

2004 Annual Report for the Province of Saskatchewan



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Overview

- Status
 - Interest in hybrid poplar continues – Over 1400 acres planted
 - Over 30 poplar related research projects under way in Saskatchewan
- Hot issues
 - Forest 2020
 - Risk Management – drought, pests, winter damage
 - Clone adaptation and suitability
 - Agricultural use of poplars as buffers (riparian, field, nutrient)
- New Developments
 - U of S Afforestation / Agroforestry Chair established
 - National Populus Germplasm collection initiated
 - *P. balsamifera*, *P. deltoides*
 - Clonal archive being established at Indian Head

Policy and Legislation

- Saskatchewan Crop Insurance Corporation – continued discussions held to insure afforestation, currently working on details of program with SCIC.

Statistics

- In 2004, approximately 350 acres of hybrid poplar were planted in Saskatchewan.
- Including 2004 planting, there are about 1450 acres of hybrid poplar plantation in Saskatchewan. The majority have been established since 2001.
- Approximately 75 acres of hybrid poplar (primarily Walker) stooling beds have been established in Saskatchewan

Technical Information

Selection and Breeding

AAFC-PFRA Agroforestry Division Research Projects

Collaborative AAFC-PFRA/ALPAC hybrid poplar breeding project

- Over 150 crosses completed
- Since 2001 a total of 124 families and over 14,000 progeny in initial stages of screening

Clone tests

- A total of 24 clone tests under way in prairies

Germplasm Collection

- National project sampling natural range of *P. balsamifera* and *P. deltoides*

Contact - Bill Schroeder

Technical Information

Cultivation

University of Saskatchewan NSERC Project

- **Objective 1:** To investigate different cultural practices for the establishment of hybrid poplar plantations.
- **Objective 2:** To quantify the sequestration of carbon below- and above-ground.
- **Objective 3:** Application of the ecosystem simulation model, FORECAST (whose calibration is based, in part, upon data from Objectives 1 and 2) to explore the potential long-term ecological and economic productivity of these systems, and its implications for carbon sequestration
- **Contact** – Ken van Rees

Technical Information

Cultivation

Saskatchewan Forest Centre

SFC has established a Demonstration Network – a series of Agroforestry/Afforestation sites throughout Saskatchewan. These sites are signed and will be accessible thru the SFC website.

Contact – Deb Weedon

Technical Information

Cultivation

– Forest Development Fund (SFC) Research Projects

- Agroforestry based wood production and soil conservation
 - John Kort, AAFC-PFRA Shelterbelt Centre,
- Agroforestry/Woodlot management pilot project
 - Leroy Bader, Parkland Agroforestry Group
- “Sivlopastoral” hybrid poplar and larch demonstration sites
 - Lewis Reeve, ADD Board 42
- Afforestation plot inventory and out plantings
 - Derek Sidders, CFS
- Soil nutrient supply rate as an index of site suitability and seedling growth rate requirements
 - Ryan Hangs, Western Ag Innovations

Technical Information

Cultivation

- **Forest Development Fund (SFC) Research Projects**
 - Enhancing hybrid poplar growth by nitrogen fertilization
 - Ken van Rees Univ of Sask; Salim Silim, AAFC-PFRA Shelterbelt Centre
 - Production of Hybrid Poplar within the boreal transition region with emphasis on production economics and extension
 - Carl Barber
 - Hybrid poplar stooling bed demonstration
 - Jody McConnell, Saskatchewan Agriculture and Food

Technical Information

Cultivation

- **AAFC-PFRA Agroforestry Division Research Projects**
 - Whole-tree water relations in Walker and Northwest poplar – adaptations and plant and soil resistances to water use
 - Comparison of leaf specific conductivity in terminal shoots of CanAm and Walker poplar
 - Application of Liquid Swine Manure from an Intensive Livestock Operation to a Hybrid Poplar Plantation
 - Patterns of seasonal low temperature acclimation and de-acclimation in twenty-two clones of hybrid poplar.
 - Dormancy development and loss in hybrid poplar clones.

Technical Information

Cultivation

AAFC-PFRA Agroforestry Division Research Projects

- Drought tolerance of different hybrid poplar clones.
- Rooting capacity and optimum rooting temperature of hardwood cuttings of different hybrid poplar clones.
- Hybrid Poplar Plantations for Farm Diversification in Saskatchewan -Weed management, clone tests, clone response to fertilization with hog manure
- Pest Monitoring of hybrid poplar plantations
- Weed competition and management techniques.

Technical Information

Cultivation

Saskatchewan Environment – Forest Service

- Coordinated poplar afforestation incentive project
- 35,200 trees (35 acres) were planted by 13 farmers
- Contact – Martha O’Sullivan

Technical Information

Cultivation

Saskatchewan Research Council

- A new version of the CFS Carbon Budget Model is under development and being tested through the model forest network
- The CBM will have an afforestation module, in which the user will set some initial conditions representing the previous agricultural land use. The model will then calculate carbon sequestration from data supplied by the user (yield curves, soil carbon data etc.).
- Contact: Mark Johnston

Technical Information

Cultivation

Pacific Regeneration Technology (PRT) Nursery

- Established a further 2 Ha of demonstration plantations in spring 2004 (Walker)
- Established a further 1 acre (5,000 plants) of stool beds in spring 2004 consisting of Walker, Green Giant, Northwest, DN-34, DN-182 and Katepwa.
- Grew 7,500 seedlings for Saskatchewan Forest Centre for their stoolbed program.
- Currently growing 100,000 containerized cuttings under contract to Saskatchewan Environment – Forest Service
- Contact – Grant Harrison

Technical Information

Harvest and Utilization

Saskatchewan Research Council

- Life Cycle Analysis of afforestation with hybrid poplar.
- Conducting a "cradle-to-grave" analysis of GHG and other environmental impacts associated with an afforestation scenario. The analysis will include plantation establishment and maintenance, and then follows the harvested material through each of 3 pathways: production of OSB, gasification for electricity production, and gasification for ethanol production.
- Contact – Mark Johnston

Technical Information

Harvest & Utilization

- **Forest Development Fund (SFC) Research Projects**
 - Evaluation of Saskatchewan Grown Hybrid Poplar for Veneer Products and OSB
 - Bob Knudson, Forintek
 - High value aspen sawn and veneer products
 - Robert Wellwood, Alberta research Council
 - Develop a value-added component industry for Saskatchewan wood products
 - Forintek
 - Furniture and interior finish opportunities for trembling aspen and white birch
 - Forintek
 - Value added processing of hybrid poplar for solid wood products
 - Forintek; Dave Halland; John Kort, AAFC-PFRA Shelterbelt Centre

Industry

- Major stakeholders, groups
 - Mistik Management,
 - TOLKO
 - Parkland Agroforestry Group
 - Private landowners
 - Pacific Regeneration Technology (PRT) Nursery (Prince Albert)
 - Wildcat Wood Products Ltd.
 - Halland Forest Products

Events

Saskatchewan Forest Centre

- January 12 – 16 Saskatoon – Crop Production
- January 20 – Tisdale – Crop Talk
- January 21-22 – Lloydminster – Cattlemen’s Show
- Feb 3 – Yorkton – Crop update
- Feb. 6 – Prince Albert – SFC Workshop on Establishing& Managing Tree Plantations
- Feb 11-12 - SSCA - Regina
- March 19–20 - Prince Albert Farm Fair
- July - AGRI-Arm field days - Scott

Presentations

University of Saskatchewan

• **Presentations at National and International Meetings**

- Rick Block, Diane Knight and Ken Van Rees 2004. Fine-root dynamics in hybrid poplar plantations in Saskatchewan, Canada. 1st World Congress of Agroforestry June 27-July 2 2004, Orlando Florida
- Ken Van Rees, Diane Knight, Rick Block, Neil Booth, Doug Jackson, Bill Schroeder, Roger Nездoly, Grant Harrison. Cultural Practices for Establishing Hybrid Poplar Plantations in Saskatchewan, Canada. 1st World Congress of Agroforestry June 27-July 2 2004, Orlando Florida.
- Block, R. K. Van Rees and J.D. Knight. 2003. Evaluation of hybrid poplar plantations for Saskatchewan, Canada. Agronomy Abstracts 94th American Society of Agronomy, Denver CO. Nov 2-7
- Block, R.M.A., K.C.J. Van Rees, J.D. Knight, R.G. Nездoly, W.R. Schroeder, G. Harrison and H. Kimmins. 2003. Hybrid poplar plantations in Saskatchewan, Canada: An agroforestry initiative. XII World Forestry Congress, Quebec City, Quebec, September 21-28, 2003.
- Van Rees, K.C.J. Dec 9, 2003. Enhanced hybrid poplar growth by nitrogen fertilizer. FDF Agroforestry Project Update, Prince Albert Exhibition Grounds.

Reports and Publications

Saskatchewan Forest Centre (www.saskforestcentre.ca)

- Costs and Returns of Harvesting Trees on Farms
- Site Preparation for Plantations
- Guidelines for Establishing and Managing Tree Plantations
- A Guide to Hybrid Poplar Revenue and Costs
- A Guide to Hybrid Poplar Stooling Bed
- Hybrid Poplar Product Breakdown and Markets
- Saskatchewan Grown Hybrid Poplar for Veneer Products and Oriented Strand Board
- Optimal Site Characteristics for Growing Hybrid Poplar

Reports and Publications

University of Saskatchewan

- Articles:

- Poplars touted as farm crop. The StarPhoenix. February 4, 2004.
- Poplars may be future revenue source for farmers. The Leader-Post, February 4, 2004.
- Planting trees focus of new U of S Ag Research Chair, Research News, U of S, Jan 28, 2004.
- A new U of S Research Chair looks to trees. Biotechnology Focus March 2004, page 8
- Van Rees, K.C.J. 2004. Tree plantation research in Saskatchewan making progress. Logging and Sawmilling Journal, June Issue, p 54.

Key People

- AAFC-PFRA Agroforestry Division
 - John Kort – kortj@agr.gc.ca
 - Salim Silim – silims@agr.gc.ca
 - Bill Schroeder – schroederb@agr.gc.ca
- Saskatchewan Forest Centre
 - Robin Woodward - rwoodward@saskforestcentre.ca
 - Deb Weedon - dweedon@saskforestcentre.ca
 - Larry White - lwhite@saskforestcentre.ca
- Canadian Forest Service
 - Al Jurgens – ajurgens@saskforestcentre.ca
 - Derek Sidders – dsidders@NRCan.gc.ca
- University of Saskatchewan
 - Ken van Rees – vanrees@skyway.usask.ca

Key People

- **Parkland Agroforestry Group**
 - Marg Sullivan – ccr1@sasktel.net
- **Saskatchewan Environment and Resource Management**
 - Martha O-Sullivan – M'O'sullivan@serm.gov.sk.ca
- **Saskatchewan Research Council**
 - Mark Johnston – johnston@src.sk.ca
 - Genserve Labs
- **Mistik Management**
 - Roger Nerdoly – roger.nerdoly@mistik.sk.ca

Key People

- Forintek Canada Corp
 - Rhonda Lindenbach-Gibson – rhonda@van.forintek.ca
- AAFC Semi-Arid Research Station, Swift Current
 - Harold Steppuhn – steppuhn@agr.gc.ca
- Pacific Regeneration Technology (PRT)
 - Grant Harrison - gharrison@prtgroup.com
- National Research Council
 - Wilf Keller