

ABSTRACT

Duck farming is dominated by a shepherding system in open areas such as rice fields or fields. Besides having to pay attention to feed, breeders also have to pay attention to the cage as a shelter for the ducks to stay comfortable. Basically, ducks are very sensitive to environmental conditions to maintain egg quality, especially on climatic factors. The climate is one of the concerns for breeders, during the rainy season the duck coop gets muddy which makes the ducks feel uncomfortable and can result in decreased egg production. In general, duck coops have an optimal temperature between (26-28)°C with optimum humidity between (55-65)%. In this study, a system is proposed to help breeders maintain temperature and humidity in duck coops using DHT11 sensors and weather data from Open Weather monitored in real time on a blynk application. Information monitoring uses the blynk platform, so that the delivery of information is calculated for QoS (Quality of Service) by calculating the delay parameter. The results of the DHT11 sensor test obtained a temperature error value of 1.58% and a temperature accuracy level of 98.41%. The roof of the cage was successfully adjusted using humidity data from Open Weather. The quality of data transmission on the prototype shows an average delay of 217.25 ms which is in the "Good" category according to ITU-T (International Telecommunication Union for Telecommunication) standards. The temperature control prototype in the laying duck cage has succeeded in providing excellent results with the ability to accurately monitor temperature, as well as creating optimal conditions for laying ducks in various weather conditions.

Keywords: *Micro climate, DHT11 Sensor, ESP32, Blynk, AccuWeather API, DC Fan.*