

ANAEROBIC DIGESTION

With Bedding Produced from Composted Dairy Waste

Curtin Dairy Farm

Cassville, NY

OBJECTIVES

The owners of Curtin Dairy are concerned with being good neighbors to the residential homeowners surrounding their large dairy farm. The digester will address their three primary concerns:

1. Reducing the negative environmental impacts (primarily odors) of land application of dairy wastes.
2. Significantly reduce the high cost of purchased bedding, while increasing the quantity of safe bedding per animal.
3. Reduce the dependence on fossil fuels for space and water heating, and for grain drying.

DESCRIPTION OF SYSTEM

The proposed system features a manure reception pit that will feed two manure treatment streams. The first stream will be pumped to a solid/liquid separator. The liquid effluent from the separator will return to the reception pit, while the solids will be transferred to a covered compost facility. The second stream will be pumped to a hard-top digester with a 15-day retention time. Later effluent from the digester will be pumped to a long-term storage for application to cropland.

Biogas from the digester will have several uses on the farm:

1. Preheating of the manure before it enters the digester
2. Maintaining digester heat
3. Heating a thermal storage area under the floor of the compost building in order to expedite thorough composting of manure solids year round
4. Providing fuel for water and space heating in the milking center
5. Providing fuel for an absorption refrigeration system for milk cooling
6. Providing fuel for on-farm grain drying

OUTCOME

The compost facility will produce more than 1,300 ft.³/day of pathogen-reduced, safe bedding, saving at least \$100,000 in annual bedding costs. Recycling waste as bedding will eliminate the need to spread over 3,000 tons of dry matter annually, saving significant fossil fuel. In addition, at least \$40,000 in annual fossil fuel expenses will be saved by substituting biogas for purchased fossil fuels in the milking center. The proposed system will allow Curtin Dairy to meet all requirements of the existing CAFO plan, while dramatically reducing neighbors' exposure to manure odors and other environmental concerns.

Contact Information: DLtech, Inc. (607)266-6401 dtech@clarityconnect.com



"We want composted bedding."



Curtin Dairy, Cassville, NY.

"The greatest concerns facing Curtin Dairy are odor control and reducing bedding costs."

-Jack Curtin
Curtin Dairy

