

Book Review

Catherine A. Offord and Patricia F. Meagher (eds), *Plant germplasm conservation in Australia: strategies and guidelines for developing, managing and utilizing ex situ collections*. Canberra, ACT: Australian Network for Plant Conservation Inc., AU \$39.95. pp. 204. ISBN 9780975219119

This book gives a comprehensive overview of the important issues and the relevant techniques in the field of plant conservation. Written with a perspective of nature conservation in Australia, it addresses both these issues and techniques, and illustrates them with plenty of beautifully illustrated case studies; these alone would probably justify the publication of this simple and effective book.

Imagine that you are active in the field of conserving plants for nature conservation and wanted to produce a book describing your methodology. You know your field and have good contacts with the scientists who have the necessary knowledge of the details and who could contribute; you have sufficient budget for producing a full colour publication of about 200 pages. Then this book represents as much as you could hope for as the product of your efforts.

The book has a logical structure. It starts with a short introduction, giving the context of the book and a chapter about the 'Options and major considerations for germplasm conservation'. This is followed by a series of technical chapters starting with 'Seed and vegetative material collection', which provides an overview of the considerations required in the planning and the execution of a collection trip. This chapter is followed by chapters with descriptions of the various approaches that can be applied in *ex situ* conservation: 'Seed banking' (with an added chapter on 'Seed germination and dormancy'), 'Tissue culture', 'Cryopreservation' and 'Living plant collections'. All this is supported by a good glossary, a list of key Australian contacts, key references, a short description of the contributors and an index.

The volume is written in a cookbook style, with many checklists and boxed practical highlights ('Allergy note: be aware that certain plants may contain toxins or

allergens ... Long sleeves, gloves and a mask may need to be worn during collection and cleaning of material.'). The information is readily accessible, thanks to its well-structured content, both between and within the chapters. Furthermore, abbreviations are actively avoided, and the language is kept simple. The boxed case studies break the cookbook style and make the book pleasant to read.

Not everywhere the text is totally transparent, and there is room for improvement for the next edition. For example, the section on population sampling, a critical issue in plant collection, is rather unclear. The author states that 'ideally 90–95% of the existing genetic variability found within a population' should be sampled. Why not 'ideally 100%'? This statement is translated immediately into boxed guidelines saying that 30 individuals of an out-breeding species should be sufficient, 59 for inbreeding species and 50 if the breeding system is not known. Why the lesser number of samples in the situation where one is ignorant of the breeding system? The paragraph carrying these numbers is followed by one discussing sampling patterns. The initial guidance is that 'seeds should be collected randomly and evenly throughout the extent of a population'. Randomly or evenly? These are contradictory words. The box in this paragraph, generally giving clear instructions, lists three options: random, stratified (random after dividing into distinct patches) and systematic (using a grid). So the reader is left with the unanswered question: what should be used, and when?

Such a lack of clarity is fortunately rare, leaving the content, as far as this modest reviewer could judge, up to date and complete. The book was clearly written from an Australian nature conservation perspective. If the perspective of crop conservation had also been considered, a few other concepts might have been included, such as the place of crop wild relatives and their special treatment, if any; and the issue of collaboration with crop genebanks. The use of certain concepts, for example 'base' and 'active' collections are non-standard, and where it comes to 'access and benefit sharing', the International Treaty on Plant Genetic Resources for Food and

Agriculture would have to be mentioned. Also the very limited attention given to creating access to the plant collections and their documentation illustrates the difference between the world of nature conservation and that of crop conservation.

Notwithstanding the sorry fact that these two worlds remain rather far apart, the relevance of much of this book to the crop conservation community is striking; most of what is written is both true and relevant for crop conservation. This, combined with the low price and attractiveness of the boxed case studies, makes the

book attractive to anyone active in the field of plant germplasm conservation *sensu lato*.

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