Perancangan Dan Uiji Performansi Tungku Berbahan Bakar Kayu Dengan Variasi Luasan Lubang Udara (Design and Performance of Wood-Fired Stoves with Variations in Air Hole Area)

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ABSTRACT

Traditional stoves are conventional kilns that use biomass fuel as fuel. The form of a simple brazier stove with space at the bottom of the stove as a place of ash, and generally brazier stoves use charcoal or coal. The addition of the area of air holes in the furnace so that the combustion process that occurs in the furnace is more perfect and produces good embers. This study aims to get a good furnace design with air flow rates that match the needs of combustion with variations in the area of the air hole. Furnace material from stainless steel with variations in the area of the air hole is hole 1 (10 x 5 cm) hole 2 (10 x 10 cm) and hole 3 (10 x 15 cm). The results obtained using the WBT method (Water Boiline Test) the highest efficiency in the hole measuring 10 x 5 cm with a value of 22% with heat loss of 22071,53 W. Traditional furnaces with 12% efficiency results and heat loss of 883,71 W.

Keywords: Brazier furnaces, air holes, performance and efficiency