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# Pretreatments of Feedstock for Enhanced Biogas Production

**Chair: Sam Hinton**, Technical Support Manager, ADBA

**Melanie Hecht**, Biogas Process Manager, Schaumann

**Owen Yeatman**, Director & Co-Founder, CaviMax

**James Tucker**, Industrial Business Development Manager, Huber

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# Talk Contents

- **Sam Hinton**, Technical Support Manager, ADBA
  - Introductions to the panel and the topic
- **Melanie Hecht**, Biogas Process Manager, Schaumann
  - Ensiling: protecting energy by minimising losses
- **Owen Yeatman**, Director & Co-Founder, CaviMax
  - CaviMax
- **James Tucker**, Industrial Business Development Manager, Huber
  - Physical pre-treatment to reduce wear and minimize waste disposal

# Feedstock – The Topics

- The panel will be talking about critical points of control whether it is part of;
  - The ensiling process
  - Removal of inert objects, or
  - Improving the feedstocks flow throughout the process
- The talk will look at the optimisation of feedstocks to;
  - Increase gas yields
  - Reduce processing times
  - Reduce feedstock waste
  - Improving the quality of the end products of gas and digestate



Household and commercial food  
waste reception bay

# Feedstock – What is it?

- Organic matter that is fed into the plant

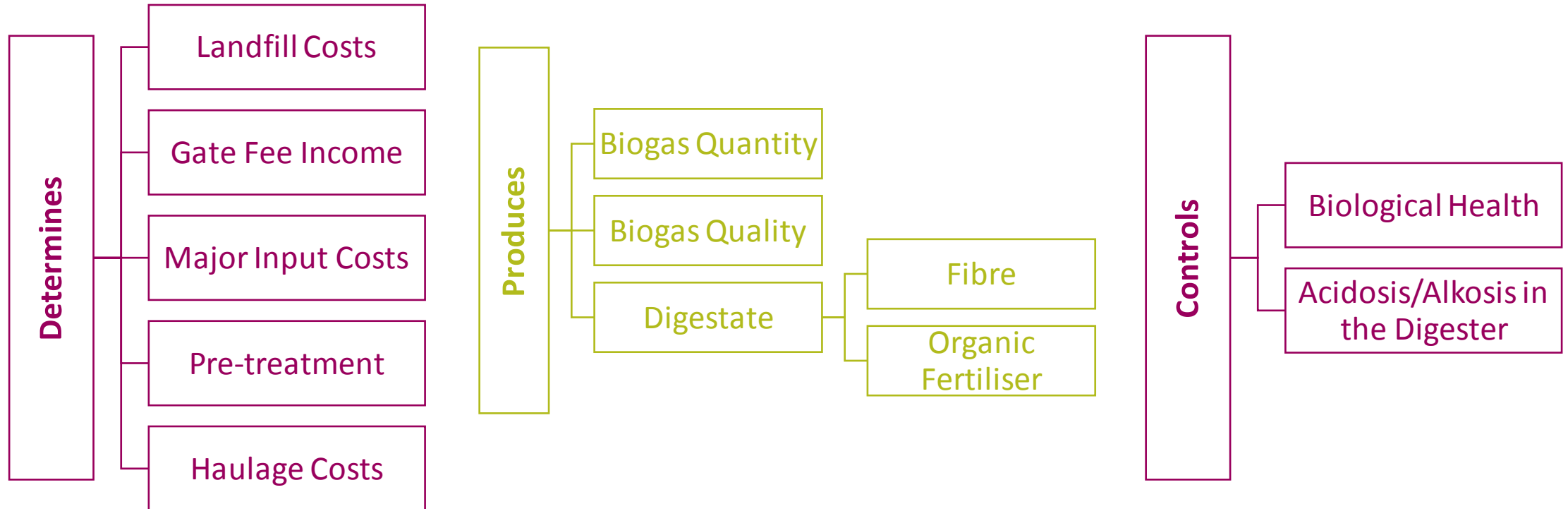
Feedstock (DM%)	Biogas Yield (Fresh/Wet)
Food Soup (18-22%)	111 m <sup>3</sup> /t
FYM (25%)	60 m <sup>3</sup> /t
60-70% Glycerine (81%)	414 m <sup>3</sup> /t
Tilda Brown Rice (92%)	421 m <sup>3</sup> /t
Rice Bran (93%)	418 m <sup>3</sup> /t
Maize (31.5%)	170 m <sup>3</sup> /t
Rye (35%)	191 m <sup>3</sup> /t
Chicken Muck (59%)	289 m <sup>3</sup> /t



The feedstock makes the biogas not the digester!

‘Biogas is the respiration by-product of the microbes in the digester eating the feedstock’  
(Practical Guide to AD, ADBA)

# Feedstock – The Importance

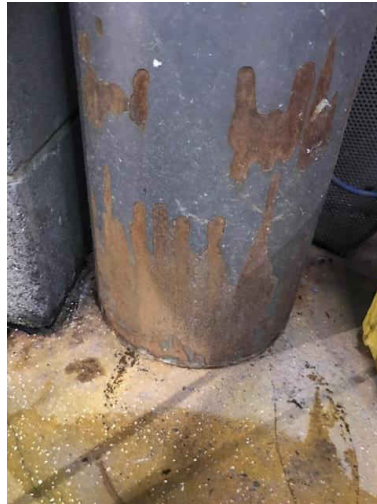


# Feedstock - Choice

- Developers and operators should ensure they understand;
  - How the material is likely to react in the digester
  - Mechanisms for minimising contamination in the feedstock; and
  - The best method to pre-process the raw feedstock into a form best for anaerobic microbes to convert it into biogas.



Chopped Beet



Grit wear



Chopper to reduce chop length of feedstock

- A digester's economic viability and effectiveness is influenced by;
  - Availability of energy within the feedstock, its variability and delivered cost
  - Amount and type of pre-processing required
  - Level of contamination in the feedstock: machinery repair and contamination costs