

## GENETIC RESPONSE OF FOREST SYSTEMS TO CHANGING ENVIRONMENTAL CONDITIONS

**Genetic response of forest systems to changing environmental conditions.** G. Muller-Starck & R. Schubert (eds.). Forestry Sciences, vol. 70, Kluwer Academic Publishers, Dordrecht, Boston, London, 2001, 363 pages, ISBN 1-4020-0236-X, price 115 USD.

Forest ecosystems and various systems of plantations are increasingly exposed to changing environmental conditions due to industrialisation, rapid population growth and subsequent antropogenic pressure. Changing environmental conditions substantially affect genetic variation and its dynamics in forest systems, infer genetic resources and challenge adaptive abilities.

The reviewed book represents a proceedings of the IUFRO Conference held in 1999 in Freising, Germany under the auspices of the Division 7 (Forest Health) and Division 2 (Physiology and Genetics) and it combined also the initiatives of the previous IUFRO conferences and symposia held in the period 1966–1998 (Vancouver, Beijing and Edinburgh).

The book is divided into four parts. The first part "Verification of response to stress" focuses on the response to stress in terms of case studies which address physiological and genetic characters as well as metric traits. In four papers the authors deal with the response of tree species to stress caused by the air pollution and ozone, and additional two papers deal with the stress caused by the pine weevil and the drought.

The second part "Genetic variation under diverse environmental conditions" presents 9 studies which refer to diversity and geographic variation of various species and site conditions. A variety of bi-parentally

and uniparentally inherited gene markers was used for monitoring of gene diversity and differentiation in natural populations of tree species exposed to different environmental conditions and thus different evolutionary histories. Last paper (H.-R. Gregorius) is aimed at the discussion of the autochthony as operational concept in forestry practice and gene conservation.

Ten papers included in the third part "Genetic resources, reproduction, management" deal with the characterization of genetic resources and it compiles a variety of studies aimed at reproduction process and gene flow.

Four papers included in the fourth part "Tree breeding for uncertain future environments" deal with several breeding programs aimed at forest tree breeding for uncertain climatic future.

In general, although two thirds of papers are of European origin, these proceedings give rather nice review of up-to-date advances in population genetics of forest trees and measuring the environmental impact on genetic systems of forest tree populations. It is the additional volume tracing the progress in the field presented at the IUFRO Symposia and Conferences on forest genetics since 1984.

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