FEEDING AUTOMATION AND TEMPERATURE REGULATION OF QUAIL BROODER STARTER PHASE BASED ON MICROCONTROLLER

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ABSTRACT

Quail is one type of poultry that has great potential to be developed because quail produces food that is high in nutritional value and can help provide some of the animal protein needed in our daily diet. Quail eggs contain 13.6% protein and 8.2% fat which is not inferior to the nutritional value of broiler eggs which contain 12.8% protein and 11.5% fat. Unfortunately, the increase in the potential of quail farming in Indonesia is still constrained by the difficulty of maintaining the starter phase of quail, especially quail aged 0-3 weeks. The mortality rate of quail in this phase is between 1-3%. It takes a special cage that has the same temperature as the mother quail using a lamp as a heater called a brooder. To overcome this problem, an automated quail cage was designed with the help of RTC and a stepper motor to provide feed then the temperature controller was equipped with a DHT11 sensor, DC fan and incandescent lamp to stabilize the cage temperature and an ultrasonic sensor for automatically filling quail drinking water based on Aduino Uno. The results of the prototype automatic quail feeder can work well and get success which includes accuracy, precision and sensitivity above 85%. As for the automatic drinking water filler, it works well by obtaining an accuracy above 85%.

Keywords: *Quail, RTC, DHT 11 Sensor, Ultrasonic Sensor, Arduino Uno.*