

ABSTRACT

EFFECT OF HEIGHT AND CLEARANCE OF POT SKIRT ON FURNACE PERFORMANCE

By

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Cooking is a very important activity in the house hold. Cooking activities in Indonesia, especially in Lampung many still use traditional stoves with open burning. The use of traditional stoves have low efficiency, about 5 - 10%. In general, people prefer the lowest prices of cooking apparatus and fuels without taking into account energy efficiencies. According these conditions need to know the performance of the furnace from the standpoint of energy use. This study aims to improve performance by using a blanket pot furnace.

Research carried out by using a pot furnace pot with a thick blanket gap size sand 6 different heights. Blanket pan that has been in the design of its size and made by craftsmen in pottery with clay material. Tests are performed on a test furnace is cold and heattest with three repetitions. The observations include the need for fuel, thermal efficiency, specific energy needs, a long time to boil water 5 l and the resulting emissions (CO, SO_x, NO_x, and particulates).

The results showed that the furnace using a blanket influential pan is better than a pot stove with out a blanket. From 6 size pans used blanket obtained the best results in blanket pan with 1 cm gap size and height of 12 cm. With fuel consumption 592 - 713grams of wood, the thermal efficiency of 17,11 to 20,64%, the specific energy requirement from 1,82 to 2,17MJ/kg water, and long boiling water 5 l 10,9– 13,5minutes, better than previous studies with out blankets pot furnace. While the results fortest of 650,09 $\mu\text{g}/\text{m}^3$ CO emissions, amounting to 64,53 $\mu\text{g}/\text{m}^3$ NO₂, SO₂ of 70,77 $\mu\text{g}/\text{m}^3$ and 86,14 $\mu\text{g}/\text{m}^3$ of total particulates.