ABSTRACT

Working with Private Industry to Turn Food Waste into Methane

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Starting in 2007, OARDC entered into a partnership with *quasar Energy Group* to combine research and engineering efforts to produce methane gas from various feedstocks. *quasar* is an Ohio company with German roots located in Cleveland, Ohio. Working with the Department of Food, Ag, and Biological Engineering, *quasar* was provided with office and lab space to consolidate their testing and engineering operations into one location.

The Wooster location was selected by *quasar* for several reasons. The company's mission is to develop an industry. Ohio and the Midwest with the combination of urban and agriculture have an abundant and varying supply of feedstocks needed for methane generation (manure, crop residue, food waste, and food processing waste). The area also has a manufacturing base in which to draw upon for the construction of digester plants and the development and manufacture of equipment needed to process waste into biogas. OARDC provides access to research and an opportunity to commercialize technological advances in methane digestion.

With help from OARDC and the Ohio Bioproducts Innovation Center, funding was received to build a full scale anaerobic digester on the OARDC campus. This digester is not only producing methane gas but is also a $4 million model *quasar* is using to develop other digesters across the state and country. Since its construction, *quasar* has built two other digesters in the state and has received grants to help in constructing an additional nine.

With a working digester in place, OARDC and *quasar*, along with other Ohio companies, have been awarded several grants including $2 million from the Ohio Third Frontier fund to further research and commercialization of digester technology. The Third Frontier Program is a voter approved program that supports creation of technology based products, companies and industries. This award was granted to continue the development of integrated anaerobic digestion systems that combine liquid and solid state digestion technologies to increase efficiency.

Part of the partnership quasar and OARDC involves sharing lab space in the Bioproducts and Bioenergy Research Lab located on the OARDC campus. In this lab OARDC staff and those from *quasar* not only share space but also equipment. This lab has the capability to evaluate feedstocks for their potential gas production and to develop the proper mix of products to maximize methane production.

Anaerobic digestion is an emerging industry worldwide and working with *quasar* and other companies, OARDC is helping develop technology to aid in its development.