Insect-Plant Interactions and Induced Plant Defence
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E-Book  978-0-470-51568-6  May 2008  $188.99
Hardcover  978-0-471-98815-1  September 1999  $235.00
O-Book  978-0-470-51567-9  September 2007  Available on Wiley Online Library

DESCRIPTION

Insect-Plant Interactions and Induced Plant Defence

Chair: John A. Pickett, 1999

This book examines the sophisticated mechanisms that plants use to defend themselves against attack by insects and pathogens, focusing on the networks of plant signalling pathways that underlie these defences. In response to herbivory, plants release a complex blend of as many as 100 volatile chemicals, known as semiochemicals (‘sign chemicals’). These act as an airborne SOS signal, revealing the presence of the herbivore to the predators and parasitoids that are its natural enemies. Plants also have endogenous defence mechanisms that can be induced in response to pathogens, and separate chapters deal with systemic acquired resistance, phytoalexins, and the interacting pathways in pathogen and pest resistance. The book discusses underlying biochemical mechanisms by which plant stress leads to the biosynthesis of chemical signals from pools of secondary metabolite precursors, or even from the primary metabolism source. Finally, consideration is given to the possibilities for exploiting these signalling pathways by plant molecular genetics. The use of plant signals and their analogues to switch on defence pathways in crop plants is covered in depth. Bringing together contributions from entomologists, chemical ecologists, molecular biologists and plant physiologists this book is truly interdisciplinary, and will be essential reading for anyone with an interest in agricultural pest control.
ABOUT THE AUTHOR

Derek J. Chadwick and Jamie A. Goode are editors for Insect-Plant Interactions and Induced Plant Defence and other scientific titles.

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