

**Biomass Stove Performance with Variation in Diameter
Hole on Reflector**

Dr. Bayu Rudiyanto, ST, M.Si (Chief Counselor)

Vira Oktaviani

Study Program of Renewable Energy Engineering
Department of Engineering

ABSTRACT

Biomass stove is a stove that uses biomass fuel for its combustion system. Biomass stoves that are commonly used by the community are still very simple and the efficiency produced is still low. Efforts to increase efficiency in this study were carried out by adding reflectors with variations in the diameter of the holes on the UB 03 biomass stove. The method used in the test was the Water Boiling Test (WBT) method. Parameters in testing the biomass stove are start up time, total operating time, boiling time, sensible heat, latent heat, heat energy input and thermal efficiency. The results showed that the addition of a reflector with an angle of 65° with an inverted cone shape was able to increase the efficiency by 4.27%-15.31%. The highest efficiency of the UB 03 biomass stove is at 1 cm diameter of the hole, which is 25.07%. The reflector also functions as a fire concentrator and captures heat lost to the environment.

Key words : Biomass Stove, Reflector, Efficiency, Variation of Reflector Hole Diameter