

PCC 2006 UNIVERSITY REPORT

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Overview (Status)

- Poplar/Willow research in Canadian universities is expanding especially in the areas of tree farming, growth and yield, modeling, genomics and genetics; and secondary transformation and value-added processing.
- Reports received from university scientists are summarised in the following slides.

Overview (Hot issues)

- 1) As President of the CSPP, Rob Guy organized an impressive plenary symposium at the joint Amer. Soc. Plant Biologists and Can. Soc. Plant Physiol. meeting that was held in Boston in August, 'Tree Physiology and Genomics'. Stewart Rood (U. Lethbridge), Jorg Bohlmann (UBC), Steve Strauss (Oregon State) and Bjorn Sundberg (Umea, Sweden) joined the meeting to discuss recent research with poplar including work that is benefiting from the recent poplar genome project. There were many other poplar presentations and posters, including the early results from Sharon Regan (Queen's) activation tagging studies. As President of CSPP, Rob Guy is stimulating a renewal of interest in tree biology.
- 2) Janice Cooke (U Alberta) and Stewart Rood are co-editing a special issue of Can. J. Bot. describing current Canadian research in poplar biology. It will include contributions from Canadians from across Canada with papers ranging from molecular biology through physiology to ecology and evolution,

Overview (Hot issues)

- 3) Om Rajora's group at the University of New Brunswick continues to work on molecular genetics and phylogenetics of poplars. A recent poplar molecular phylogeny paper using AFLP markers was published (*Theor Appl Genet* (2005) 111: 1440–1456). The group is also starting a genomics program on poplars and willows targeted to biofuels. This work is being done in collaboration with Dr. Alex Mosseler from Canadian Forest Service.
- 4) Development and use of phenotypic and molecular markers for improving disease resistance in hybrid poplars (Louis Bernier and Damase Khasa, Université Laval; Selvadurai Dayanandan, Concordia University), funded by FQRNT-Fonds Forestier(2004-2007). This project is progressing well with new families collected this summer.

Overview (Hot issues)

- 5) Development of short rotation plantation/agroforestry systems for energy production and greenhouse gas reduction (N.V. Thevathasan, A. Gordon and Rachelle Clinch University of Guelph). A paper on Application of agroforestry principles for biomass production in southern Ontario, Canada was presented at Vancouver Bioenergy Conference August 27-30, 2006.doc

Overview (Hot issues)

- 6) Ellen MacDonald's group (U Alberta); Reclamation of sands tailings using poplar species including aspen: 1) the efficacy of different depths of organic matter on top of saline sodic overburden. Measurements of gas exchange, growth, foliar nutrients etc. in relation to depth of organic matter placed and in relation to topographic and slope position are being taken. 2. Second project is also related to oil sands but is being conducted in natural forest sites that have saline soils (they are next to saline wetlands). The relationships between soil water, salinity, nutrients, soil type, and productivity of aspen forest (using stem analysis) are being examined..
- 7) Development of intercropping/alley cropping agroforestry system with hybrid poplar in Quebec (Alain Olivier and Damase Khasa, Laval University; Robert Bradley, University of Sherbrooke, Alain Cogliastro, University of Montreal); One PhD student is studying the ecophysiology and system productivity and one Msc student is looking at the arbuscular mycorrhizal guilds in the soya-poplar agroforestry intercropping system

Overview (New developments)

- The new initiative for establishing a Canadian Tree Farming Network submitted to the Network Centres of Excellence in September 2005 was not funded. The project Director, Dr. Louis Bernier (Laval University) and co-applicants are looking at other funding opportunities. The renewal of Ligniculture-Québec was possible with the financial assistance of Ministère Développement économique, Innovation et Exportation (MDIE). Dr. Louis Bernier (U. Laval) is co-leader of Ligniculture-Québec along with Dr. Christian Messier (UQAM)

Overview (New developments)

- **New Centre**
- A new Centre for Northern Agroforestry and Afforestation in the College of Agriculture was approved by University of Saskatchewan Council on June 2006. The Centre will be directed by the AFIF Chair (Dr. Ken Van Rees).

Overview (New developments)

- **Developing Agroforestry/Afforestation Strategy for Saskatchewan**
- The AFIF Chair has been holding meetings with various user groups to develop a strategic plan for the agroforestry industry in Saskatchewan. Goal is to produce a document in the fall which will be given to government.

Technical/Scientific Information (new, Trends, Trials, Research)

- A new biomass energy plantation (1 ac) was established on the U of S campus (Saskatoon) this spring with 7 willow and 3 hybrid poplar clones from Derek Sidders, CFS, Edmonton. A native willow trial was also started with material from Bill Schroeder, AAFC-PFRA Shelterbelt Centre. The SFC is helping to fund the work.
- Several field days were held at Meadow Lake plantations including visits by Honourable Eric Cline and Maynard Sonntag, a farmer field day and a tour for the Canadian Institute of Forestry, Saskatchewan Section.

Sector Organization

- See previous reports and information above (Hot issues) to learn about Canadian university scientists involved in poplar/willow research.

Events (both past and planned)

Conferences , Workshops and Symposiums

Dr. Ken Van Rees organized Agroforestry Conference in Saskatoon titled 'Deriving Diversity on the Farm through Agroforestry' on March 21-22, 2006 with the Saskatchewan Forest Centre. Conference was attended by 120 people from government, industry, university and university students from EN SC 465. The Premier gave the keynote address and arranged for Tim Volk from SUNY to give a keynote talk on willow. One day focused on the research 'Agroforestry: Research Activities and Application in the Prairies' and posters for the second day. The conference was a great success and received much media attention.

Reports and Publications

- WESBOGY : Western Boreal Growth and Yield Association Reports (Contact: Dr. Phil Comeau, Department of Renewable Resources, University of Alberta)
- Lignes et Cultures: Published by Ligniculture-Québec (contact: Brigitte Bigue, Forest Biology Research Centre, Pavillon Marchand, Laval University)
- Agroforestry Conference: Deriving Diversity on the Farm through Agroforestry, Saskatoon, March 21-22, 2006 (Contact: Ken Van Rees).

Key People

- List of Contacts (in addition to the report presenter)
- See previous reports