

**THE EFFECTS OF *Azotobacter chroococcum* AND *Aspergillus niger*
ON COMPOSTING SOLID WASTE OF BIOGAS DIGESTER
FROM SUGAR WASTE**

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ABSTRACT

Compost, one of kind fertilizer, is a product from partially decomposition, accelerated with the presence of organic matter that are biodegraded by microorganisms in sufficient and aerobic condition. The aims of this research are to use solid waste of biogas digester from sugar waste as material for making compost and also to know the effects of adding *A. chroococcum* and *A. niger* on fertilizer quality. *Rotary Drum Composter* is operated in batch condition with aeration volumetric rate 0,586 m³ air/day/kg at laboratory project. Variables used are the ratio sugar waste and solid waste of biogas digester 1:2 and 1:3 and also the ratio starter and solid waste of biogas digester 1:2 and 1:3 without microbes. The concentration of *A. chroococcum* and *A. niger* are 5 ml/kg solid waste mixture and 3 ml/kg solid waste mixture; 3 ml/kg solid waste mixture and 5 ml/kg solid waste mixture; 5 ml/kg solid waste mixture and 5 ml/kg solid waste mixture. Analysis consists of N, P, K level, COD, BOD, and moisture content. The best result of this research is reached in ratio sugar waste and solid waste of biogas digester 1:2, for the higher N level is the ratio *A. chroococcum* and *A. niger* 5:5 = 121.74%, for the higher P level is the ratio *A. chroococcum* and *A. niger* 3:5 = 162.07%.

Keywords: compost, sugar waste, solid waste of biogas digester, *Rotary Drum Composter*, *A. chroococcum*, and *A. Niger*.