

Book Review

S. E. LINDOW, E. I. HECHT-POINAR AND V. J. ELLIOTT (Eds.)

Phyllosphere microbiology

American Phytopathological Society Press, St. Paul, Minnesota, 2002, xii + 395 p.

ISBN 0-089054-286-4. Price US\$ 69.

Very impressive cover photo of the leaf surface of *Phaseolus* invites readers.

The book is based on lectures given at the 7th International Symposium on the Microbiology of Aerial Plant Surfaces held at the University of California, Berkeley, in August 2000. The contributions cover many aspects of the phyllosphere study, connect bacteriology, mycology, ecology, plant pathology, molecular biology, population biology and aerobiology.

The book is divided to six parts: The physical and chemical environment of plant surfaces (3 chapters), Interactions between epiphytes and their hosts (6), Interactions among microbes on plant surfaces (5), Plant surface microbes: Agricultural practices and food quality (3), Modelling of interactions and movement of microbes on plant surfaces (5), and Contributions of phyllosphere microbiology to science and agriculture (1).

The first part is dealing especially with effect of leaf surface waxes and UV radiation on colonization by microorganisms and responses of microbial communities to these stress factors. Very interesting is chapter on leaf surface topography made by atomic force microscopy.

Part II is focused on interactions between epiphytes and hosts, mainly on examples of bacteria and yeasts.

Part III covers interactions among phylloplane microbes alone. One provides information on biofilms on leaf surfaces, which are sites of high bacterial density. Another theme of this part is defenses of marine seaweeds against bacterial colonization. For mycologists could be very interesting the chapter of Richard R. Bélanger and Tyler J. Avis on ecological processes and interactions in phyllosphere fungi. Authors treated here the main life strategies of fungi (competition, parasitism and antibiosis) with several examples. Other chapters are dealing with horizontal gene pool in bacterial colonization in the phyllosphere and the bacterial genus *Xanthomonas*, which is encountered in phylloplane either as pathogen, or as saprotroph.

Part IV has close affinity to agriculture and food safety. Emphasis is placed on biological control of fire blight, disease of pear and apple caused by *Erwinia amylovora*. Another interesting chapter presents sources of human pathogens (e.g. *Listeria*, *Escherichia coli* and *Salmonella*) on plants. Attention is also given to bacterial blight of rice caused *Xanthomonas oryzae*.

In part V, for mycologists is very useful chapter by John C. Zak on fungal community structure and function on leaf surface and chapter by Donald E. Aylor on aerobiology of fungi and relation to capture and release by plants.

Sixth part gives an overview on advances in phyllosphere microbiology during the last fifty years, since the first publications on phyllosphere of Last (1955) and Ruinen (1956). It is very valuable for all interested in this field.

Very useful is index of names and terms at the end of this book.

I have only little criticism to this work. It is dealing with some orthographical errors, e.g. *Erispihe graminis* (p. 11, instead of *Erysiphe*), *Monolinia fructicola* and *Oidendron* (p. 30, instead of *Monilinia*, *Oidiodendron*), and *Deschslera* (p. 306, instead of *Drechslera*).

In conclusion, I consider this book of a great value not only for specialists in the phyllosphere but also for other microbiologists, mycologists, ecologists and plant pathologists.

Alena Kubátová