

BOOK REVIEWS

Abiotic Stress Tolerance in Plants: towards the improvement of global environment and food. Edited by K. Rai and T. Takabe. Dordrecht, The Netherlands: Springer (2006), pp. 267. £77.00. ISBN 10-1-4020-4388-0. doi:10.1017/S001447970621490X

This textbook aims to present a state of the art description of the physiological, biochemical and molecular status of the understanding of abiotic stress in plants and the application of biotechnology to crop and environmental improvement. The text, which is a collection of monograph papers produced by experts in the field, mainly from Asia, achieves some of its objectives but is left lacking in others. For salt stress and to a lesser extent osmotic stress and photo-induced stress there are several papers that cover the topic in good depth and with plenty of cross-references. For other stresses, notably temperature (both cold and heat), there is little in this textbook to advance the knowledge base. The book concentrates its examples on the application of stress gene modifications to crop improvement and forestry, but it is difficult to see where the references to the 'improvement of global environment' are in the text.

Whilst the book is divided into themes (signal transduction, temperature stress, oxidative stress, phytoremediation, osmotic stresses, ion homeostasis, nutrition, structural responses and developments in biotechnology), there is little attempt to overview the individual papers together under each theme. Similarly the whole text lacks an overview to put the book into perspective.

Given the comments above and the price of the text, it is clear that it is unlikely to become an undergraduate text, but could serve postgraduates, academics and researchers alike as a reference to the current state of the art of (some of) the research in the field of abiotic stress of plants.

Mick Fuller

Plant Abiotic Stress. Edited by M. A. Jenks and P. M. Hasegawa. Oxford: Blackwell Publishing (2005), pp. 270, £99.95. ISBN 1-4051-2238-2. doi:10.1017/S0014479706224906

This valuable addition to the Biological Sciences Series focuses on the most interesting current stress research. This precludes a comprehensive account. However, each chapter outlines the wider context, often with admirable lucidity. Researchers will use this book to sharpen their awareness of developments in areas of stress related to their own. Other readers, including more advanced students, will find it can give them a deep understanding. Much of the content is molecular, but the chapters are well organized and well written and non-molecular readers should be able to get much from them. Several chapters have a non-molecular emphasis, e.g. on soil pH and the plant's response to consequent nutritional problems. The chapter on plant responses to herbicides reminds the reader that stresses can be anthropogenic. Many chapters address molecular responses to a single category of stress, but there is also an important chapter on integration of stress signaling. A chapter on the cuticle exemplifies what is best in the field: the cuticle is important in a number of stresses and the account links information from the structural and physiological to the subcellular and genetic. I have only one criticism of the book: while the use of genetic resources was not ignored, as, for example, evidence from mutant lines figured in many chapters, quantitative locus analysis was ignored. This is surprising, given that the response to stress is quantitative and explicitly depends on contributions from many genes. However, overall, I strongly recommend this book.

Roger S. Pearce

Plant Hormone Signaling: Annual Plant Reviews, Volume 24. Edited by P. Hedden and S. G. Thomas. Oxford: Blackwell Publishing (2006), pp. 348, £110.00. ISBN-13: 978-14051-3887-1. doi:10.1017/S0014479706234902

Huge advances have been made in recent years in the understanding of the molecular mechanisms of plant hormone signaling. This textbook has gathered together up-to-date monographs covering all the known plant