133 publications.

A last chapter is devoted to doubtful and excluded species, altogether sixty five taxa, many of which are incompletely described.

I think that the publication of this monograph is a dignified conclusion of many years dedicated to the study of the Oomycetes. And I am sure that this book will be a valuable completion for all those being engaged in the study of *Pythium* species.

Ida Blok

Book review

J. Dekker and S.G. Georgopoulos (Eds), 1982. Fungicide resistance in crop protection. Pudoc, Wageningen. 265 pages, 51 tables, 42 figures, index, limp binding. ISBN 90-220-0797-7. Price Dfl. 75.—

In fungal plant pathogens, the development of resistance to fungicides used for crop protection is a fairly recent phenomenon, associated with the increasing use of systemic fungicides. Circumstantial evidence, however, has been obtained that fungi are able to develop resistance to potentially all kinds of fungicides, whether systemic or not, but in particular to those that act as specific-site inhibitors. This phenomenon is not only of academic interest, but knowledge about it is also of fundamental importance in devising new strategies to cope with the failures of chemical disease control.

Concern about the large-scale development of fungicide resistance was the principal motive to organize an international post-graduate course on this topic at Wageningen in 1980 and 1981. This course was organized by the Foundation of Post-graduate Studies of the Agricultural University at Wageningen. The book, which is based on the course lectures, is intended to make the information available to a broader public. It has been written and edited by specialists in the field of fungicide research.

The book is composed of 22 relatively short and easily readable chapters. A few introductory chapters deal with the importance and problems of chemical control of fungal plant diseases and the socio-economic impacts of fungicide resistance. Next, methods for detection and measurement of fungicide resistance are treated, as well as mechanisms of fungicidal action, genetical and biochemical background of fungicide resistance, and cross-resistance. This is followed by chapters that enlarge on resistance to certain classes of compounds, viz. benzimidazoles, ergosterol-biosynthesis inhibitors, dicarboximides and acylalanines.

Other chapters discuss the factors that determine the dynamics of a resistant pathogen population in the field or glasshouse. The possible importance of a resistant nonpathogenic antagonistic microflora is recognized. Models are presented to estimate the risk of a build-up of fungicide resistance, and strategies are outlined to avoid or delay resistance problems in practice.

The final chapters present five selected case studies on the development of fungicide resistance in economically important plant pathogens: *Cercospora beticola* (sugar-beet), *Venturia* spp. (pome fruits) and *Monilinia* spp. (stone fruits), *Pyricularia oryzae* (rice), powdery mildews (barley and cucumber), and *Penicillium* spp. (citrus fruits).

The book is up-to-date and covers the topic logically and extensively. It suffers, however, from some overlap between chapters, which may be difficult to avoid with many authors contributing. I expect that this book will be very useful to all who, in their profession, deal with fungicides and fungicide resistance, such as researchers, manufacturers, advisers and farmers.

J. van den Heuvel