THE DEVELOPMENT OF LOW-COST BIOGAS REACTOR

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Abstract

One of the possible utilisation methods for organic wastes is anaerobe decomposition (fermentation). The main product of this process is biogas which is usually used for energy purposes due to its composition (mainly methane and carbon dioxide).The residual solid material after fermentation can be used as soil conditioner.

Lab-scale fermentation can be carried out using the "*VDI 4630 – Fermentation of organic materials Characterisation of the substrate, sampling, collection of material data, fermentation tests*" standard. Based on the conditions described in the standard, a small-scale low-budget reactor system were prepared. The temperature during the holding time was controlled with water bath and the gas production was determined with fluid displacement method. A peristaltic pump was used for the recirculation of the gas to mix the base material. Furthermore, the temperatures of the environment, the water baths and the inside of each reactor was automatically registered on a data collector.

Key words: biogas reactor, fermentation, slurry