



*Warm season grass offers many potential uses for farmers*

### Uses for warm season grass

In addition to pellets, warm season grasses are showing value as a bedding material for chickens and horses. The new Association of Warm Season Grass Producers (AWSGP) has been expanding the growth and markets for their use, reaching businesses across the US and Canada.

### Grass - fuel of the future

A fuel like grass which can be grown in 70 days versus twenty years for a tree to grow to maturity is much more renewable. This has been a great beginning. Grass is becoming a growth industry.

### Contact for grass Info

Specific questions about grass and grass heat, contact: Will Brandau, [willbrandau@gmail.com](mailto:willbrandau@gmail.com). Or, phone: (570) 814-0195.

*PNERCD is an equal opportunity provider and employer.*



## Who We Are

### About us

PNERCD is a ten-county non-profit organization that brings together people, resources and projects to achieve responsible use and conservation of our region's natural, community, and economic resources.

### Contact us:



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### Partners & supporting agencies

- County conservation districts in nine counties participated, including Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike and Wayne
- Penn State Cooperative Extension in Schuylkill County
- Association of Warm Season Grass Producers
- US Department of Agriculture provided a Rural Energy Development Assistance (REDA) grant to support the project
- Also appreciated are the people who contributed photos of the event

*PNERCD is a non-profit charitable organization. Contributions made are tax deductible. Go to the website for more information. [www.pnercd.org](http://www.pnercd.org)*



## Grass to Heat



Pocono Northeast  
Resource  
Conservation &  
Development Council  
(PNERCD)



*One warm season grass, miscanthus, can grow 15 feet high.*

### **Grasses used for fuel**

Even though grasses have been used for fuel in Europe for decades, that is not the case in the United States. A type of grass called switchgrass is planted as a crop. It grows to nearly 7 feet in height, providing substantial material/acre to be used as fuel. Miscanthus, another type of grass, grows to 15 feet high and provides even more yield.

PNERCDC decided to teach farmers how to create their own heating fuel by raising warm season grasses and making heating pellets from them. Farmers and rural businesses throughout the ten-county region attended the workshops.

### **What was covered in the workshops?**

Workshops were held in ten locations, generally twice per day. Each workshop included a one-hour classroom presentation on why and how to use grass to make heating pellets. Following the class, a one-hour demonstration of the process, showing grass pellets actually being made, was held outside.



### **Making grass pellets is a rigorous process**

Attendees learned that making heating pellets from grass is not a simple process. Attention must be paid to moisture content in the grass, not too wet or not too dry. In addition to moisture, temperature of the grass during the process is crucial.

Pellets are made in a pellet mill, which heats and compresses the grass material and pushes it under pressure through many holes in a metal piece called a die.



*This is an example of a pellet mill which is used to make grass pellets.*



Heating pellets can be made from any grasses (even mulch hay), although switchgrass needs to be combined with other types to be able to form a pellet.

### **Additional information on process**

For heat, the pellets are best burned in a multi-fuel stove. They leave four times as much ash as wood, but the ash is very useful on plant beds.

The grass is prepared by using a hammer mill which chops the grass into very small pieces, suitable to use in the mill.

The pellet machine used in the process was powered by a tractor, using a power take-off. Other configurations for power include a combustion motor, electric motor, or direct electrical power.

The type of mill used in the project could cost from \$3,000 up, depending on expected use and where it is purchased. The volume of pellets to be made by the machine determines how heavy duty it must be.

Total machinery costs are not high, and necessary equipment sometimes is already at hand. Sharing equipment would be feasible.