
Short-Rotation Woody Crops Operations Working Group NEWSLETTER

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4th Biennial Conference Update
September 14-17, 2002, Arrowwood Hotel,
Alexandria, Minnesota

Formal Presentations – Monday, September 17

Morning Session

9:00 – 9:30 The Minnesota Hybrid Poplar Research Cooperative Program: Results and Recommendations – Bill Berguson

9:30 – 10:00 The Status of the Willow Biomass Project in New York – Timothy A. Volk, Lawrence P. Abrahamson, and Edwin H. White

10:00 – 10:15 break

10:15 – 11:00 Practical Application of Phytoremediation at a Municipal Landfill – Christopher J. Rog and Edmund Bauer

11:00 – 11:30 Wood Energy Scale Up Project : Hybrid Poplar Cost and Production Data Through 2000 – Sheila Faber, Dean A. Schmidt, Ernest Schmitt, Steve Taff, and Mark Downing

11:30 – 12:00 A Combination Weed Compaction and Herbicide Treatment Method and Apparatus – Dan Netzer and Adam Weise

12:00 – 1:30 Lunch

Afternoon Session

1:30 – 2:00 Diagnosing nutrient requirements and predicting fertilizer response in short rotation wood crops: Lessons learned from Minnesota hybrid poplar fertilizer trials – Mark Coleman and David Tolsted

2:00 – 2:30 Irrigation and Fertilization Effects on Above and Belowground Growth and Productivity of Four Tree Species in an Intensively Managed Plantation – David R. Coyle and Mark D. Coleman

2:30 – 3:00 Unique Rooting Properties of Hybrids Between *Populus deltoides* and *P. maximowiczii* – Don E. Riemenschneider

3:00 – 3:20 break

3:20 – 4:15 Twenty-five Years of Poplars research: Highlights and Status – Lynn Wright and Don Riemenschneider

4:15 – 5:00 Group Discussion

Suggested Topics:

- Maintaining a National R&D Program
 - Research direction with emphasis on below ground studies
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**SRWC-OWG
Steering Committee Meeting**

The Steering Committee will meet at 9:00 PM on Monday, September 16th (or immediately following the banquet). The tentative agenda includes:

- Treasurer's report on membership and finances
 - Status of Sustaining Sponsors
 - Publication of Proceedings
 - Future of Organization
 - New Chair
 - Next meeting – location and topic
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FY02 Budget and Impact to ORNL

FY02 brought major changes to ORNL's Bioenergy Feedstock Development Program. The Program's FY02 funding was reduced by about 70%. These cuts forced the elimination of research and reductions in program management, analysis, and, most important, staff.

Some specific changes included:

- elimination of more than 30 contracts with universities and private consultants, and about 10 collaborative agreements with various USDA groups;
 - elimination of university-based crop breeding programs including loss of improved plant materials;
 - elimination of environmental analysis activities;
 - major cutbacks to integrated analytical capabilities; and
 - major cutbacks to public outreach activities including access to information resources, databases, staff that deal with feedstock-related questions.
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**International Poplar Council
New website**

The International Poplar Commission (IPC), a subsidiary body of the Food and Agriculture Organization (FAO) of the United Nations, has launched a new website which provides a great deal of valuable information about poplars and willows and about scientific and technical activities related to these trees worldwide. Included is contact information for the National Poplar Commissions of the 35 member countries of IPC, as well as an International Register of Poplar and Willow Cultivars and a Directory of Poplar and Willow Scientists

[1\)http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=1580&Jangld=1&89257822.](http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=1580&Jangld=1&89257822)

**DOE begins international effort
to sequence tree genome**

Cottonwoods, hybrid poplars and aspens could play a role in improving the environment, displacing imported oil and creating domestic jobs, but first scientists from the Department of Energy, Oak Ridge National Laboratory and around the world have to sequence the Populus genome.

Trees like cottonwood, hybrid poplar and aspen have long been used as model organisms in forestry, and the choice of Populus as the first tree genome to sequence is due in large part to their rapid growth rate, small genome size and widespread use in areas of interest to the forest industry and DOE.

"This effort will furnish scientists both in this country and abroad with an unprecedented molecular 'parts list' for a tree," said Jerry Tuskan, a researcher in ORNL's Environmental Sciences Division. "Such a list will provide the scientific community with a catalog of genes, knowledge as to what these genes do in trees and an exciting opportunity to better understand how trees grow."

Ultimately, this information will allow scientists to more effectively use trees to carry out important functions like carbon sequestration and enhanced production of biomass for fuels and fiber.

This project builds upon the success that DOE has had in mapping the human genome, a decade-long effort that is expected to lead to cures and the prevention of diseases in people. While sequencing the human genome took years, researchers at DOE's Joint Genome Institute, ORNL and cooperating institutions expect to make the genetic blueprint of Populus available within 18 months. And they expect the payback to be significant.

"Genetic sequencing of Populus is expected to lead to faster growing trees, trees that produce more biomass for conversion to fuels, while also sequestering carbon from the atmosphere," said Stan Wullschleger of ORNL's Environmental Sciences Division. "In addition, trees with unique traits may be used in phytoremediation, a process whereby trees such as cottonwoods or hybrid poplars could be used to clean up hazardous waste sites."

"Clearly, the information we gain from this effort will benefit ongoing and future projects within DOE and open the doors to countless other opportunities to use woody plants in the pursuit of goals related to traditional forest products and even ecological preservation."

Worldwide, support for the project is high, as more than 100 scientists have indicated via the Web that they believe a poplar genome sequencing effort should be a top priority of forest research. Already, cottonwoods, hybrid poplars and aspens are being used in a variety of ways ranging from paper production to carbon sequestration to the development of fast-growing trees as a source of feedstocks for renewable bio-based products.

"I have never seen the forest genetics community more excited," said Toby Bradshaw, a molecular biologist with the University of Washington, which helped DOE lay the foundation for this effort. "The sequencing of the poplar genome will be a bonanza for researchers seeking to understand how individual genes influence the growth of trees and their adaptation to the natural environment. This knowledge might eventually be applied to the breeding of fast-growing trees capable of producing wood, fiber and energy sustainably on a small amount of land."

In addition to ORNL, participants in the international project include the Joint Genome Institute, the University of Washington, Genome Canada and the Swedish University of Agricultural Sciences. The Joint Genome Institute sequencing facility will produce half of the sequence this year and another half in 2003.

**10th Biennial Biomass Conference
BIOENERGY 2002
Bioenergy for the Environment
September 22nd - 26th, 2002
Boise, Idaho**

The conference will highlight a number of areas including dedicated energy crops, feedstock engineering, sustainability and environmental issues, alternative fuels, economic policy issues, bioenergy conversion technologies, and distributed electricity generation.

Additional information can be found on the conference website:

<http://www.uidaho.edu/bioenergy/frames.htm>

**USDA Symposium
Natural Resource Management to
Offset Greenhouse Gas Emissions**

This symposium will examine natural resource management opportunities for sequestering atmospheric CO₂ across multiple biomes. Included in the scope of this symposium are forest, agriculture, range, tundra, desert, urban, and wetland ecosystems. This meeting will bring together research scientists, land managers, and policy makers studying greenhouse gases, carbon sequestration, accumulation, and cycling in terrestrial ecosystems to:

- 2) present recent research on management options for increased storage of terrestrial carbon;
- 3) present monitoring information on current terrestrial carbon stocks and other greenhouse gases;
- 4) present new and innovative technologies and methodologies for measuring and monitoring carbon stock and other greenhouse gases in terrestrial ecosystems;
- 5) present economic projections for alternative carbon sequestration practices in different terrestrial ecosystems; and
- 6) provide a forum for discussing the policy implications of scientific carbon research findings.

Detailed registration, abstract submission, and payment information can be found on the symposium web site: <http://www.sgcp.ncsu.edu/carbon2002>

**International Workshop
Sustainable Bioenergy Production Systems:
Environmental, Operational
and Social Implications
Belo Horizonte, Brazil
Oct 28 - Nov 1 2002**

The conference hopes to address a number of questions related to resource assessment and sustainability.

Global and local bioenergy resource assessment
How adequate are existing systems for assessing global and local biomass resources? Are sufficient agricultural and forest resources - land, genetic base, physiological capability - available to meet bioenergy goals? What is the nature of global and local markets for bioenergy at present and how are they responding to technical and policy changes?

Sustainable bioenergy production systems

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- Potential site productivity. What are the limitations to strategies for genetic and crop improvement? How can factors affecting site quality, including nutrients, water and pests (weeds, diseases, insects, animals) be managed sustainably?
 - Environmental quality. What are the environmental impacts of intensive management systems and how can they be minimized? What are the criteria of sustainable environmental management systems and how can they best be characterized? What is the role of adaptive management strategies?
 - Operations and economic efficiency. What are the characteristics of efficient supply chains - from harvesting to combustion - for biofuels from intensive plantation management systems? What are the recent developments in efficient technology? Can life cycle analysis and other tools for evaluation improve the sustainability of supply chains?
 - Strategies to realize socio-economic benefits of bioenergy systems. What are the social benefits, particularly for rural communities, of increased use of bioenergy on a local and regional level and how can they be optimized?

<http://www.ieabioenergy.com/events/Brazil2002/>
