

ABSTRACT

The high temperature in tropical areas such as Indonesia during the day can cause heat accumulation in broiler chickens. In its maintenance, breeders often use instinct and experience to estimate the temperature and humidity conditions in the cage and manually set the temperature control hardware for that a tool is made for automation and monitoring of temperature and humidity in the cage.

This system utilizes Internet of Things (IoT) technology using the Wemos D1 microcontroller which is equipped with an ESP8266 WiFi module so that users can monitor temperature and humidity conditions through the website. The temperature and humidity values in the cage via a WiFi connection will be sent automatically to the database so that the temperature and humidity of the chickens can be monitored through the website that has been provided so that farmers can know and monitor the condition of the chicken coop in real time.

Based on the results of implementation and testing on a chicken coop prototype measuring 100 x 70 x 65 cm containing 4 broiler chickens aged 21 days, the tool can work automatically to raise or lower the temperature to normal temperature properly and with varying times depending on the initial temperature before normalized by the tool. From the test results obtained the lowest temperature at 06.00 i.e. 20.5°C takes 10 minutes to reach a stable temperature of 26°C at 06.10 and the highest temperature occurs at 12.00 i.e. 29.4°C takes 7 minutes to reach the temperature stable at 27.9°C at 12:07. The effect of the number of chickens put in the cage on the speed of temperature change is that the more chickens, the longer it takes to reach normal temperature. Then the results of testing the delay in sending data from the database to the monitoring website obtained the average value of the data delivery time, which is 0.195 seconds..

Keywords: *automation, monitoring, temperature, humidity, broiler.*