BOOK REVIEWS

DOI:10/1017/S0014479702210297


This book, developed and published by the American Society of Plant Physiologists and containing more than 1000 pages, is one of the most comprehensive and knowledgeable texts on plant biochemistry and molecular biology to have emerged in recent years. Edited by three eminent scientists and with chapter contributions from more than 60 authors well known in their scientific fields, the book is an absolute must for undergraduates, post-graduates and experienced researchers and teachers. Superbly illustrated and with an accompanying CD ROM containing figures and diagrams from the book, the price of around £75 for a soft back version is extremely good value. The contents are well laid out, the illustrations and diagrams clear and informative, and the themes covered are highly relevant to 21st century plant biology. The book is not really geared towards crop husbandry in warmer climates and should be considered as a text covering the basic elements of cell functionality rather than as an applied text that might benefit directly those involved more in crop husbandry.

Howard Davies

DOI:10/1017/S0014479702220293


Both the first and second editions of this work were acclaimed as essential reference works for all plant pathologists from graduate to senior researcher. At £90, however, the hardback second edition represents a considerable investment for young or impecunious pathologists. Now in paperback at a third of the price, it is a terrific bargain! Although three years old, the edition is not out of date for it concentrates on ‘traditional’ plant pathology, rather than rapidly evolving molecular pathology, and consolidates a vast literature. Details on thousands of pathogens and pests are provided with extensive references to all aspects of their pathology and biology in general. A typical entry gives the features that provide taxonomic definition of the pathogen along with the aetiology, epidemiology and control of the disease it causes. An unusual but welcome feature is thumbnail entries for distinguished but deceased pathologists. As with the entries for individual pathogens, such entries age only slowly with time. Not so some others; the entry on disease resistance, described correctly as ‘the single most important disease measure’, while as comprehensive as space allows, already looks dated in light of recent developments in molecular biology – no leucine-rich repeats or resistance gene analogues! However, at the level at which this book is surely intended, it is an excellent and scholarly production that should certainly find a regular place on the desks, rather than bookshelves of all those interested in plant diseases, their causes and control.

J. M. Duncan
The first part of this book describes aspects of weeds and weed ecology, including the characteristics of weeds and the nature of the losses they cause. Overviews of the major agricultural production systems follow, including shifting cultivation, tree crops and mixed cropping, with respect to the most important weeds that occur and the weed control methods used. Most of the book is devoted to weed management in the different crops: cereals, tubers, fruits, legumes and vegetables, plantation and fibre crops. Chapters are included on the control of weeds in pastures (by L. ’t Mannetje) and aquatic weed management (by A. H. Pieterse). Appendices list the species names of the plants and organisms mentioned in the text, a range of biological control agents and details on the major herbicides. The text includes more than 630 references, is well indexed, and gives a good overview of the topics. The inclusion of recent references on some subjects would have improved the treatment of the topics but this does not detract unduly from the text. The book is recommended as a valuable review of this wide subject on which there are few other texts available. It will be of considerable use to students, consultants and research staff for some time to come.

D. E. Johnson

As the editors of this book rightly point out, the requirements for modern agrochemicals seem almost impossible to satisfy in the widely differing terms of bio-safety and target specificity desires of farmers and consumers. Many of the chapters dealing with novel chemistry and structure-activity relationships are specific to particular discovery routes. Whilst this is inevitable, it does mean that the book provides some reasonably in-depth snapshots but cannot cover the wider areas of agrochemical discovery. The chapters on natural products gives an indication that we are only just beginning to explore the vast array of potentially useful bio-active products from plants and microorganisms. This diversity is further enhanced through biotechnological tools to enhance the production of novel mutations. Biotechnology is also opening up many new doors to enhance crop protection through genetic modification and increase constitutive or inducible resistance to pests and diseases. The understanding of the genes involved in Systemic Acquired Resistance (SAR) in Arabidopsis (Chapter 11) is a key to many second and third generation genetically modified (GM) crop developments. This will also include new opportunities for nutritionally-enhanced traits (Chapter 14). The chapters (15-20) dealing with combinatorial chemistry highlight the technological breakthroughs that now enable rapid synthesis of novel bio-active molecules. We can expect several generations of innovative new products and approaches in the near future.

A. N. E. Birch

The Editors believe this will be an excellent reference book for scientists, graduate students, extension workers and producers. Thirteen of the 15 chapters present a detailed overview of the latest genetic technology that will undoubtedly be useful to scientists and graduate students but will be beyond the comprehension of most extension workers and producers. This is not an introduction to the subject and readers will require a good basic knowledge of genetics in order to appreciate the
book. For example, there is no glossary of the terminology used, which implies that readers should already be familiar with the subjects discussed.

Most of the contributors are academics from universities and national research institutes around the world, and two are from USA corporations. One chapter covers the development of commercial Bt cotton and breeding for insect pest resistance, but otherwise there is no general presentation of the commercial benefits likely to be attained from the emerging technologies. An overview of the commercial prospects and predicted benefits, with arguments for and against the technologies, would have put many of the technical chapters into perspective and made the book more attractive to the less technically minded.

J. S. Watson

DOI:10/1017/S0014479702260299


This book arose primarily from postgraduate courses and research conducted by the author and is driven by two issues: patenting of life forms via biotechnology, and the global crisis of natural and agricultural biodiversity. The book is organized into seven chapters and aims to connect three theoretical domains: expert systems, global governance and new social movements. Chapter one, ‘Genetic Patenting: Knowledge, Global Governance and the Anti-GM Movement’ attempts to ‘set the scene’. Subsequent chapters focus on intellectual property and patenting of genes, shifts in global governance, counter expert networks in Non-Governmental Organizations (NGO) and the role of social movements in global civil society. Chapter seven ‘returns to the core theoretical concern of the book. Global hegemonic projects play through the institutions of global governance’.

From a personal perspective I found the book difficult to read and to place in context. The perspective is very theoretical but the issues are highly practical and the challenges formidable. Clearly, to advance the genetically modified organism (GMO) debate we require a functional, political, social, ethical and scientific framework. This book touches on some of these issues but does not in my view provide any new, plausible insights.

Wayne Powell

Readers may be interested to know about the following publications received but not reviewed because of their limited relevance to the majority of readers of Experimental Agriculture.


