

Analysis of Methane Production from Septage Sludge of Various Age

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On-site sanitation (OSS) is widely used by approximately 71% of the total population in Indonesia. However, there is limited septage sludge emptying and treatment. To date, most treatment plants only compost their septage sludge which actually has the potential to be utilized to generate bio-methane for renewable energy. This study is aimed to analyze methane production from septage sludge of various ages in Jakarta and Depok City, Indonesia. A total of nine samples from faecal containment with various operational ages were collected. The samples were then represented in three categories, i.e. containment operating for 1–2 years, 3–10 years, and more than 10 years. The methane production was investigated by Biochemical Methane Potential (BMP) Assay for seven weeks with a mixture of Volatile Solid (VS) of substrate and inoculum of 2:1. Results showed that the methane yield of septage sludge ranged from 142 to 242 mlCH₄/gVS. Septage sludge characteristics of VS, Total Solid (TS), and COD did not correlate with faecal containment age. The containment operating less than three years has the best methane production hence nutrient recovery from septage sludge can be utilized as renewable energy potential. The result of this study can be used as a recommendation to the government in increasing the value of septage sludge treatment in Indonesia.

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