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Foreword

The last 10 years have witnessed considerable progress in molecular biology, trangenesis and genomics, and the assessment of wood and end-product properties. Genetic improvement programmes for wood properties and other characteristics of economic and ecological importance, which have traditionally focused on phenotypic assessments (e.g. of wood density, volume and adaptive traits), may in future be mainly concerned with new traits and/or genes that make it possible to reduce the cost of breeding. The possibility has also emerged of the mass propagation of forest trees by somatic embryogenesis, for the rapid deployment of superior genotypes.

The *Wood, Breeding, Biotechnology and Industrial Expectations* (*WBB*) conference was held from 11–14 June 2001 in Bordeaux (France). *WBB* was organized by INRA (Équipe de Génétique et Amélioration des Arbres Forestiers), and sponsored by the following organizations: The European Union (nºQLAM-2000-00226), INRA, AFOCEL, CTBA, Conseil Régional d'Aquitaine and Smurfit Comptoir du Pin. This multidisciplinary conference assembled 210 scientists from state institutions, universities and industry in 28 countries and covering a wide spectrum of expertise in genetics, biotechnology and wood sciences. *WBB* was a joint meeting between a group of European Union funded projects dealing with the general topic of the conference (Wood, Breeding and Biotechnology), the 9th Conifer Biotechnology Working Group and the IUFRO 5.01.02 and 2.04.00 working parties.

The objectives of *WBB* were: (1) to provide a forum for presentations and discussions on the introduction of biotechnologies (molecular and cellular biology, somatic embryogenesis, molecular genetics) and wood quality traits in tree breeding programs; (2) to identify, with the participants from industry, the main topics to be investigated in the future in order to meet both the increasing demand for wood and the environmental standards expected of wood processing industries and (3) to provide an opportunity for numerous contacts and stimulate exchange for new collaborations between participants.

The conference was divided into topic sessions as follows:

Topic 1: Methods for the assessment of wood and fibre properties. Non-destructive evaluation and recent progress in the rapid assessment of wood and fibre properties. Modelling wood properties at different stages in the forestry – wood chain (e.g. wood on standing trees, engineered wood products).

Topic 2: Natural variation and quantitative genetics of wood and fibre properties; environmental influences on wood properties. Inheritance and genetic variability of wood properties, genotype-environment interactions, age-age relationships, genetic relationships between adaptive, growth and form traits and wood properties. Interaction between forestry practices and genetic variation.

Topic 3: Wood and fibre properties for particular end uses. Relationships between basic wood properties and the performance of end products, impact of wood properties on processing, inheritance and genetic variation of end product properties, economic weights.

Topic 4: Genome analysis, genetic mapping, QTL detection, candidate genes and proteins, exploitation of macro and micro-synteny.

Topic 5: Somatic embryogenesis and tissue culture. Recent advance in clonal propagation, including the opportunity offered by cryo-conservation. Propagation systems to produce plants of high quality.

Topic 6: Molecular biology and genetic engineering.

Topic 7: Molecular diversity and application of molecular markers for seed and plant material certification.

Overall, 10 invited and 89 voluntary papers were presented, as well as 72 posters (abstracts available at http://www.pierroton.inra.fr/WBB/index.html). The present issue of Annals of Forest Science has been compiled from some of the communications presented during the conference. A total of 29 papers are included in this special issue of AFS. All manuscripts were peer-reviewed according to the editorial rules of the journal.

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