

Feedstock for BioEnergy
A “growing” Issue

BioEnergy Forum

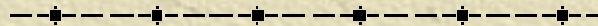
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How can we (NRCS) contribute?



- ✦ Provide funding for development of small scale demonstration through Conservation Innovation Grants (CIGs).
- ✦ Provide guidance on small scale plantings of feedstock through our conservation planning process and plant materials program.
- ✦ Provide technical expertise in evaluation of plants for potential as a biofuel feedstock through our Plant Materials Center in Alderson, WV and local field offices.

Conservation Innovation Grants (CIGs)

✦ Conservation Innovation Grants (CIG) is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection, in conjunction with agricultural production.



Conservation Innovation Grants (CIGs)

✦ Under CIG, **Environmental Quality Incentives Program** funds are used to award competitive grants to non-Federal governmental or non-governmental organizations, Tribes, or individuals. CIG enables NRCS to work with other public and private entities to accelerate technology transfer and adoption of promising technologies and approaches.



Conservation Innovation Grants (CIGs)

- ✦ Provide feasibility information.
- ✦ Demonstration of facility.
- ✦ NRCS awarded \$560,000 for a poultry litter gasification facility in Hardy County in 2006.

Farm Bill Programs

- ✦ Farm Bill contracts can provide cost share assistance on modification of waste storage facilities to methane generators.

Potential Biofuel Sources

✦ Existing crops

- Cool Season Grass species.
- Forest Resources

✦ Introduced Plants

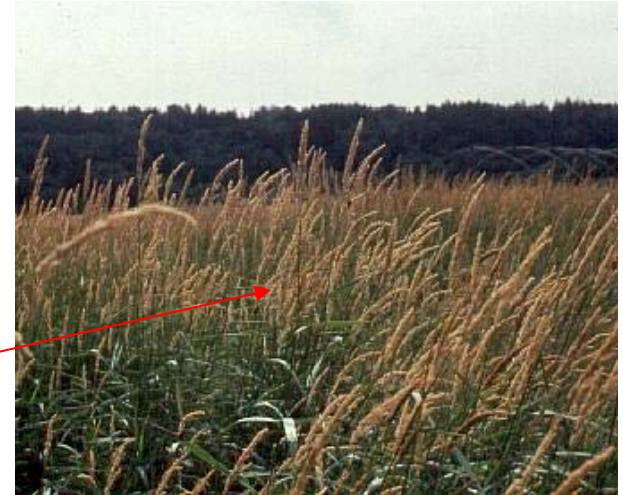
- Forestry plantings
- Warm Season Grasses
- Specialty plants



Existing Crops- Evaluate Potential

✦ Cool Season Grasses

- Fescue
- Orchard Grass
- Reed Canarygrass
Phalaris arundinacea
- Tall Oat Grass
Arrhenatherum elatius



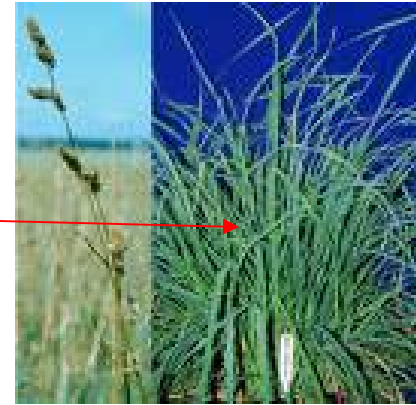
✦ Forest Resources

- Plantations



What about Cool Season Grasses?

- ✦ *Dactylis Glomerata*
(Orchard Grass)



- ✦ *Festuca arundinacea*
(Tall Fescue)



What about Cool Season Grasses?

- ✦ Are cool seasons a viable option?
- ✦ Are they a manageable and productive crop in West Virginia?
- ✦ Can they eliminate the transition to a different crop?
- ✦ Further evaluation is needed.

Grasses

Introduced Plants – Warm Season

✦ Warm Season Grasses like Switchgrass can provide significant tonnage of feedstock but requires a different type of management for forage producers.



Warm Season Grasses - Switchgrass

- ✦ Switchgrass as a biofuel feedstock requires management 180° from quality forage production.
- ✦ High-quality ethanol feedstock is low in nitrogen content and high in cellulose.
- ✦ Nitrogen reduces the conversion efficiency of fuels into energy.
- ✦ Therefore, zero or low fertilizer nitrogen applications are advantageous.

Warm Season Grasses - Switchgrass

- ✦ West Virginia provides challenges to establishing and maintaining switchgrass.
- ✦ It provides problems due to our restrictive topography.
- ✦ It may have limited benefits as a biofuel feedstock on marginal lands. (Minedlands and Highly Erodible Land)



Forest Resources

- ✦ There may be value for biofuels in many of our low quality timber stands not otherwise being used in the markets.
- ✦ Value in wood residue from logging and clearing operations.
- ✦ Fast growing wood products

Forest Resources Continued

- ✦ Utilizing unwanted forest products to meet evolving market demands.
- ✦ Evaluate areas of the state where low quality wood products exist and lack current markets.



Forest Resources Continued

Introduced Plants

- ✦ Hybrid Poplar
- ✦ Black Locust
- ✦ Alder
- ✦ Willow



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Introduced Plants

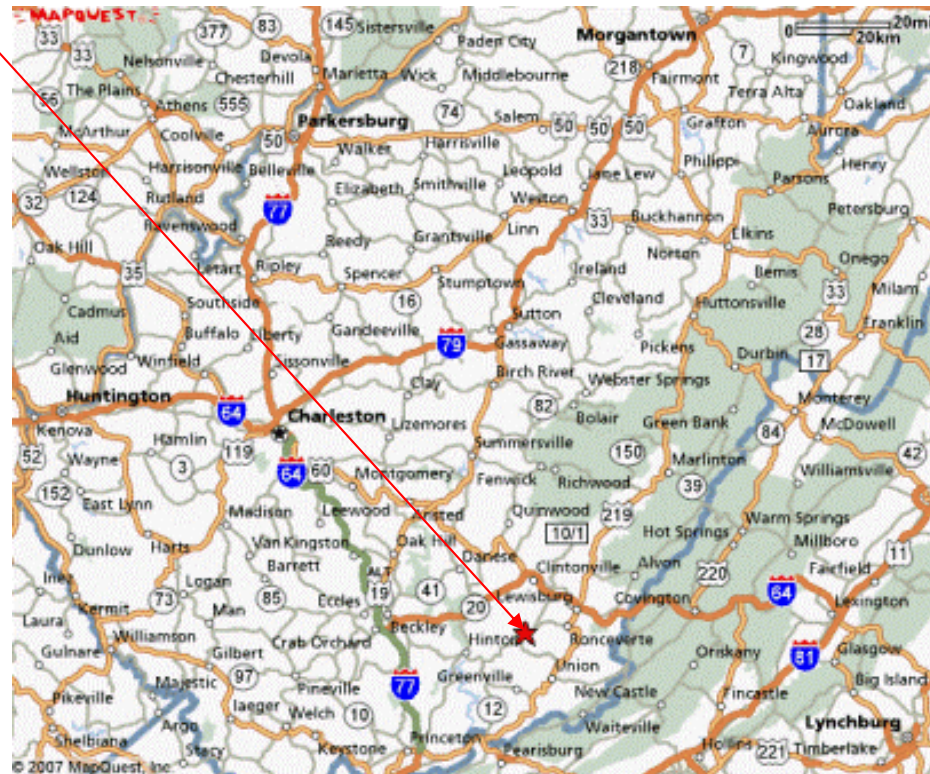


✦ *Arundinaria gigantea*
– Native Bamboo



✦ Eastern Gamagrass
Tripsacum dactyloides

Alderson, West Virginia Plant Materials Center



*Alderson, West Virginia
Plant Materials Center*



Alderson, West Virginia Plant Materials Center

✦ The PMC could provide research trials for adaptability of plants for this region.



Alderson, West Virginia Plant Materials Center



✦ The PMC has the ability to produce, harvest, clean and store seed.



Thank You



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