

Book review

H. HARTLEB, R. HEITEFUSS, H. H. HOPPE

Resistance of Crop Plants against Fungi

Gustav Fischer Verlag, Jena, 1997. 544 pages. ISBN 3-437-35338-1. Price 189,- DM.

Interactions between plants and fungi are a very complicated phenomenon which can be considered at different levels of biological organisation (molecular, physiological, cytological, anatomical, individual, population, communities). During the last two decades there is a considerably increasing interest in research in this area because of its theoretical and practical importance. Only strongly interdisciplinary research may lead to new substantial knowledge. This approach is broadly and exactly analysed in the reviewed book.

Authors of international reputation have participated in the preparation of various chapters of this book under the guidance of three editors, well-known German plant pathologists. The book contents are trying to follow a general scheme, from basic and theoretical to practical aspects of the resistance of plants against fungi. This viewpoint is used for the division of book into four main parts.

The book starts with an explanation of general principles of host-parasite interactions. In the first part, a basic explanation of fungal mechanisms of recognition and attack of plants is given. Enzyme secretion and the role of toxins in pathogenesis are broadly discussed.

In the second part, information on mechanisms of resistance is summarised. This very comprehensive part is divided into six chapters according to different resistance mechanisms (e.g. preformed structural and chemical barriers, cell wall modifications, hypersensitive reaction, elicitors and suppressors, phytoalexins, molecular and biochemical aspects of host-pathogen interactions).

The third part deals with special types of resistance and their modification. Durable resistance, adult plants resistance, induced resistance, abiotic and biotic impacts on resistance are discussed.

The final and the most extensive part deals with epidemiological aspects and strategies of utilizing resistant cultivars. This part is divided into seven chapters dealing with the influence of resistance on disease epidemics, gene management, host resistance diversity, virulence analysis of host pathogen populations, resistance assessment, utilisation of resistant cultivars. In the last and very valuable chapter recent relevant literature on sources of resistance in most important crop plants is listed. At the end of the book, is a very well elaborated index of organisms and subjects.

The topic, concept and contents of the book can be considered as an extraordinary interesting, comprehensive and up-to-date review of recent progress in the area of crop plant resistance to pathogenic fungi. Each chapter is followed by the most recent references. The text is enriched with a lot of very clear tables, figures and graphs. The reviewed book could be an important source of information for plant pathologists, mycologists, geneticists, plant breeders and all those interested in the current progress in host-parasite interactions research.

Aleš Lebeda

Czech Mycology, published by the Czech Scientific Society for Mycology. Graphic design by B. Bednář, PISCES. Typeset by T_EX. Printed by Čihák Press, Praha 10. Distributed by the Czech Scientific Society for Mycology, P.O.Box 106, 111 21 Praha 1, and Kubon & Sagner, P.O.Box 340108, 80328 München, Germany. Annual subscription: Vol. 50, 1997-8 (4 issues), US \$ 86,-, DM 136,-

Podávání novinových zásilek povoleno Ředitelstvím pošt Praha čj. NP 105/1994 ze dne 4. 2. 1994.