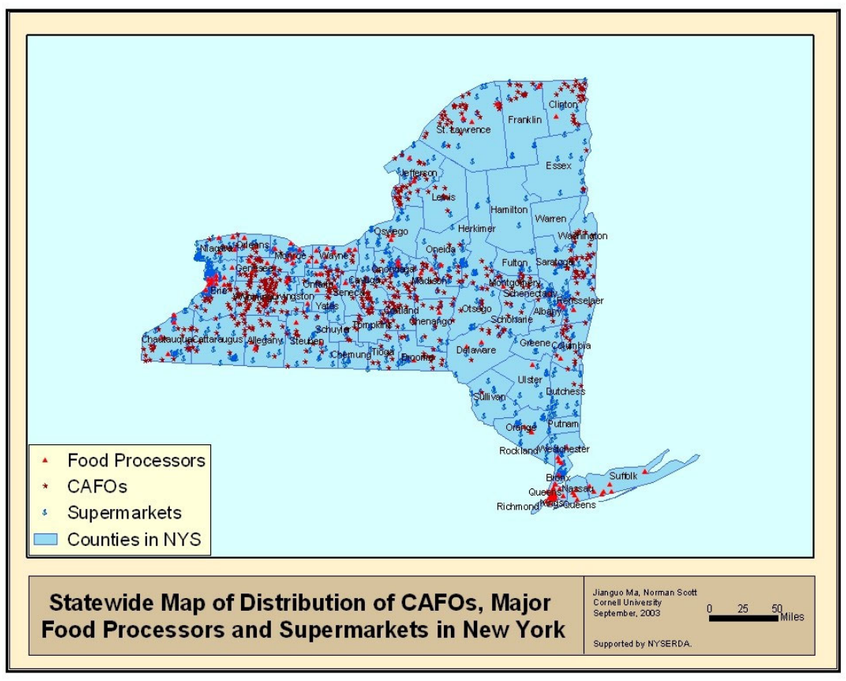
ANAEROBIC DIGESTION

Siting Anaerobic Digesters to Accept Food Waste and Animal Manure in New York State



Statewide Map of Distribution of CAFOs, Major Food Processors and Supermarkets in New York

Addition of Food Waste to Reception Pit of an Anaerobic Digester at Matlink Dairy Farm.

Tipping fees from receiving food wastes can increase the profitability of anaerobic digestion systems.

OBJECTIVES

The goal of this study is to explore the potential for using animal manure and food wastes as renewable energy resources in New York State. The specific objectives are:

1. Quantify the production of animal manure and food wastes from concentrated sources in New York State
2. Estimate the potential energy (methane) that could be released from these organic wastes by anaerobic digestion
3. Determine the optimal locations for centralized anaerobic digesters using a geographic information system (GIS).

PROJECT DESCRIPTION

Animal manure and food wastes, traditionally major sources of air and water pollution, can be converted into useful energy and other by-products using anaerobic digestion. Historically, one of the major constraints to using anaerobic digestion on farms is that the systems are very costly to install. Tipping fees from receiving food wastes can increase the profitability of anaerobic digestion systems. Centralized anaerobic digesters will be more profitable if they are located at optimum distances from the sources of manure and food wastes. The data generated and tools developed in this research are expected to contribute to the future development of using organic wastes for distributed generation of electric power and heat in New York State.

OUTCOME

The results will be useful to policy makers, the public, bioenergy investors, farmers and food wastes generators. The completed report, database and GIS programs will guide waste planners, haulers, entrepreneurs and others to consider almost any combination of commercially generated organic wastes in New York. They can be used to facilitate decisions about how best to target wastes for collection, which generators to target, how to structure collection routes and infrastructure, and where to site centrally located anaerobic digesters.

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CORNELL PRO-DAIRY NYSERDA'S 5th Annual Innovations in Agriculture NYSERDA