

DESIGN AND ANALYSIS OF HEATER AND BLOWER CONTROLS ON KOPRA DRYER BASED ON ARDUINO UNO

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ABSTRACT

Copra is coconut flesh that has been separated from the coconut shell. Copra is used to make coconut oil as raw material for making copra. Copra drying can be done in two ways, namely sun drying and artificial drying. Sun drying uses sunlight as an energy source for drying. Artificial drying uses fuel or a work heater from a heating device. In this study, the authors designed a dryer based on Arduino Uno, the heating system used is a heater that has a large power, namely 380 watts, with a maximum heat output reaching 115 °C. The control system used in this study uses a relay, the controlled equipment is a DC motor power window, heater and a blower. The heat capacity generated from the heater is 2,005.81 joule/°C, the value obtained from the air power blower is 51.569 watts while the shaft power is 29.26 watts resulting in an efficiency of 176 %. Testing of 5 kg copra drying using 2 heaters for 6 hours spend costs of Rp. 6,165.12.

Keywords: *Arduino Uno, Heater, Blower and DC motor power window*