

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

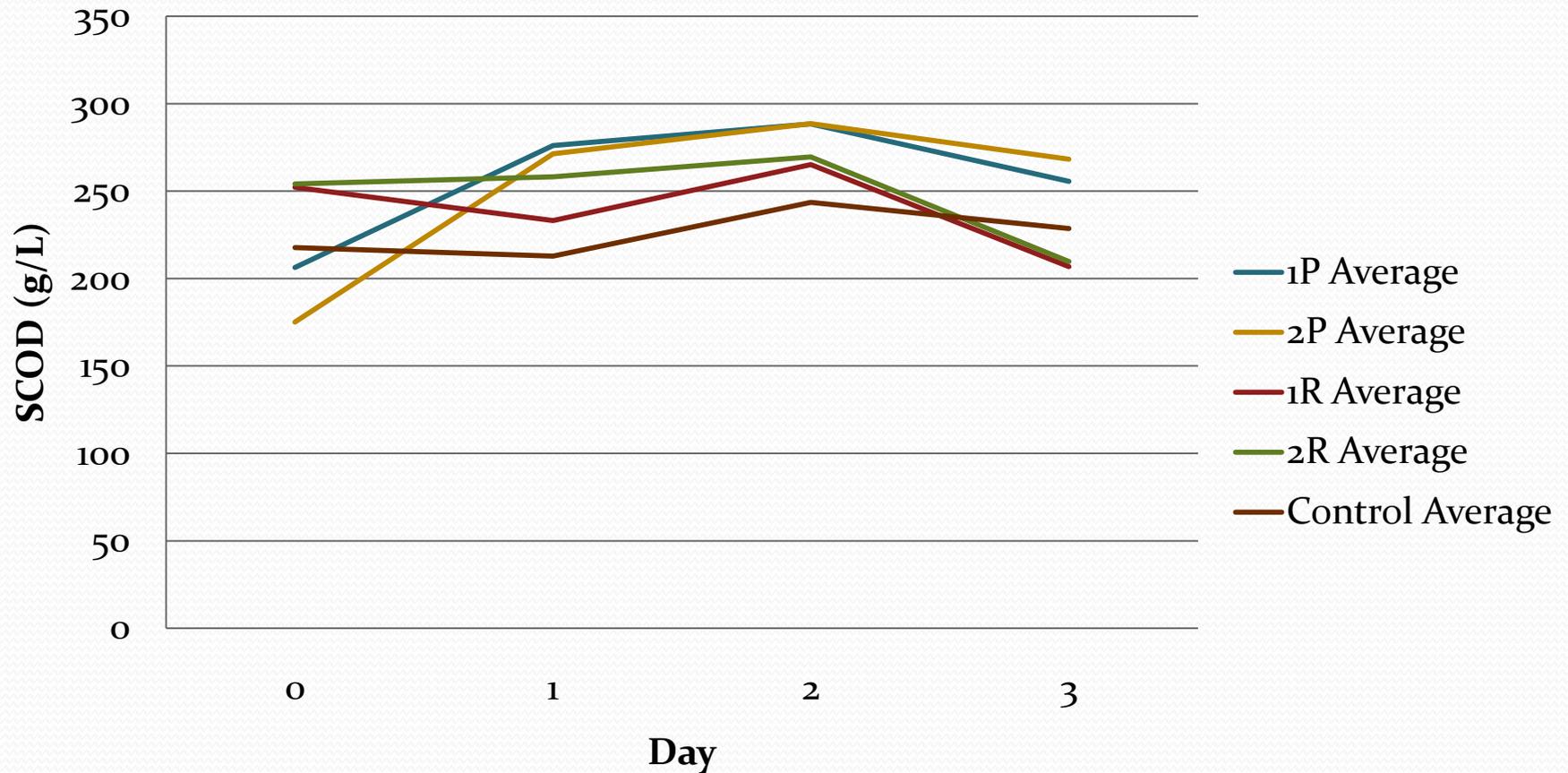
- Pretreatment studies
 - Focus of pretreatment is to solve issues with pre-treating food waste alone
 - Liquefying food waste allows for use of media in the digester
 - Studying the kinetics of solubilization and acidogenesis allows optimization of digestion

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



Pretreatment studies



Fresh-ground food
waste



Treatment after 3 days

Pretreatment studies

- Recent experiments
 - Compared different mechanical techniques
 - Blender
 - Meat Grinder
 - Food processor
 - Homogenizer

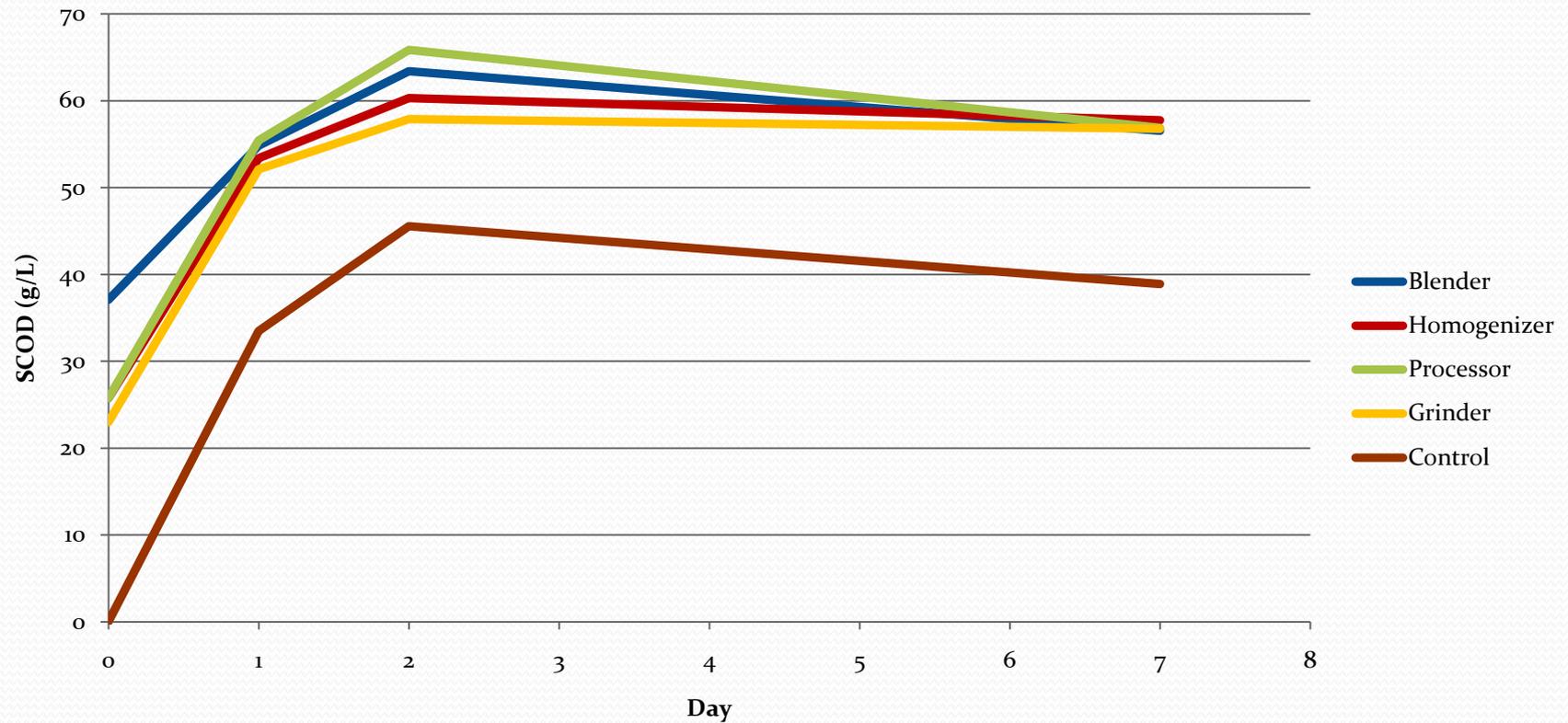


Pretreatment studies

- 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

Mechanical Treatment Solubilization



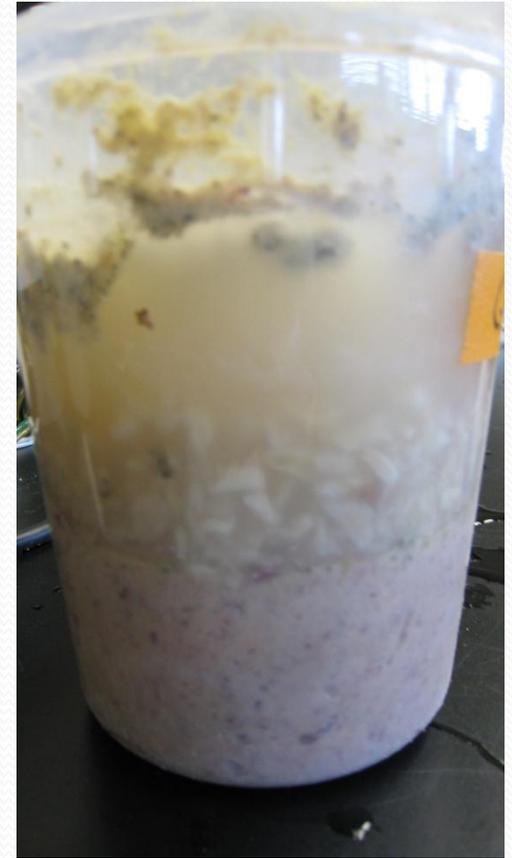
Pretreatment studies



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



US Composting
Council

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?