



Identification and mapping of *Chrysomela tremulae* resistance QTL in poplar

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The Fourth International Poplar Symposium (IPS-IV)
**“Meeting the Needs of a Growing World through Poplar and Willow Science:
Combining Traditional and Novel Approaches in the Genomic Era”**
Nanjing, China
June 5-9, 2006

The Fourth International Poplar Symposium (IPS-IV) - “Meeting the Needs of a Growing World through Poplar and Willow Science: Combining Traditional and Novel Approaches in the Genomic Era” - was held in Nanjing, China, June 5-9, 2006. IPS-IV was hosted by Nanjing Forestry University and sponsored by IUFRO Working Parties, 2.08.04 and 7.01.04. One hundred eighty-nine delegates representing 19 countries (Austria, Belgium, Canada, Chile, People’s Republic of China, Finland, France, Germany, India, Italy, Japan, Republic of Korea, The Netherlands, New Zealand, Serbia and Montenegro, Spain, Sweden, United Kingdom, and United States) attended. IPS-IV followed previous poplar symposia held in Seattle, (1995), Orleans, (1999), and Uppsala, (2002).

The symposium encompassed four plenary and contributed paper sessions that concentrated on the following four thematic areas.

- 1) The range of ecosystem services for which poplar and willow can be managed to provide environmental services, including agro-forestry crop production, phyto-remediation of toxic sites, watershed protection and riparian habitat restoration, and the control of desertification.
- 2) The applications of genomics and biotechnology to improve plantation productivity as well as traits of enhanced physical/chemical properties and physiologies for a variety of commodity markets and environmental services.
- 3) The dual role that applied genetic improvement programs must play in securing wood supply while ensuring the conservation of *Populus* genetic resources in both domesticated and natural populations.
- 4) The effect that a changing global climate may have on the production physiology of *Populus* plantation systems and native populations.

Seventeen invited presentations were made along with 46 contributed papers. Likewise, over thirty posters were exhibited. Highlights of the presentations included: 1) genomic investigations into flowering control, the evolution of the poplar genome, and a dissection of genotype-by-environmental interactions, 2) China’s field trials of transgenic poplars, 3) QTL analysis of complex traits, 4) techniques for the production of triploidy in *P. tomentosa*, 5) the state of *P. deltoides* domestication in China, 5) opportunities for phytoremediation using transgenics and endosymbionts, and 6) quantification of the effects of climate change on phenology and net primary productivity. Panel discussions addressed discrepancies between scientific discovery and application, and the need to establish better linkages between molecular breeding techniques and conventional varietal improvement approaches.

The Fourth International Poplar Symposium (IPS-IV)

A two-day excursion traversed 1,000 kilometers throughout the intensive poplar region of Sihong, Shuyang, and Siyang Counties of Jiangsu Province. Tour stops demonstrated research and application in the conservation *Populus deltoides* germplasm, *P. deltoides* varietal field trials, agro-forestry systems integrating poplar with wheat, rice, vegetables, and mushrooms, management of large-scale industrial production plantations, poplar environmental plantings along the Huaishu River and Grand Canal, and the Poplar Museum where the history of China's poplar program was exhibited. The tour concluded with a visit to a Danyang facility that manufactures poplar laminated flooring.

The organizers are investigating a publication of the top 40 papers. Suggestions for the location of the Fifth International Poplar Symposium were made at the business meeting of Working Party 2.08.04 and included Belgium, Italy, Croatia, and Turkey. An announcement of the location of the next poplar symposium is expected by year's end.