ABSTRACT

DESIGNING, BUILDING AND TESTING BOILER AS ENERGY SOURCE ON SYSTEM OF MECHANICAL COFFEE DRYER

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Lampung is one of coffee producing largest in Indonesia, but the process drying coffee in Lampung, farmers is still traditionally by heat source directly from sun. Traditional coffee drying process resulted quality of coffee produced by farmers is less well, because when traditional drying is very allows coffee contaminated with dust and bacteria, and the water content of the dried coffee is not accordance with provisions of existing coffee dryer. Answer problems in drying process coffee, required mechanical coffee dryers with geothermal resources, as the initial research need boiler to illustrate geothermal heat. Boiler units are built with the type of combustion fixed layer (stoker boiler), and the unit distribution of fuel use conveyor type screw. Testing using bituminous coal fuel types with flow rate 16,3 *kg/h, flow rate of combustion air by* 202,8 m^3/h. *The results of coal combustion with air consumption use to heat water with the flow rate 3 l/min. From the test results, maximum temperature of water output is* 94^oC *and able to conditiom drying chamber coffee up to* 50^oC *with boiler efficiency by* 37,3%..

Keyword : *boiler, combustion, coffee dryer*