QUARTERLY PROGRESS REPORT

March 1, 2010 – May 31, 2010

PROJECT TITLE: Diverting Food Waste from Landfills

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COMPLETION DATE: August 31, 2010 **PHONE NUMBER:** (352) 392-8699

PROJECT WEBSITE ADDRESS: http://biogas.ifas.ufl.edu/foodwaste/

OBJECTIVES:

1. Estimate food waste production throughout Florida.
2. Develop protocols for effective pretreatment of food waste for anaerobic digestion.
3. Construct a portable digester for professional and public outreach.

WORK ACCOMPLISHED DURING THIS REPORTING PERIOD:

Objective 1:

We have been in discussions with DEP officials to learn how waste production data is calculated throughout the state, in order for us to then determine how food waste production is reported as a subset of municipal solid waste. This will give us a platform from which to then further examine these numbers. Waste production (including food waste) is reported to DEP by individual counties using a spreadsheet provided to them by DEP. To calculate these numbers, the counties use either the WasteCalc program from DEP (WasteCalc) or the counties' own waste composition studies. DEP stated that approximately half of all counties use the WasteCalc program. The WasteCalc program is a tool provided by DEP and was developed from a waste composition study conducted in Pinellas County under an Innovative Recycling Grant. While the WasteCalc is a handy tool, DEP understands that the numbers might not be the most accurate. We are currently reviewing this composition study to understand the basis of WasteCalc. We will then compare the numbers generated by WasteCalc to other sources of food waste generation numbers.

One issue with food waste is that there is very little food waste recycling reported. Only 1% is reported for Florida. We gained insight into this through our conversations with DEP. Recycling numbers are reported to the counties from the DEP to include in the waste reporting spreadsheet. These recycling numbers are derived from DEP permitted recycling facilities. As there are no DEP permitted food waste recyclers in Florida, there are no food waste recycling numbers reported to the counties from DEP. However, the county recycling coordinator could report food waste recycling from activities in their county, such as such food banks and backyard and community composting. This could explain why some counties report some food waste recycling while others do not. Therefore, should all counties fully report on all food waste

recycling activities where and if it exists, the food waste recycling number could potentially be much higher.

Our next step will be to contact individual county recycling coordinators to determine how they report their waste numbers (i.e. do they use WasteCalc or their own composition studies, etc.), and if they are aware of food waste recycling activities in their counties.

From the overall food waste produced in the state, we seek to determine food waste production by different sectors of society. In order to begin this evaluation, we will be conducting food waste audits at local schools and restaurants. These waste audits will be carried out in the fourth quarter. We have selected three local schools at which to conduct these audits: Oak Hall School (a private K-12 school), J.J. Finley Elementary School (a public school), and the Loften School (a public vocational high school). Food waste produced at these schools will be normalized against student numbers and compared to other school waste audits in the state. In addition we will be conducting similar waste audits at local restaurants and comparing our results to other restaurant food waste production studies.

Objective 2:
Full-scale experiments are being conducted to determine if an in-sink food disposal is the most effective method for food waste pretreatment (as we have hypothesized). We will also examine how best to operate the disposal for in-line operation with a food waste digester.

Objective 3:
The portable digester is currently under construction and we are awaiting its completion.

INFORMATION DISSEMINATION ACTIVITIES:

- March 20, 2010
  We exhibited with a small-scale, table-top food waste digester at a local-food fundraising event in Waldo. The event was held to raise money for a non-profit commercial kitchen, which will help small farmers and food artisans to sell their food products commercially. We attended and tabled at the event in order to spread awareness of anaerobic digestion among local food service providers and to discuss the possibilities of implementing food waste digestion at the commercial kitchen, local restaurants, and small farms.

- March 27, 2010
  We gave a laboratory tour as part of Family Day for Alpha Zeta (an honors fraternity for agriculture and life sciences students). There were approximately 20 participants, which included students and their families. As part of the tour, we included discussion and demonstration of food waste anaerobic digestion and how it relates to the students' studies in agricultural and life sciences.

- March 29, 2010
  Ryan Graunke, a graduate student with the project, gave a lecture to 25 undergraduate students in ALS 3133 (Agriculture and Environmental Quality). The lecture included

discussion of food waste digestion and its role in the larger bioenergy and sustainability picture.

- April 12, 2010
  The University of Florida, Office of Sustainability held a *Florida Food Summit* on campus. We participated in the event by exhibiting with our table-top food waste digester. We received much attention from students and the public who were either attending the event or just passing by. This was an ideal venue for presenting our project because, while most of the summit was about sustainable food sourcing, we were able to complete the loop by demonstrating sustainable food waste disposal. In addition we collected food waste generated at the event for anaerobic digestion back at our laboratory.

- April 15, 2010
  We gave a field trip to 15 undergraduates in EVS 3000 (Environmental Science and Humanities). This tour included discussion of food waste digestion and demonstration of the current research we are conducting at the laboratory.

- April 23-25, 2010
  We presented food waste digestion as part of an EPA People, Prosperity and the Planet (P3) project in Washington, DC. We included our table-top digester in our display and demonstrated biogas prodution from the digester. The event included a day of judging and two days of public visits as part of the *National Sustainable Design Expo*, held on the National Mall. This event gave us the opportunity to discuss our project with a large number of interested individuals from around the country and the world.

- May 7, 2010
  Dr. Wilkie delivered a presentation entitled "Recycling – the Biogas Way" at the *Heart of Florida Solid Waste Working Group Meeting*, held at the Citrus County Community Center in Lecanto, Florida.