

Reed Canary Grass Pellets: A Home-Grown Heating Fuel for the EUP



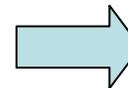
Reed canary grass is a weedy species that grows prolifically in the local clay lake plain. It's a perennial plant so does not have to be replanted, nor does it require herbicides or insecticides.



We harvested a local field in early November, 2008. When harvested in the late fall, it requires no fertilization. Yields average more than a ton per acre in our area.

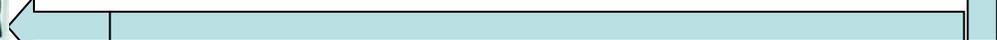


The material is ground to pass a 1/4" screen before processing into pellets. We used a small diesel operated hammer mill. The material requires no further drying and thus little additional energy for processing at this stage.



The ground material is then pelletized. We used a small pellet mill that attaches to a tractor's 3-pt hitch and runs off of a PTO. Pellets were briefly air dried and required no further processing. We are still experimenting with various pellet recipes, but two that have worked well are 1). adding a small amount of corrugated cardboard for binder and a small amount of used fryer oil as a releasing agent and 2). using spent brewer's grain (thanks Tahquamenon Brewery for the grain).

The result: an economical, environmentally friendly source of heat for homes, shops or other structures.



Pellets then go into the stove. Grass pellets must be burned in a multi-fuel stove. Wood pellet stoves are not designed for the higher ash content of grass.

This project was funded by the MI Biomass Energy Program (MBEP) of the Dept. of Energy, Labor and Economic Growth (grant # PLA-09-36), using funds from the DOE State Energy Program. It was designed to demonstrate the use of reed canary grass, an abundant, weedy species in our area, as a stock for making pellet fuel. In this phase of the study, we harvested reed canary grass from a local field in late fall, made the pellets in a small pellet mill and are demonstrating the burning of those pellets in a multi-fuel pellet stove. The stove was purchased from Soo Fireplace, Sault, MI. The pellet mill was purchased from Pellet Pros, Kewanee, IL (no MI vendors were found).

The previous phase of the study (also funded by MBEP/SEP funds, grant # PLA-07-48) established the feasibility of using reed canary grass as a pellet fuel stock. That study found that we can obtain 32x more energy from the pellets than it takes to harvest the grass and produce the pellets. Based on an average of 6 fields in the EUP, 3 acres of reed canary grass would make enough pellets to replace 800 gal of propane. Reed canary grass is a sustainable source of heating fuel, does not compete with food production, and, compared to use of fossil fuels, reduces release of greenhouse gasses. This source of energy can also enhance the economics of our region. Thanks to Justin Wilson, LSSU student volunteer project assistant, and LSSU Physical Plant for help with the project.



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