

## **ABSTRACT**

### **THE PRODUCTION OF BIOGAS FROM ELEPHANT GRASS (*Pennisetum purpureum*) THROUGH THE PROCESS OF DRY FERMENTATION**

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This research aimed at understanding the production of biogas from elephant grass (*Pennisetum purpureum*) through the process of dry fermentation. This research was conducted at the Laboratory of Power, Agricultural Machinery, Faculty of Agriculture, University of Lampung in June until October 2014. The treatment in this research was a comparison between elephant grass and cow dung. Comparison of treatment A, B, and C respectively is 3:1; 4:1; and 5:1. Substrate material used in this research is the fresh, elephant grass chopped to  $\pm 15$  cm length. The substrate is production, watered every 2 days using 5 liters of water. Biogas production, reaction, temperature and ambient temperature were measured every day until the production of biogas stop. The results of this research indicate that the production of biogas in treatment A, B, and C respectively was 204 L; 258 L; and 241,3 L liters for 25 days with an average yield of treatments A, B, and C, ie 8,53 L/day; 10,75 L/day; and 10,05 L/day. The repectivaly yield of biogas treatment A, B, and C in was 12.82 L/kg, 12.95 L/kg, and 10.09 L/kg. Biogas produced was not burnt. The reaction temperature in treatment A, B, and C respectively is 31 °C; 31 °C; and 32 °C, while the average of environmental temperature is 32 °C. Treatment B is the best for biogas production through dry fermentation.

Keywords: dry fermentation, elephant grass, biogas, yield.