ABSTRACT

The development of technology in chicken farming has led to the use of an automated system to maintain temperature and control amonia gas levels in cages in real time using the internet and the Blynk application on smart phones. This system designed using NodeMCU ESP8266 as a microcontroller that works automatically based on the IoT. *This research aims to monitor the temperature and amonia gas levels in a closed house chicken coop in real time, and ensure the system is functioning properly. Testing the accuracy of the DHT11 sensor during calibration with a digital thermometer and the MQ-135 sensor with the Smart Sensor AR8500 tool. The DHT11 sensor with a digital thermometer and the MQ-135 sensor with the Smart Sensor AR8500 take temperature readings simultaneously in the morning, afternoon, and evening. The temperature data that has been read by the sensor and the comparison tool shows varying temperature values. The DHT11 sensor recorded a minimum value of 28.7°C, a maximum value of 29.2°C, and an average of 29°C. Meanwhile, the digital thermometer recorded a minimum value of 28.9°C, a maximum value of 29.7°C, and an average of 29.11°C. The accuracy between the sensor and the comparison tool is not much different with an average accuracy of 99.62% and an average sensor error of 0.43%. The MQ-135 sensor shows that the minimum value is 1.8 PPM, the maximum value is 1.9 PPM, and the average value is 1.86 PPM. Then the AR8500 Smart Sensor shows that the minimum value is 1.4 PPM, the maximum value is 1.9 PPM, and the average value is 2.1 PPM. The system automatically activates the fan when the temperature is above 28°C and turns on the lights when the temperature is below 28°C. The results show that the system is effective in monitoring and controlling the environmental conditions of the chicken coop, ensuring the welfare of the livestock and improving the operational efficiency of the farm.*

Keywords: *Blynk,* IoT, *NodeMCU ESP8266*