

FOREST GENETIC RESOURCES IN FRANCE

Les Ressources Génétiques Forestières en France. Tome 2: Les Feuillus. [Forest Genetic Resources in France. Part 2: Broadleaves]. **Arbez, M., Lacaze, J.-F. (eds.)**, INRA, Paris and BRG, Paris, 1998, 408 pp., ISBN-BRG 2-908447-11-8, ISBN-INRA-2-7380-0842-9, paperback.

The second part of the report on genetic resources of forest tree species appeared with an eleven-years delay after the first part, dealing with conifers (ARBEZ, M. 1987: Forest Genetic Resources in France. Part 1: Conifers. INRA and BRG, Paris, 236 pp., ISBN 2-85340-979-1). The book is a collective work of 28 authors. It covers 17 economically most important genera of the temperate zone and 8 tropical genera of broad-leaved forest trees.

For each species covered, a brief general characteristics is given, including the taxonomical status, morphological description, ecology, distribution range, silvicultural significance, and wood properties, followed by an inventory of the identified genetic resources. This inventory provides a short synopsis of the conservation units, investigations and practical activities, as well as programs of utilization of these

resources in each of the French institutions which deals with gene conservation (INRA, ONF, CEMAGREF, AFOCEL, CIRAD Forêt etc.). Finally, the access to genetic resources and information is described. A short recapitulation in a tabular form is given for each genus.

Although several genera, which are generally considered important in the European context for their economical or ecological significance, are missing (*Betula*, *Carpinus*, *Malus*, *Pyrus*, *Tilia*), the book provides a good summary of gene conservation activities of native as well as introduced forest tree species in France. It may not only be a source of information on species and activities themselves, but also an inspiration mainly for CEE countries.

Dušan Gömöry (Zvolen, Slovakia)

MOLECULAR BIOLOGY OF WOODY PLANTS

Molecular Biology of Woody Plants, Vol. 2. S. Monah Jain & Subhash C. Minocha (eds.), Kluwer Academic Publishers, Dordrecht, 2000, 516 pp., hardcover, ISBN 0-7923-6241-1.

Recent progress in the areas of plant improvement through genetic engineering, molecular markers used in plant genetic analysis, and plant genomics reflected the objective need to target all those relevant advances also for the improvement of woody plants. Background information on the current status of transgene expression, development, nitrogen metabolism, tissue culture, DNA markers and genome mapping in woody plants is the subject of the Volume 1 of this book title. Following that knowledge provided by available molecular technologies, the Volume 2 highlights specific examples of woody species in which sufficient progress towards the improvement has been made to date.

This volume represents the efforts of 58 contributors, each being an expert in his or her field, and thus each chapter is a mini-review focused on a specific area. The organization of the second volume is similar to the first. The book is divided into three main sections. The substantial part of the volume (15 chapters) is covered by the first section devoted to gene transfer techniques available to modern forest tree breeding, and contains much new information on the subject. Case studies in woody plant transformation show on efficient DNA transfer by means of *Agrobacterium tumefaciens*- and *A. rhizogenes*-mediated gene delivery, particle bombardment or electroporation of protoplasts. Perspectives on genetic transformations are provided for the particular woody species according to research priorities. Broadleaves dominate to investigations, including transgenic *Populus* taxons, *Malus*, *Citrus*, *Actinidia*, *Olea europaea* var. *sativa*, *Elaeis guineensis*,

Hevea brasiliensis, *Acacia*, and also *Rosa* species. Four chapters integrate information on producing transgenic conifers – *Pinus* spp., *Picea* spp., and *Larix* spp.

The second section contains 5 chapters dealing with molecular understanding of mycorrhizas, molecular epidemiology of tree pathogens, insect resistance in fruit and nut tree crops, structural and biochemical aspects of cold hardiness, herbicide tolerance, and cloning of defense related genes against pathogens in forest trees. The volume concludes with the last section that presents the only, indeed very important chapter on research ethics for molecular silviculture. This chapter is a very suitable end to the book.

The selection of topics covered by both volumes was solely the choice of editors, however, the quality and content of each chapter were subjected to peer reviews. The organization of each chapter was left to preference of the authors. The text is rich with details, numerous figures and tables provide clear examples of important ideas. The massive list of references is found at the end of each chapter. Both volumes of the book address a wide array of topics relevant to genetic, biotechnological and environmental interests, and are aimed at molecular biologists, tree physiologists, woody plant breeders and foresters. Thanks to editors and all contributors for this timely and superb book, we now have an accurate and fruitful way to think about the tasks ahead.

Jaroslav Ďurkovič (Zvolen, Slovakia)