

ABSTRACT

EFFECT OF ADDITION COCONUT PULP AND BANANA PEEL ON PRODUCTION BIOGAS FROM COW MANURE

By

ADAM FAIRUZ

Biogas is a renewable or alternative energy utilizing the decomposition process of a wide range of organic wastes that generates methane gas (CH₄). The purpose of this study the effect of the addition of coconut pulp and banana peels on biogas yield from cow dung. Parameters to be observed include: characteristics of substrates, degree of acidity (pH), temperature, biogas production and biogas yield, as well as the flame from biogas burning. This research is expected to produce appropriate technology for treating waste of coconut pulp and banana peels into value added products and scientific information on the effect of the addition of coconut pulp and banana peels to biogas. The experiment design was a completely randomized design of six treatments consecutive composition of cow dung : banana peel : coconut pulp namely A 50:40:10, B 50:30:20, C 50:20:30, D 50:10:40, E 50:0:50, and F 50:50:0 with 3 repetitions. The data were analyzed by ANOVA followed by Duncan test. The results showed that the addition of coconut pulp in the biogas composition affected on pH, C/N ratio, and biogas production, but had no effect on the temperature, and biogas yield. The increase in coconut pulp resulted in lower pH, and the C/N ratio lower, and lower biogas production. The optimum conditions for treatment with composition of 50:50:0 without the addition of coconut pulp with a C/N ratio of 21,22 and pH of 5,5-6,5.

Keywords: banana peel, biogas yield, coconut pulp, C/N ratio