

## Vegetative Propagation Technologies in Plantation Forestry in the Context of Climate Change

Report by Jean-François Trontin, FCBA Technological Institute, France, Coordinator of IUFRO Working Party 2.09.02 on Somatic Embryogenesis and Other Vegetative Propagation Technologies, <http://www.iufro.org/science/divisions/division-2/20000/20900/20902/>

Global warming and climate-related environmental changes are central preoccupations in current breeding programs. Vegetative propagation of improved varieties is expected to be a critical and flexible tool to maintain the productivity in plantation forestry, balancing genetic gain with environmental and socio-economic considerations. A multivarietal/clonal forestry “revival” is expected in conjunction with the ongoing development of genome-wide approaches for selecting elite varieties. There are also strong synergies of vegetative propagation, especially somatic embryogenesis, with enabling technologies for efficient preservation, adaptation and deployment of varieties.

Against this background, a conference on the “Development and application of vegetative propagation technologies in plantation forestry to cope with a changing climate and environment” was held in La Plata, Province of Buenos Aires, Argentina, on September 19-23. The conference organized by IUFRO Working Party 2.09.02 (Somatic Embryogenesis and Other Vegetative Propagation Technologies), attracted 114 attendees (106 scientists and 8 additional members of the Local Organizing Committee) from 27 countries (Europe: 11; Latin America: 8; Asia/Oceania: 6; North America: 1, Africa: 1), who gave a total of 99 oral and poster presentations.

Visit the meeting website: <http://www.iufro20902.org/>

### Sessions focused on the following major themes:

SESSION 1: Strategies for integration of vegetative propagation into breeding programs in the context of global warming and associated stresses

SESSION 2: Towards multivarietal (or clonal) forestry: environmental factors affecting vegetative propagation of trees

SESSION 3: (Epi)genomics of embryo or other vegetative propagule development

SESSION 4: Preservation and adaptation of wild and selected genetic resources to environmental and socio-economic changes

SESSION 5: Lessons from in vivo growth of vegetative propagules, especially in various pedoclimatic conditions

SESSION 6: Reducing socio-economic and environmental costs of plantation forestry

The importance of plantation forestry was highlighted as forests are becoming increasingly fragmented and vulnerable in the context of both anthropic- and climate-related pressure.

Flexible and popular, low-cost vegetative propagation methods are considered critical and well-suited (especially somatic embryogenesis) for both sustainable plantation forestry and conservation of genetic resources (breeding and wild populations from marketable or endangered, multipurpose native species).

Application-oriented research efforts in close collaboration with breeders may allow the careful selection and cost-effective, rapid deployment (and turn-over) of elite varieties expressing natural or induced adaptation response (endophytes, mycorrhizal fungus, elicitors, genetic modification) to environmental stress.



Visit to nursery Charles Darwin, Pereyra Iraola Park by S. Galarco (September 23), copyright by University of La Plata (UNLP)

### Proceedings and future activities

Conference proceedings will be edited by Yill-Sung Park and Jan Bonga (Canadian Forest Service) and published online by mid-2017 at the IUFRO conference website (<http://www.iufro20902.org/>) and at <http://www.iufro.org/science/divisions/division-2/20000/20900/20902/>. The 5th IUFRO 2.09.02 Conference will be organized by Jorge Canhoto and Sandra Correia (University of Coimbra) in Coimbra, Portugal from September 10-15, 2018.

### Recognition of scientists by IUFRO WP 2.09.02

IUFRO 2.09.02 is proud to recognize at each conference a number of distinguished colleagues for their high expertise, exemplary career and significant (sometimes pioneering) contribution in vegetative propagation of trees. During the La Plata 2016 meeting the 2.09.02 coordination team and Organizing Committee (represented by J.F. Trontin, J. Krajiňáková and S. Sharry) as well as the whole 2.09.02 membership expressed their recognition to:

Drs. M. Raj. Ahuja (USA), Jenny Aitken (New Zealand), William J. Libby (USA), Gale H. McGranahan (USA), Scott A. Merkle (USA), Gerald S. Pullman (USA), Marguerite Quoirin (Brazil) and Mariano Toribio (Spain)

*This report has been abridged by the editor of IUFRO News. For the full report with detailed information on presentations, conference hosts and sponsors as well as an obituary for Jens Iver Find (University of Copenhagen, Denmark), visit: <http://www.iufro.org/science/divisions/division-2/20000/20900/20902/activities/>. Photo gallery: <https://drive.google.com/drive/folders/0B4zGrr4qaTOibEtHbk5lVEdaa28?usp=sharing>*