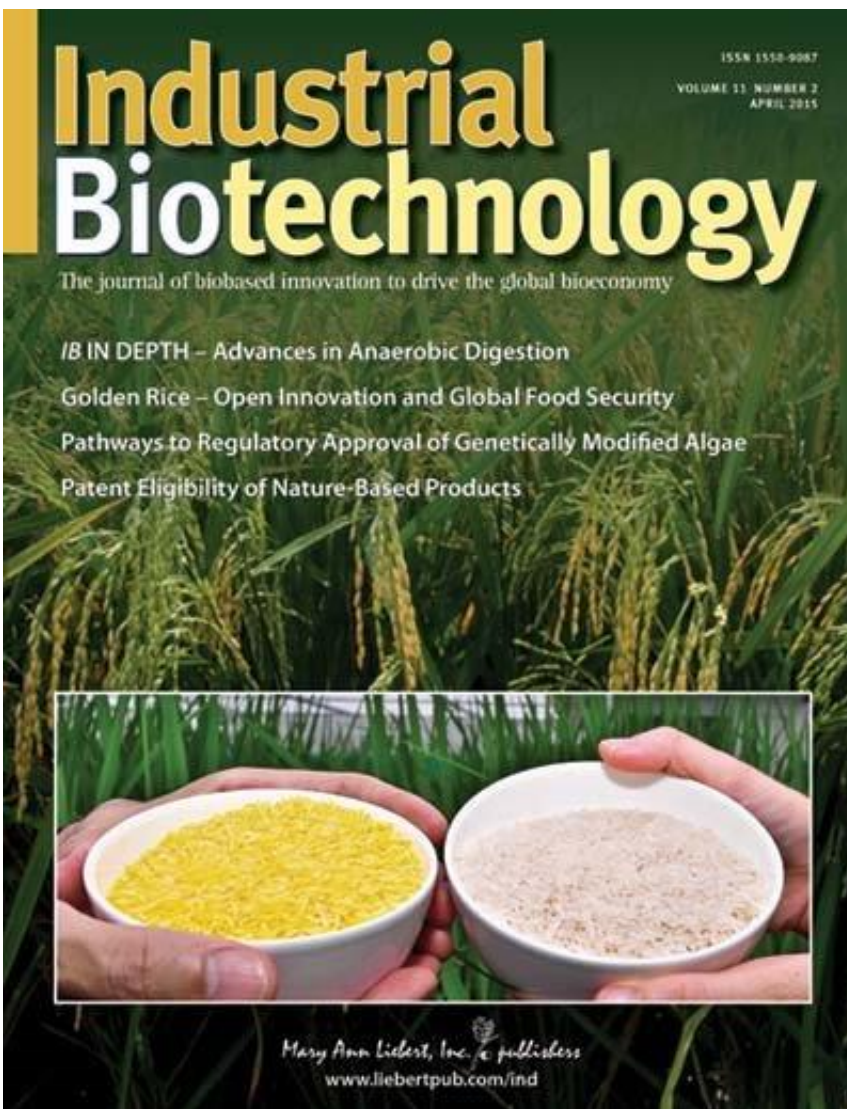


Anaerobic co-digestion of farm-based manure, food waste, are there benefits vs. landfilling?

May 5 2015



Credit: Mary Ann Liebert, Inc., publishers

Based on a comprehensive life cycle analysis comparing the environmental impacts and economic outcomes for managing manure and food waste produced on a dairy farm, researchers found that anaerobic co-digestion of the waste products had substantial cost, energy, and environmental benefits compared to digestion of manure but disposal of food waste in a landfill. A detailed discussion of the potential for bioenergy production, increased profitability, and reductions in global warming and smog is presented in an original research article in *Industrial Biotechnology*.

Rui Che, M. Melissa Rojas-Downing, Yuan Zhong, Christopher Safron, and Wei Liao, Michigan State University, East Lansing, report that a calculated 25-year net value of more than \$8.4 million for co-digestion of dairy farm manure and food waste, which greatly exceeds a loss of \$7.5 million if only the manure undergoes [anaerobic digestion](#) and [food waste](#) is landfilled. The authors report the results of their economic analysis and the effects on [global warming](#) and air and water quality based on co-digestion at a hypothetical [dairy farm](#) in the article "Life Cycle and Economic Assessment of Anaerobic Co-digestion of Dairy Manure and Food Waste."

The article is part of an IB IN DEPTH special research section on Anaerobic Digestion led by Guest Editor Wei Liao, PhD. The issue also includes an Overview by Dr. Liao entitled "Anaerobic Digestion: A Potential Energy and Environmental Solution" and two Review articles: "Anaerobic Digestion-Based Biorefinery for Bioenergy and Biobased Products" by K.C. Surendra et al.; and "Anaerobic Digestion Potential of Coproducts Associated with Ethanol Production from Sweetpotato: A Review," by W.A. Mussoline and A.C. Wilkie.

"Efforts to take organic waste materials and find added value creates

exciting opportunities for *Industrial Biotechnology* innovation and commercialization even when applying existing and familiar technology," says Co-Editor-in-Chief Larry Walker, PhD, Biological and Environmental Engineering Department, Cornell University, Ithaca, NY.

More information: The article is [available free on the *Industrial Biotechnology* website](#) until June 1st, 2015.

Provided by Mary Ann Liebert, Inc

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