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AN ASSESSMENT OF FARM SCALE BIOMASS PELLETING IN THE NORTHEAST

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ABSTRACT

Farm scale pellet production is a promising opportunity for farmers and landowners interested in producing a renewable biomass fuel. However, the true costs and performance of these systems in a farm setting is not fully understood. A feasibility analysis was carried out on the farm-scale switchgrass production operation at Wood Crest Farm near Berwick, PA as a representative example of operations in the region. Farmer interviews and direct measurements of equipment performance, energy use, and labor requirements were recorded for all stages of the operation. Results indicate that the production of pellets at this facility costs \$98 per tonne, excluding labor, equipment and land purchase costs. As such, this represents a "bare bones" operating cost. Including the cost of labor brings the cost to about \$307 per tonne. Thus, production may only be economically feasible when land, equipment, and labor are available at marginal or reduced cost. Every joule of energy input into the operation yielded 7.8 joules of energy in the pellet fuel. There appears to be potential to reduce operating costs by increasing pelletizer yield and/or automating pelletizer operations - two opportunities for engineered solutions in this sector that can render the operation financially viable even when labor costs are included. On-farm pelleting in the Northeast US appears to have potential to be cost competitive with commercial wood pellets in select scenarios, and has the potential to be more widely applicable if modest improvements are made to process efficiency.

KEYWORDS

Biomass, Pelleting

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