An Introduction to Plant Breeding. By J. Brown and P. Caligari. Oxford: Blackwell Publishing (2008), pp. 209, £39.50 (paperback). ISBN 978-1-4051-33449-9. doi:10.1017/S0014479708006807

The merits of the book are that it is short and well written with 'think questions' at the end of each chapter. A newcomer to the subject can quickly get a feel for the practical issues faced by plant breeders and the underlying scientific principles upon which decisions are based. Thus breeding objectives, breeding schemes, modern techniques and practical considerations are considered and related to the reproductive biology of crop species and types of cultivars that are produced. Selection theory and practice are dealt with in detail. The dilemma faced in writing books on plant breeding is what genetic knowledge and expertise to assume in the readership. The authors have opted for two chapters in the centre of the book, one on genetics and plant breeding which covers basic qualitative genetics and quantitative genetics, and the other on predictions which covers heritability and diallel crossing designs. One can argue over whether or not appendices would provide a better solution by not interrupting the main flow of the text. A short book cannot do full justice to a subject and hence future editions would benefit from suggestions for further reading and key references, particularly for data presented in the text.

John Bradshaw

Breeding Major Food Staples. Edited by M. S. Lang and P. M. Priyadarshan. Oxford: Blackwell Publishing (2007), pp. 437, £84.99. ISBN 978-0-8138-1835-1. doi:10.1017/S0014479708006819

Whilst there is much useful information within the 13 chapters of this book, it does not read as a cohesive whole and I found it hard to identify its most suitable market. For those interested in specific crops, there are many more detailed crop-specific titles available whilst there is, perhaps, too much detail for plant breeding students. This is a shame as many of the individual chapters are sound and thorough pieces of work. I particularly enjoyed the chapter on maize breeding, as it is a good review of its development in North America. The first four chapters provide a reasonable overview of the techniques and issues in contemporary plant breeding, although I found the chapter on bioinformatics rather constrained. Key resources are described but, given the authors' definition of 'Applied Bioinformatics', I was hoping to see some ideas on the integration of genomic data with the phenotypic information that abounds in some plant breeding programmes and thereby improve breeding efficiency. As much of the debate on issues such as the use of transgenes has been covered in the opening chapters, the frequent addition of sections on transgenes in the individual crop chapters was tedious and served no useful purpose for those crops where transgenes had not been deployed in cultivars. The book really needed a concluding chapter that compared and contrasted the issues raised in the preceding nine chapters on individual crops. In conclusion, I found much of interest in this book but felt that better editing could have led to a radical improvement.

W. T. B. Thomas

Citrus Genetics, Breeding and Biotechnology. Edited by I. A. Khan. Wallingford, UK: CAB International (2007), pp. 380, £80.00. ISBN-13: 978-0-85199-019-4. doi:10.1017/S0014479708006820

Fresh *Citrus* fruit and processed products are major household items worldwide. Most well-known cultivars are clones that have arisen by chance, and a century of effort in conventional plant breeding has added few new varieties, or even characteristics. This book, whose authors represent the main citrus-growing regions of the world, explains why, and outlines new approaches, which may help towards success in future.

The first two chapters introduce the problems of *Citrus* breeding: apomoxis (nucellar embryony, explained in chapter 5) is widespread in the genus, and while production of genetically uniform rootstocks relies on it, identifying zygotic embryos from cross-pollination can be a problem, compounded by a long juvenile period and the space required for testing trees. Further, consumers prefer seedless fruit, mostly achieved through triploidy (chapters 6–8). Chapters 3 and 4 cover taxonomy and germplasm resources, while work particularly for disease resistance, through individual genes and transformed genomes (for example, the citrus tristeza viral coat protein gene) is described in chapters 13 and 14. *In vitro* shoot tip grafting is useful for producing disease-free material, and for regeneration of plants after cellular manipulation (17). Other techniques covered include