WASHINGTON STATE UNIVERSITY – PULLMAN, WA

CENTER FOR SUSTAINING AGRICULTURE AND NATURAL RESOURCES AND DEPARTMENT OF BIOLOGICAL SYSTEMS ENGINEERING

FOCUS OF RESEARCH

Washington State University's Center for Sustaining Agriculture and Natural Resources (CSANR), working with researchers/engineers from the Department of Biological Systems Engineering, are developing and evaluating bioproduct/bioprocessing technology that can address environmental needs of organic waste management while establishing value-added enterprises in the context of supporting sustainable farming systems.

CSANR views anaerobic digestion (AD) as an important technology for organic management, but more importantly as a core unit of bio-refinery operation. CSANR research includes the bio-refinery approach through the collection of multiple waste streams, separating and selectively treating for more efficient processing while also harnessing interconnected synergies and production of multiple co-products and revenue streams.

RESEARCH BENEFITS

CSANR has supported extensive efforts in improving AD technology for:

- multiple organic wastes,
- co-digestion of manure with outside organics,
- development and demonstration of novel nutrient recovery technologies (nitrogen and phosphorus reclamation) for production of concentrated slow release bio-fertilizers,
- development and demonstration of novel biogas purification systems,
- integration of pyrolysis/chars within an AD platform,
- reporting of reliable techno-economic and feasibility studies related to farm-based AD projects, and
- technical support for farmers, rural communities, project developers, and environmental agencies.

The CSANR research focuses on the next generation of AD that is centered around a system of technologies creating economic and environmental benefits for farmers and the community.

Photo: A CSANR anaerobic digester research project in Washington State.

"With emerging pressures related to nutrient management and low received electrical pricing, a new business model to AD development is required, one producing multiple value-added co-products, renewable natural gas, and bio-fertilizers from nutrient recovery integration."

— Craig Frear
Washington State University

ANAEROBIC DIGESTION: BEYOND WASTE MANAGEMENT VIDEO

Click on the image below or type the URL web address (http://www.youtube.com/watch?v=Ei49Z4oeUtY) into an internet browser to watch the YouTube video.

For additional publications and information, visit the CSANR website at: http://csanr.wsu.edu/anaerobic-digestion/.