

COMPOSTING

BIODRYING DAIRY MANURE

Mar-Bil Farms, Bovina Center, Delaware County

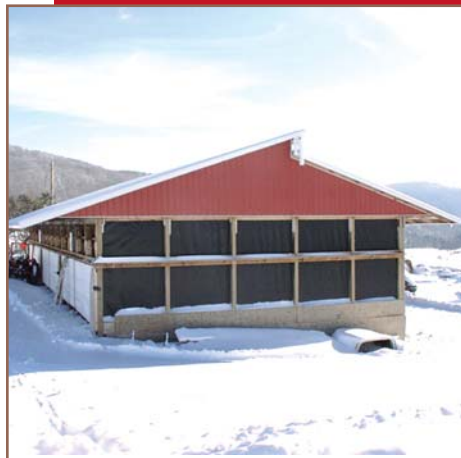
PROJECT DESCRIPTION

Background: Manure handling systems on small to medium farms is a concern in the New York City watershed, in which pathogen control and reducing phosphorus export are environmental priorities. Solid manure handling and storage has a much lower risk of catastrophic failure compared to liquid systems. Composting has been proposed for years as one of the best methods to treat dairy manure and there are many advantages to traditional composting. The resultant product is low in moisture and odor-free. The product can be marketed off-farm for a price between \$5 and \$30/yd.³, turning the treatment system into a benefit for the farm. Selling the compost off-farm also helps reduce the amount of phosphorus applied to the fields. Composting reduces manure volume and weight, allowing farmers to transport the manure farther away and distribute nutrients more evenly over the land base.

There are a few disadvantages to traditional composting as well. Dairy manure is too wet to compost directly from the barn. Dry amendment must be bought and mixed with the manure to compost. Wet and cold weather affects traditional composting, making it a more difficult task in the winter.

The Solid Aerobic Biodry System is a static pile composting facility on an 80-cow farm, built in the New York City, Catskill watershed in the spring and summer of 2001. This system uses dry recycled compost as one amendment. A roofed structure reduces rain and snow falling in the composting bays to improve the moisture removal process. Fans and the heat of the compost drive moisture from the piles. A computerized system controls the temperature and optimizes the airflow to reduce moisture in the compost.

Goal: To maximize moisture loss while minimizing the cost and time of active composting. The computer program is designed to allow the compost to reach its optimum temperature quickly. After reaching optimum temperature, the program runs the fans as much as needed to drive off moisture, while maintaining the optimum composting temperature of the pile. When the pile starts to lose its energy, the fans are set by the program to run continuously to complete the drying process.



Biodrying building



Compost while being aerated inside biodrying building



Computer control system

CORNELL

PRO-DAIRY



NYSERDA

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