Diverting Food Waste from Landfills

Second Quarterly TAG meeting

February 15, 2010
Agenda

- Overview of website
- Updates on project
- Discussion, comments, or suggestions
- Tour of current lab activities
Project Website

- http://biogas.ifas.ufl.edu/hinkley
Project updates

- Pretreatment studies
  - Focus of pretreatment is to solve issues with pre-treating food waste alone
  - Liquefying food waste allows for use of media in the digester
  - Studying the kinetics of solubilization and acidogenesis allows optimization of digestion
Pretreatment studies

- 1st quarter: Conducted initial enzymatic studies
  - Enzymes showed moderate increase in solubilization vs. control
  - Still need to examine benefits on whole system
  - Cost of enzymes may not be justified with return
  - Solubilization may be achieved through other means
Pretreatment studies

Enzymatic Pretreatment

SCOD (g/L)

Day

0 1 2 3

iP Average
2P Average
1R Average
2R Average
Control Average
Pretreatment studies

Fresh-ground food waste

Treatment after 3 days
Pretreatment studies

• Recent experiments
  • Compared different mechanical techniques
    • Blender
    • Meat Grinder
    • Food processor
    • Homogenizer
Pretreatment studies

Results

• All pretreatment methods showed similar trends in acidification and solubilization
• Solubilization and pH stabilized after 2 days
• Blender appeared to have the most reduced particle size
• Meat grinder may be most practical for small scale/portable digester
• To be tested: in-sink food disposal
Pretreatment studies

Blender
Processor
Grinder
Current experiments

- Examining effects of different loading rates on pH and solubilization
- Will be useful when operating portable digester and determining design optimization
Project Updates

- Status of portable digester – Dr. Wilkie
Public outreach

- December 9, 2009

Food Recycling and Composting Workshop

Dr. Wilkie gave a presentation discussing food waste digestion
Public outreach

- January 24-27
  - US composting council annual conference
  - Ryan volunteered at the conference
  - Several sessions on anaerobic digestion
Public outreach

- February 9 & 11
- Undergraduate environmental science class toured our lab
Public outreach

- February 10
- Group from UF public health working in Haiti learned about the opportunities of small-scale digestion
Upcoming outreach

- February 17
  Collecting food waste from UF Green Team Captain’s meeting
- February 24
  Presenting at the annual educational fair at Newberry Elementary
- March 20
  Bringing digester to a local kitchen fundraiser in Waldo
Comments or suggestion?