

TEMPERATURE CONTROL AND MONITORING IN CHICKEN EGG INCUBATOR USING ANDROID APPLICATION

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ABSTRACT

The process of hatching chicken eggs by breeders is still mostly done manually. In the market itself there are hatching machine tools but they are not fully automated so that the chicken breeding process is less effective and efficient to meet the high market demand. The way this tool works is to incubate chicken eggs automatically with a DHT 11 sensor that can read temperature and humidity so that the temperature and humidity can be stable according to the needs obtained from the heat of the incandescent lamp and water in the incubator. Then for the process of turning chicken eggs, breeders don't need to do it manually because they already use automatic racks that are driven by servos when the temperature drops below 30°C. Hatching of chicken eggs takes approximately 21 days. The ideal temperature required for eggs during the hatching process ranges from 30 °C to 38 °C depending on the condition of the embryo produced by the hen. Chicken eggs will not hatch if the temperature is too high or too low, so a tool is needed that can maintain a constant temperature, one of which is in this study a temperature control and monitoring device was made in a chicken egg incubator using an Android application programmed using an Android software application. (IDE) which will be implemented on the NodeMCU platform which is open source and has features like a microcontroller and WiFi access capabilities. From the results of making this tool, it was found that the system functions according to the objectives that have been designed including automatic on/off control of light bulbs based on the temperature conditions of the chicken egg incubator with a temperature sensor success rate of 99.65%, and an overall system success rate of 80%.

Keywords: chicken egg incubator, android application, NodeMCU