

# 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

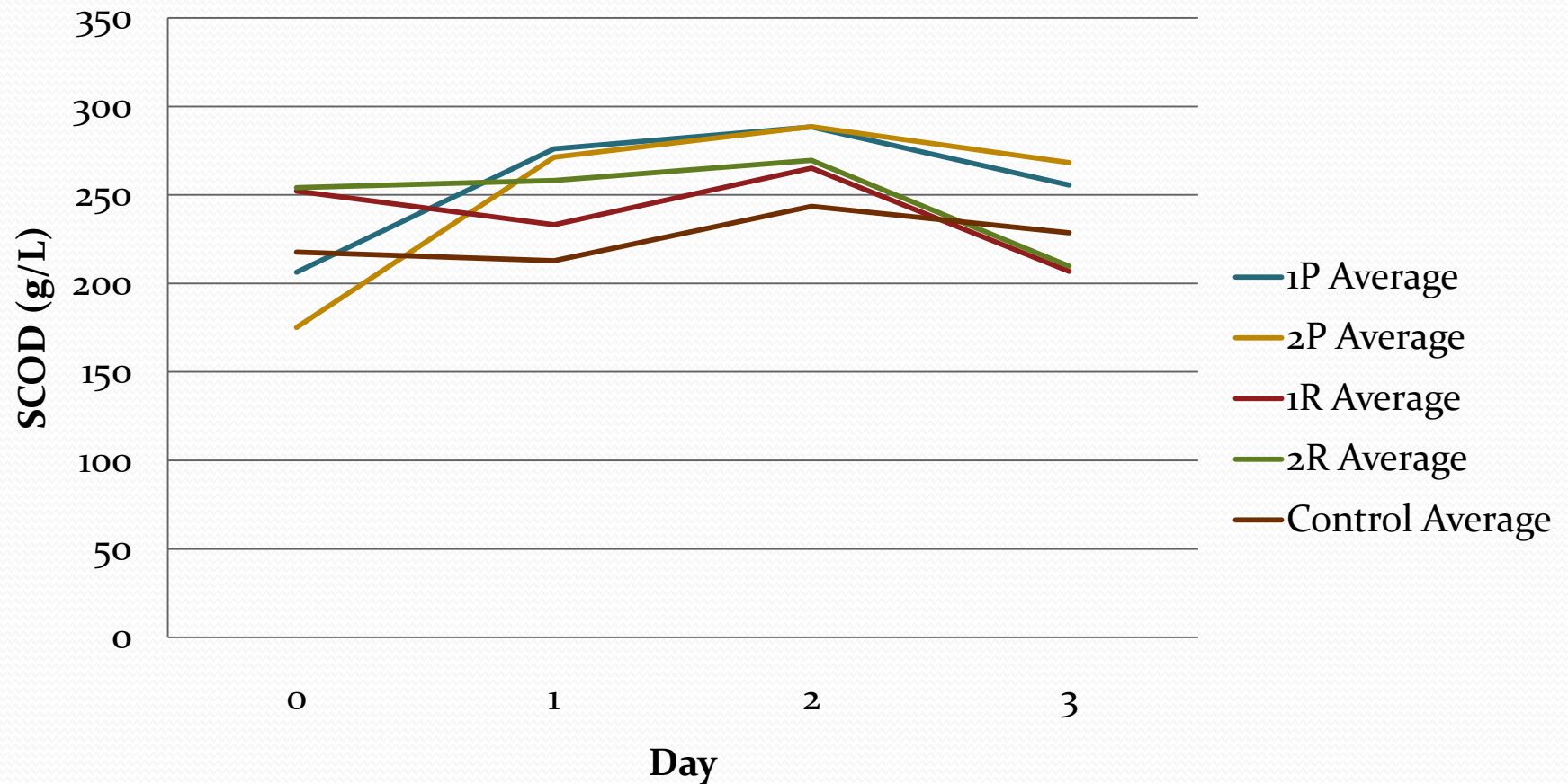
- Pretreatment studies
  - Focus of pretreatment is to solve issues with pre-treating food waste alone
  - Liquefying food waste allows for use of media in the digester
  - Studying the kinetics of solubilization and acidogenesis allows optimization of digestion

# Pretreatment studies

- 1<sup>st</sup> 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





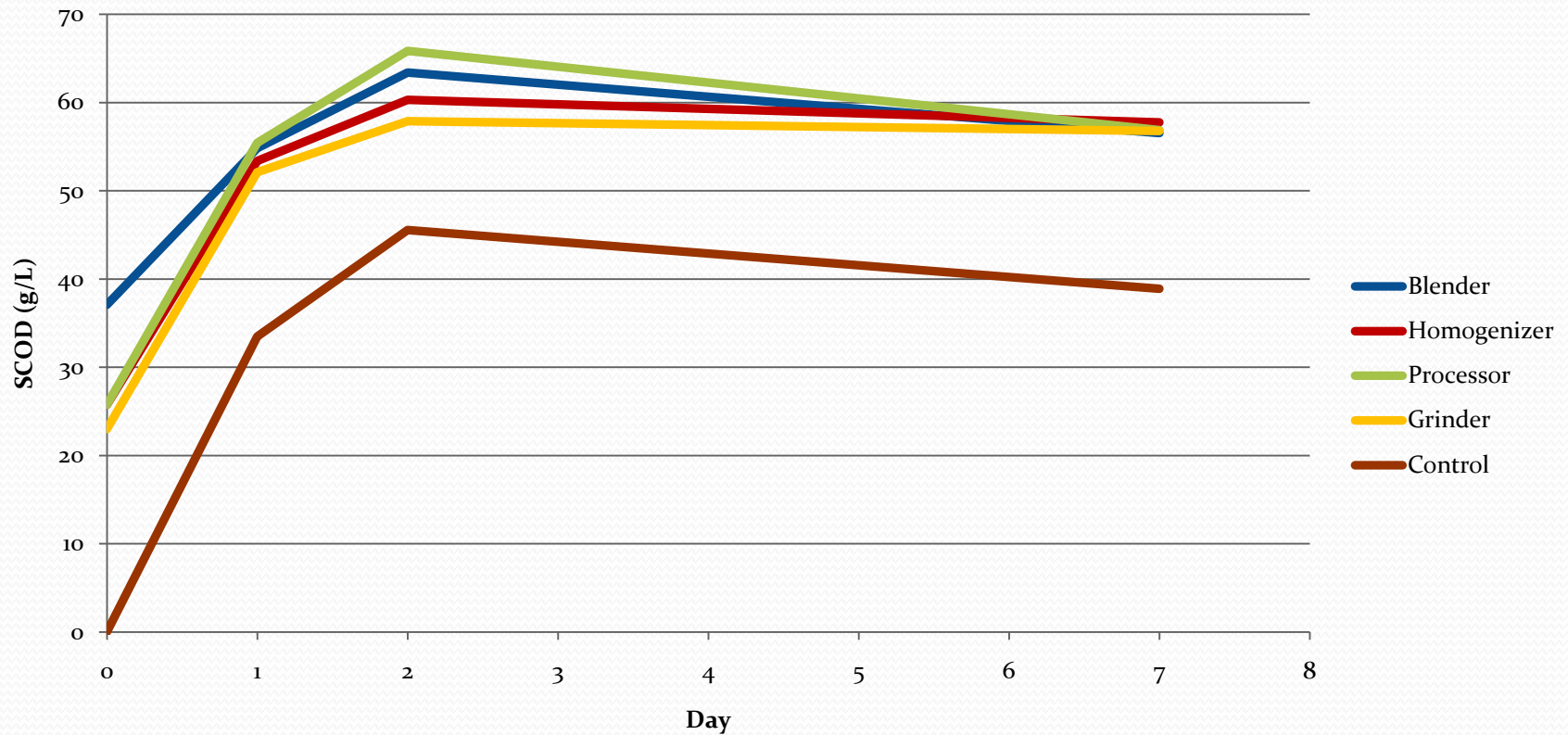
# Pretreatment studies

- 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



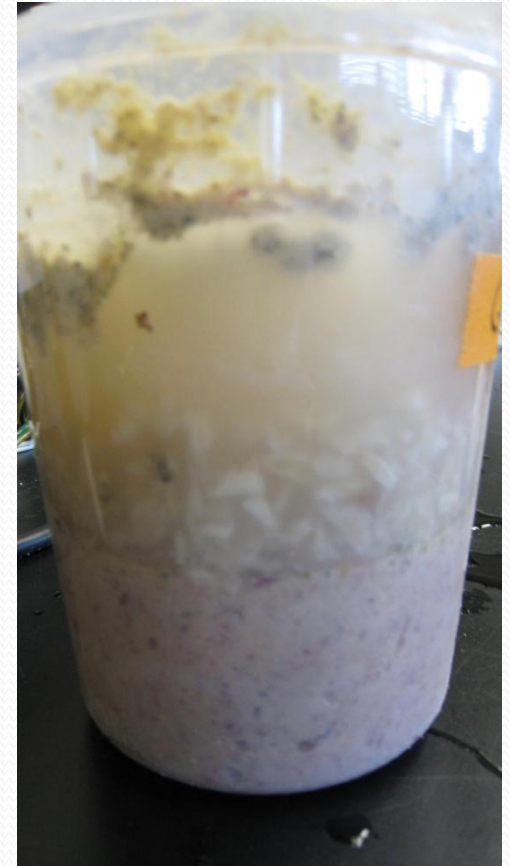
# Pretreatment studies



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?