

Sampling Technique

- Sampling intervals in biogas plant
 - *Weekly during startup*
 - *Later, fortnightly*
 - *Monthly when the biogas plant shows a stable performance*
- For a standard biogas substrate analysis- approx. 500 mL sample volume is required
- For BMP (Biomethane potential) test
 - *sample needed-500 gms (if solid)*
 - *substate sample needed- 1000 ml (if liquid)*

Sampling Technique...cont

- Sample bottles of PP or PET make (preferably in that order) to be used
- For microbe culture test, Polystyrene (PS) make sample bottles are recommended
- Sample bottle should have a wide opening
- Rinse the substrate containing lines sufficiently before sampling
- Fill the sample bottle completely and closely air-tight it
- Cool down the sample in cold water or ice pack (preferably less than 5 °C to eliminate any gas production)
- Mark the sample with a non-water soluble sticker and note the following:
 - *Date of sampling*
 - *Sample origin (pre-F, F , post-F or, storage)*
 - *Fermentation temp. measured at the time the sample is taken*

Sampling Technique...cont

- For heterogenous substrates, its recommended to source the sample from several points
- Sample from several collection points, if possible needs to be shredded and mixed well
- Keep collected samples refrigerated ($<5\text{ }^{\circ}\text{C}$) during storage
- Preferably transport the sample within 24 hours from the sample collection
- Transport the samples using freezer pack at ($<5\text{ }^{\circ}\text{C}$) to our lab
- For long-term sample storage and transport (more than one week)
 - *you may freeze the samples using dry-ice/ ice pack (not applicable for sample that needs to undergo microbial analysis or culture test)*

Samples for micro-biological test

- All samples must be shipped
 - cold, and not frozen (use freezer packs)
- Sample should remain upright.
- Samples that are not shipped properly may be rejected by the lab



Address for sending the sample

To,

Mr. Atanu Chakravarty

Program Coordinator, MCIIE

Near. Department of Chemical Engineering & Technology

Indian Institute of Technology, BHU

Varanasi – 221005

Uttar Pradesh