Book Review

G. F. Pegg and B. L. Brady

Verticillium Wilts
CABI Publishing, Wallingford, UK, 2002, vii + 552 pp.
ISBN 0 85199 529 2. Price £ 95 or US$ 175.
(The book is deposited in the library of the Society)

Verticillium species are well known as significant vascular pathogens of economic importance. This book presents an extensive review dealing in detail with four species of *Verticillium* of the section *Nigrescentia* (*V. dahliae, V. albo-atrum, V. nigrescens* and *V. tricorpus*), which are pathogenic to trees and herbs. Other similar species (*V. nubilum* and *V. theobromae*) are also treated.

The monograph consists of 12 sections, besides a bibliography and an index.

In "Introduction", the history of the study of pathogenic verticillia is treated. For many years, scientists failed to recognise *V. dahliae* as a valid species and considered it a form of *V. albo-atrum*. This caused a big problem for the authors of this book. They stated: "Where the original author clearly indicated the microsclerotial form, it has been referred to as *V. dahliae* sensu Kleb."

In the section "Taxonomy", the authors document the development in this field since the description of the basic species (*V. albo-atrum* and *V. dahliae*) and confusions with their recognition, as well as experiments with antigens carried out with the aim of resolving the question of species separation. In "Morphogenesis and morphology" the authors comment results of studies of cell wall composition, cytoplasm, hyphae, conidiophores, conidia and resting structures. In the section *Nigrescentia*, the formation of dark resting mycelium, dark microsclerotia or chlamydospores is a key morphological and taxonomic character. It is therefore a pity that neither a picture of these structures nor an identification key is given. The use of molecular methods in attempt to distinguish between species, strains and host forms is analysed in the section "Cytology and genetics".

The section "Aetiology" is concerned with all basic phases of the life cycles of these plant pathogens: survival, germination, infection, colonisation, transmission and dispersal including inoculum density. In the section "Ecology", closely connected with the previous one, interactions of verticillia with nematodes and vascular plants, antagonisms between verticillia and other fungi or bacteria, and effects of different factors on survival and disease are discussed. Also effects of crop rotation, temperature, soil type etc. are mentioned. The role of individual basic factors (nutrition, atmospheric gases, water potential, pH, temperature, light) in the biology of *Verticillium* spp., and results of metabolism studies are discussed in the section "Physiology and Metabolism".

Important themes dealing with vascular colonisation, symptoms found in hosts, the role of toxins and other effects are commented in the section "Pathogenesis". Different aspects of resistance to *Verticillium* spp. are discussed in the section "Resistance". The section "Control" is very comprehensive. It deals with physical and chemical methods, biological control, integrated control, legislation and quarantine, and breeding for resistance. In the section "Hosts", a very interesting extensive list of *Verticillium* hosts belonging to 75 different families is given. Many references are cited here.

The section "Techniques and Methodology" present a useful compendium of methods and techniques used in wilt pathology.

A shortcoming of the book is the use of some obsolete fungal names, e.g. *Penicillium patulum, P. notatum, P. vermiculatum, Gliocladium virens, Cephalosporium.*

Nevertheless, this monograph presents the most comprehensive review of the pathogenic verticillia since the genus was erected. The bibliography is very extensive, filling one-third of

the book, and is complete up to December 2000. The compendium summarises information on *Verticillium* species causing wilts and will thus be useful to researchers in plant pathology and applied mycology as well as to teachers.

Alena Kubátová