

The objectives of "WHICH DNA MARKER FOR WHICH PURPOSE?"

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Forest geneticists are frequently confronted with practical questions concerning the origin, the genetic variability, or the adaptability of trees, stands, or forest reproductive material. The posers of these questions can be biologists, ecologists, foresters, private forest owners, firms dealing with forest reproductive material, nature conservation organizations, and, of course, the forest geneticists themselves for their basic research. Awareness is growing within these groups that many of these questions can be answered with the help of genetic marker technology. However, the increasing number and variety of genetic markers available for forest tree species make it difficult for the so-called "end-users" of this technology to judge which type of marker is most suitable for the given purpose.

The aim of this compendium is to provide end-users with guidelines for choosing markers that are suitable for the purpose at hand. These guidelines are formulated as contributions by the participants of the research project "*Development, optimisation and validation of molecular tools for assessment of biodiversity in forest trees*" in the European Union DGXII Biotechnology FW IV Research Programme "*Molecular Tools for Biodiversity*", which was completed in 1999. In each of these contributions, the suitability of a particular type or types of DNA marker for a given purpose is either confirmed or, in some cases, critically negated. In most of the contributions, validation of the suitability of the marker is based on the results of actual experiments that were carried out in the framework of the research project.

The compendium begins with an explanation of the concept of DNA marker and the characteristics of the markers developed within the project, followed by a classification of the purposes that are dealt with in the contributions. The contributions are arranged according to purpose in order to comply with the viewpoint of the end-user.