



## Development of switchgrass as a viable agricultural commodity for farmers in southern Iowa

**Principal Investigator:**

Dora Guffey  
Chariton Valley  
Resource Conserva-  
tion & Development  
Centerville

**Co-investigator:**

Gerald Miller  
College of Agriculture  
Iowa State University

**Budget:**

\$30,000 for year one  
\$30,000 for year two  
\$30,000 for year three  
\$19,700 for year four

**Abstract:** *The Chariton Valley Biomass project involves transforming switchgrass into a cash energy crop for southern Iowa farmers. The Leopold Center provided funding for communication and education activities connected with the project.*

### Background

The Chariton Valley Biomass Project is a co-operative effort between public and private agricultural and energy interests in Iowa and at the national level. The aim is to develop warm and cool season grasses such as switchgrass (*Panicum virgatum*) and reed canarygrass (*Phalaris arundinacea L.*) grown in southern Iowa as a source of renewable energy. Project partners propose to cofire this biomass with coal to generate a sustained supply of 35 megawatts of biomass-derived electric power at Alliant Energy's Ottumwa Generating Station. To accomplish this, the project will require up to 200,000 tons of biomass from more than 50,000 acres, grown with the help of as many as 500 farmers. The Chariton Valley Biomass Project is one of several projects that are part of an initiative by the U. S. Departments of Agriculture (USDA) and Energy (DOE) to support development of the biomass energy industry in the United States through the Biomass Power for Rural Development Program.

Specific biomass project objectives included:

- Development of technologies to produce electricity from the cofiring and gasification of switchgrass biomass,
- Establishment and development of switchgrass biomass plantings, and
- Assessment of the environmental impacts of producing and using switchgrass to generate electricity.

Goals and objectives of the project information and education activities were to:

- Promote networking and information exchange between current and potential project participants, for example, through periodic newsletters and website postings;
- Disseminate project information through participation in presentations and public events and distribution of publications;
- Encourage media coverage of project-related issues, activities, and accomplishments; and
- Develop and improve educational materials such as displays, electronic presentations, and publications.

The Chariton Valley Biomass Project is sponsored by Chariton Valley RC&D, Inc. in partnership with Alliant Energy, assisted by Energy Research Corporation, Iowa Department of Agriculture and Land Stewardship, Division of Soil Conservation, Iowa Department of Natural Resources, Iowa Energy Center, Iowa Farm Bureau Federation, Iowa State University, Iowa State University Extension, Counties of Appanoose, Lucas, Monroe and Wayne, John Deere Works, Leopold Center for Sustainable Agriculture, National Renewable Energy Laboratory, Prairie Lands Bio-Products Inc., R.W. Beck, Soil and Water Conservation Districts of Appanoose, Lucas, Monroe, and Wayne Counties, USDA Farm Service Agency, USDA Natural Resources Conservation Service, U.S. Department of Energy, Oak Ridge

National Laboratories, Vermeer Manufacturing Company, and Foster Wheeler.

## Approach and methods

*Press coverage* Project organizers worked with area newspapers, television, and radio in an effort to reach the general public. Agricultural publications were used to target the agricultural reading community.

*Project signage* Four sets of signs were developed. The first set identified switchgrass fields of cooperating producers. The second set identified project sites in Monroe and Lucas counties, including the CRP demonstration site in Monroe County and the fertility and variety trials at McNay Research Farm in Lucas County. A third group of signs directed cofire tour participants to appropriate locations at Alliant's power plant. A fourth group of signs installed at Rathbun Lake explained the water quality benefits of growing switchgrass.

*Project displays* Two exhibit units were purchased for use at events, meetings, and conferences. The tabletop display and the large (10-

foot), free-standing exhibit were used at events to explain the project to the general public and agricultural audiences.

*Project brochures* A brochure was specifically created to highlight the activities of the switchgrass producer organization, Prairie Lands Bio-Products, Inc. It was used to generate additional producer support and involvement in the project and to promote growing switchgrass on marginal ground in southern Iowa.

*Project field days and meetings* Cofire tests were conducted at the Alliant Energy's Ottumwa Generating Station. Results from the tests will be shared at two one-day workshops; the first for the energy industry and the second for the agricultural community.

Switchgrass variety and fertility trials at ISU's McNay research farm were featured at the farm's annual field day.

*Project web site* A web site was established to feature project activities. Links to partners' web sites were also provided.

*Project PowerPoint* A basic PowerPoint presentation with an overview of project activities

**Question:** *Is the production and use of switchgrass for biomass to generate electricity technically and economically feasible?* **Answer:** *Establishment and management practices to produce switchgrass for biomass are well developed. Tests conducted at the Ottumwa Generating Station to date have determined that there is no technological barrier to using switchgrass as a fuel to generate electricity. The costs of production for switchgrass biomass and yields in southern Iowa are well documented. The economic feasibility of using switchgrass as a fuel to generate electricity will depend on public policy, i.e., use of land in the Conservation Reserve Program and the renewable energy tax credit.*



**Biomass information display used at county fairs.**

was created and modified for each event and for each target audience.

## Results and discussion

Specific information and education activities performed during the Leopold Center's four years of support included: more than 13 dozen news reports and articles; the distribution of 1,500 sets of demonstrated fact sheets; three issues of the project newsletter; 19 project-related publications; 19 project displays; and a project web page. In addition, 36 presentations have been delivered to nearly 20,000 professionals with public agencies, representatives of private organizations, and landowners. A total of 27 project field days, demonstrations, and meetings have been conducted for 900 participants.

## Conclusions

The majority of the information and education activities outlined in the original proposal were successful. Some modifications were made to ensure the most effective transfer of informa-

tion.

Press releases generated additional requests for interviews and information. An Associated Press (wire service) article resulted in calls from CNN and mentions of the project by radio personalities Paul Harvey and Rush Limbaugh.

The original project slide show was replaced by a PowerPoint presentation that was easily updated and shared with partners.

The project web site was a more efficient way to report on recent activities than the project newsletter. In the future, the Internet site will be updated on a regular basis to reflect increasing web site usage by the general public.

Project displays were helpful in reaching much larger audiences than anticipated. Information on the displays could be edited and reformatted easily with current data.

The information and education activities have proved essential to the successful development of the biomass project.

For more information contact Dora Guffey, Chariton Valley RC&D, Centerville, Iowa 52544, (641) 437-4376, e-mail dguffey@cvr.cd.org