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BOOK REVIEW

MOORE, R. (ed.): *VEGETATIVE COMPATIBILITY RESPONSES IN PLANTS*. — Baylor University Press, Waco, Texas 1983. 163 pp.

This book represents the proceedings of a symposium on Vegetative Compatibility Responses in Plants held at Penn. State University in August, 1982. This symposium was supported by the Developmental and Structural Section of the Botanical Society of America and the Developmental Biology Panel of the National Science Foundation. Eleven contributors have striven to provide comprehensive reviews of their topics. The purpose of this book is to summarize the knowledge of the different compatibility systems characteristic of higher plants. The most intensively studied systems involving vegetative compatibility are the interactions that occur between plant pathogens and their hosts. Less well studied, are systems involving vegetative compatibility responses in plants; they include the interactions between parasitic vascular plants and their hosts, mycorrhizal associations, especially endomycorrhizal fungi, and graft development. The first two chapters deal with the problems of tissue compatibility among the roots of forest trees and the haustoria of parasitic angiosperms. The following two chapters describe the structural and physiological responses of plant cells to infection. It is evident that root parasites offer an excellent opportunity for studies on plant cell interactions. Also the structural interaction of plants and their parasites is an important aspect of general compatibility/incompatibility phenomena. Although the necrogenic resistance response is apparently the normal immune response of plants to attempted invasion by pathogens, it may also cause undesirable effects in various plant interactions. Detailed knowledge of plant immune systems and their different functions is essential for dealing with various incompatibility phenomena in plant culture. The structural and physiological aspects of graft formation are also included in chapters V and VI. The seventh chapter deals with the compatibility responses in the establishment of ecto- and endomycorrhizae. The response of epidermal cells and the cell surface in plant recognition phenomena are described in the last two chapters. Understanding the cell-cell interactions may lead to procedures for minimizing crop losses through disease and for breaching incompatibility barriers to allow breeding of more productive hybrids. The ultimate understanding will require a thorough understanding of the structure and function of both the plant plasma membrane and the cell wall. The book is well printed and is provided with a rather small subject index and a list of 69 references. I join the editor's hope that "the book will not only be information, but will also stimulate thinking as well as research on vegetative compatibility responses in plants".

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