Application of Taguchi Method to Optimization of UB-03 Biomass Stove with Addition of Pot Skirt

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ABSTRACT

A biomass stove is a stove that uses biomass as its fuel. The combustion system is used as a user needs that are adapted to other design purposes besides that also in the domestic cooking process by burning to produce heat. To improve the efficiency of biomass stoves can use the addition of pot skirt. The pot skirt serves as a focus of the fire direction to the load so as to minimize the heat wasted, and also increase the efficiency of the biomass stove. This study used the Water Boiling Test (WBT) method for testing and for data analysis using the Taguchi method. This study aims to find out the optimum conditions of biomass stoves by adding pot skirts using taguchi with an orthogonal array L9 33, with a total test of 9.3 factors, namely angle (64°, 65°, 66°), hole total (9.10.11) and hole diameter (0.8 cm, 1 cm, 1.2 cm). The results of this study can be known the optimum conditions of the Taguchi method, namely the proposed design at an angle of 65 ° with a number of holes of 9 and a diameter of 1 cm. And the predicted efficiency value is 19.63%.

Keywords: *Biomass Stove, pot skirt, Taguchi Method, orthogonal array, optimum.*