



Woodstock Nutrient Management Study

Woodstock, Connecticut

Northeast Connecticut has an active dairy farming community. Manure nutrients must be agronomically and economically managed to maintain sustainable farming operations and protect local water resources. However, some farms in this region are limited from expanding or have the potential to produce more manure than can be applied on the land available to them. The Eastern Connecticut Resource Conservation and Development Area, Inc. (ECRCDA) is working with the Woodstock area farming community to investigate manure management options with the potential to both produce an income stream for the farmers and reduce the nutrient load in the local watershed. Two such options are composting, which provides a value-added product and provides a method for moving manure nutrients into non-dairy farm markets, and anaerobic digestion, which produces biogas that can be used as a renewable fuel for heat or power generation.

The ECRCDA and the Connecticut Department of Environmental Protection (CTDEP) coordinated and funded a feasibility study to evaluate composting or anaerobically digesting dairy manure at a regional facility in the Woodstock area. Conceptual designs, and associated costs were developed for the following alternatives:

- Anaerobic digestion at a regional facility
- Composting at a regional facility
- Composting of digested manure at a regional facility
- Use of local organic waste (food waste, horse manure) to improve the economic viability of the facility

The revenue generating ability of the proposed facilities was evaluated through market analysis of composting products and energy costs. An evaluation is also being conducted to identify local food waste producers who could benefit from alternative disposal options. Incorporating locally produced food waste into the regional facility increases the financial viability of the project while also supporting the CTDEP's initiative to increase recycling and disposal of this material.



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Project at a Glance

Background

The ECRCDA, Natural Resources Conservation Services, and the Connecticut Department of Environmental Protection have been working with the farming community to meet the concentrated animal feeding operations (CAFO) rules. Statewide, farms generate more manure than can be agronomically managed. This study focused on dairy farms in Woodstock, CT and evaluated feasible options for nutrient management. This study was funded in part by the Connecticut Department of Environmental Protection through a United States Environmental Protection Agency Clean Water Act Section 319 Nonpoint Source Grant.

Challenges

To identify viable options for dairy farm manure, including beneficial reuse strategies that can be implemented as a cooperative effort. The manure management alternatives must maintain the economic viability of farming in the region, while also being environmentally sustainable.

Solutions

The feasibility of establishing either a regional composting facility or an anaerobic digestion facility were assessed based on manure volumes, available technologies, the market value of finished compost product, and potential digester energy production.