

The chapters on technological issues summarize the current state of the GM art and explain the particular issues that need to be solved in order to achieve the holy grail of stacking particular transgenes in stable, single copies at defined positions in the genomes of elite varieties without generating undesirable side effects. The chapters on individual crops have a generic interest but will obviously be more useful to those working with such species. The choice of crops is essentially mainstream North America and countries of similar climates, so there is almost no coverage of tropical species, apart from rice.

The book finishes with a very brief but fairly balanced discussion of risks and benefits of the technologies. The brevity was disappointing given the major international concerns and political sensitivities over transgenics. Also, for a book published in 2004, it was a pity that the references contained no publications post-2002. Perhaps this indicates a long gestation period. Overall this is a very readable, informative and fairly comprehensive book, that fills an important niche in the market; it will make it a valuable addition to the laboratory library.

Mike Kearsay

*Introgression from Genetically Modified Plants into Wild Relatives*. Edited by H. C. M. den Nijs, D. Bartsch and J. Sweet. Wallingford: CABI Publishing (2004), pp. 403, £75.00. ISBN 0-85199-816-X. doi:10.1017/S0014479705262816

In January 2000, a project funded by the European Science Foundation, the Assessment of the Impacts of Genetically Modified Plants, held the first of 14 workshops bringing together experts from Europe and across the World. These meetings tackled all aspects of this contentious topic, deliberately held away from open scrutiny to encourage free debate. As a sequel to that project, an open conference was held in Amsterdam in January 2003, bringing together the perspectives and the latest research results of many of the key research groups. The resulting book of 27 chapters is presented in four sections: Hybridization in Crop-Wild Plant Complexes; Gene Flow-Introgression and Adoption of Genes; Impact and Consequences of Novel Traits; and Monitoring-Field Studies, Modelling and Scientific Standards for Regulation. The chapters include thoughtful reviews, straightforward reports on current research, and a helpful contribution on the details of the European Union requirements to monitor for environmental effects of the introduction of GMOs, particularly as they relate to introgression. Reflecting the recent focus of research, about half the book is occupied with studies of introgression between conventional crops and their cross-compatible wild relatives. An insight into the extensive nature of such introgression is given for twelve different crops. Further highlights of the book include a review of the complexities of the impact of insect-resistant GM crops, including their documented environmental advantages, and a reflective contribution on modelling. This book is essential reading for scientists, regulators and educators with an interest in the interaction of GM crops with their environment.

Gavin Ramsay

*Environmental Risk Assessment of Genetically Modified Organisms. Vol. 1: A Case study of Bt Maize in Kenya*. Edited by A. Hilbeck and D. A. Andow. Wallingford, UK: CABI Publishing (2004), pp. 281, £60.00. ISBN 0-85199-861-5. doi:10.1017/S0014479705272812

The Cartagena Protocol on Biosafety calls for risk assessments to be made before the introduction of GMOs. This volume is the outcome of a stakeholder workshop considering Bt maize for control of stem-boring caterpillar in Kenya under the OILB project '*Development of international scientific biosafety guidelines of transgenic plants*'. It describes what would have to be done to provide an assessment for the germplasm developed under the international project '*Insect resistant maize for Africa*' as a model for other GMO introductions into developing countries. It covers comprehensively transgene design and expression studies; genotype and phenotype characterization; biodiversity and non-target impacts; gene flow and its consequences and the risks of resistance development. Each transformation event in each genetic background is a unique event requiring a detailed 'case by case' assessment of risks. As in many cases, the germplasm under consideration for introduction is not adequately characterized (or the information is not publicly available) for transgene design, genotype characteristics, gene transmission studies or in any other major way. Worse, it does not provide a 'high dose' strategy for the control of major lowland stem-borer, *Buseola fusca*. Bt genes from hybrids or open-pollinated varieties would rapidly spread to Kenyan landraces with unknown impacts on pests or beneficial insects. Kenyan maize growers give stem-borer a relatively low ranking as a problem. However, the 45% of Kenyan dietary calories which come from maize and the reduction of >10% in maize yields annually caused by stem-borers, means that Bt maize

remains an option worth pursuing and it is a pity that the case study does not draw more on the experience of South Africa in commercializing Bt maize.

Derek Russell

*Olive Propagation Manual*. By A. Fabbri, G. Bartoloni, M. Lambardi and S. G. Kailis. Collingwood, Australia: CSIRO Publishing (2004), pp. 139, £25.50. ISBN 0-643-06676-4. doi:10.1017/S0014479705282819

This book should be useful to anyone involved with olive propagation, as it appears to include all the information necessary to set up and run an olive nursery. There are chapters on cuttings, on grafting, and on *in vitro* propagation, and also on the construction and organisation of a nursery. Seed germination, to provide rootstocks for grafting is also covered. The expected rooting success for over 400 named clones is given. There are numerous references, including many to papers in Italian. There is a list of 93 germplasm collections in 26 countries, though no indication of how comprehensive the collections are.

Apart from an introductory chapter on flower and fruit biology, the book covers little beyond the practical details of vegetative propagation methods. Although the notes on the cover mention varietal selection for early bearing, disease resistance, etc., there is no discussion of these subjects. Self-incompatibility, and the need for careful choice of compatible clones, is mentioned, but there is no information on which clones are compatible, apart from a graph of flowering dates from some Italian varieties.

Hereward Corley

*Saving Seeds: The Economics of Conserving Crop Genetic Resources Ex Situ in the Future Harvest Centres of the CGIAR*. By B. Koo, P. G. Pardey and B. D. Wright. Wallingford, UK: CABI Publishing (2004), pp. 232, £49.95. ISBN 0-85199-859-3. doi:10.1017/S0014479705292815

This book is a fascinating overview of the costs, current and predicted, for the maintenance and distribution of the genetic resources collections of the research centres of the Consultative Group on International Agricultural Research (CGIAR). The *raison d'être* for the work is the provision of estimates for an endowment fund to support the gene banks in perpetuity based on recent expenditures, inflation scenarios and other variables. Five of the CGIAR centres (CIMMYT, ICARDA, ICRISAT, IRRI and CIAT) submitted in depth costs for their germplasm conservation programmes for analysis. The details of the five chapters highlight the differences in costs based on crop reproduction requirements (inbreeders, outbreeders and vegetative maintenance), quarantine/plant health, electricity costs and distribution costs. The costs figures were used to extrapolate figures for the other six CGIAR centres conserving crop genetic resources. The majority of germplasm collection costs studied was for seed crops, the CIAT cassava collection being the only significant vegetatively propagated crop. On this basis the omission of the CIP vegetatively propagated collections from the in-depth review was surprising. The final chapter on policy and management implications highlights the cost differentials between centres and outlines a number of policy considerations in relation to an endowment fund, namely the consolidation of collections, charges for germplasm distribution and the use of molecular characterization to enhance conservation and utilisation. Politicians, funding agencies and gene bank scientists will view quite differently the concluding remark that 'to carry the CG conservation effort into the far distant future will not be an exorbitantly costly undertaking'.

Dave Astley

Books currently under review:

*Seed Fate: Predation and Seedling Establishment*. Edited by P.-M. Forget, J. E. Lambert and S. B. Vander Wall. Wallingford, UK: CABI Publishing (2004), pp. 448, £75.00. ISBN 0-85199-806-2.

*Environmental Impacts of Sugar Production*. By O. Cheesman. Wallingford, UK: CABI Publishing (2004), pp. 272, £55.00. ISBN 0-85199-981-6.

*Conflict, Social Capital and Managing Natural Resources: A West African Case Study*. Edited by K. M. Moore. Wallingford, UK: CABI Publishing (2004), pp. 288, £55.00. ISBN 0-85199-948-4.

*Flower Seeds: Biology and Technology*. Edited by M. B. McDonald and F. Y. Kwong. Wallingford, UK: CABI Publishing (2004), pp. 400, £95.00. ISBN 0-85199-906-9.

*Biotechnology of Fruit and Nut Crops*. Edited by R. E. Litz. Wallingford, UK: CABI Publishing (2004) pp. 768, £125.00. ISBN 0-85199-619-1.