NEWBIO EXTENSION UPDATE

Annual Symposium 2013

Context

• What is extension?
  – Delivering research to the public

• Issues in this project
  – This is new stuff – a new industry
  – Lack of markets
    • How do we talk to farmers/producers?
Our Tasks

• Task 6.1: Integrated demonstration sites
• Task 6.2: Biomass equipment access program
• Task 6.3: Small business and economic development
• Task 6.4: Expand eXtension.org for willow and warm-season grasses
• Task 6.5: Interactive and innovative learning-lessons tools
NW PA and NE OH demo region

- Just hired Sarah Wurzbacher
- Ohio State working on Miscanthus
- County farm demo
  - 100 acres

Northern NY

- 1000 plus acres of willow

Willow farms – Cape Vincent, NY area
WV Demo Sites

- Key demonstration site: Mead Westvaco surface mined site near Rupert, WV
- Secondary Site: the Wilds in Central OH

![Map of WV Demo Sites](image1)

Equipment Access Program

- Purchased an Egedal energy planter from Denmark (hosted by Double A willow)
- Cost share purchase of 2 different harvesters (with Celtic Energy and Double A willow)
- For loan during project life across the region
- Farmer covers transportation, maintenance, training and operational costs

![Egedal planter](image2)

![New Holland FR header](image3)
Business Models

- Refinement of working paper on business models frameworks
- Identification of participants in the biomass supply chain
- Application of business model framework to companies identified
- Price reports

Expand eXtension.org for willow and warm-season grasses
Interactive and innovative learning-lessons tools - Website

Interactive and innovative learning-lessons tools – Webinars

Upcoming Webinars
10 September, Is Ethanol Ruining my Engine? Andre Boehman, University of Michigan

Recordings of Previous Webinars
11 June 2013: The Future of Residential Wood Heating: Growth or Collapse? John Ackerly, President, Alliance for Green Heat
14 May 2013: Process Pathways from Wood to Transportation Fuels: Seeking Suitable Scale Peter Van Walsum, University of Maine
09 April 2013: Biomass Feedstock Production in the Northeast: Land Use, Yields, and Sustainability - Peter Woodbury, Cornell University
12 Feb 2013: Switchgrass, Miscanthus, and Arundo growth on Surface Mines in West Virginia - Jeff Skousen, University of West Virginia
29 Jan 2013: Miscanthus and Energy - Scott Coyle-Huhn, Aloterra Energy
Interactive and innovative learning-tools – Fact sheets

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NEWBio Energy Crop Profile: Shrub Willow

**Planting**
Shrub willow has a short growth season, from June to about September, before the seeds are ready to harvest. It is a valuable energy crop for biofuels and bioenergy production. Willow is usually planted in the fall, but can be planted in the spring, which may result in a more robust plant. Willow can be planted in a variety of soils, including clay, loam, and sand. Willow is adaptable to a wide range of climates, making it a valuable crop for bioenergy production in the Northeast. Willow is often planted in rows, with a spacing of 3 to 5 feet between rows and 1 to 2 feet between plants. Willow is tolerant of a wide range of soil conditions and is well suited to the Northeast.

**Establishment of the Crop**
Newly planted willow is often stunted and slow to establish. Willow can be established by planting willow rods or cuttings. Willow roots can be established by planting willow rods or cuttings. Willow roots can be aware of any existing soil erosion and establish a barrier against soil erosion. Willow can be a valuable tool in the fight against soil erosion and can be used to establish a barrier against soil erosion.

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NEWBio Energy Crop Profile: Switchgrass

**Establishing the Crop**
Switchgrass is a cool-season grass that can be grown in a wide range of climates. Switchgrass is a valuable energy crop for bioenergy production in the Northeast. Switchgrass is often planted in the fall, but can be planted in the spring, which may result in a more robust plant. Switchgrass is tolerant of a wide range of soil conditions and is well suited to the Northeast.

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NEWBio Energy Crop Profile: Shrub Willow

**Establishment of the Crop**
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Interactive and innovative learning-tools -Videos

- Seed grant project
  - Champions of Biomass
- Interns
  - Nichole Heil and Barry Forceng

Wood Crest Switchgrass Farm

Energex Wood Pellet

Penns Valley High School
Interactive and innovative learning-lessons tools – Short courses

The Business of Biomass
2013 Bioenergy Short Course Series

Bioenergy Supply Chains
23 April, 2013
Pelleting Biomass
25 June, 2013
Bioenergy Symposium
16 August, 2013
Biofuels Conversion
November, 2013

Interactive and innovative learning-lessons tools - Displays
Contacts

- Penn State
  - Evelyn Thomchick
  - Daniel Ciolkosz
  - Sarah Wurzbacher
  - Joel Hunter
  - Marvin Hall
  - Dennis Murphy
  - Ed Johnstonbaugh
  - Gary Musgrave
  - Doug Schaufler
- Vermont
  - Sue Hawkins
- New York
  - Dean A Sprague
  - Timothy Volk
  - Larry Smart
- Ohio State
  - David Marrison
  - Les Ober
- West Virginia
  - Shawn Grushecky
  - Jeff Skousen