

ABSTRACT

Horticultural commodities are agricultural groups that have a lot of variety. These commodities have grown and developed into agricultural commodities that have quite a lot of demand in the market. The average market demand for horticultural products reaches 11%. Based on this, a planting system with the aeroponic method was made with an IoT-based monitoring and control system to produce plants with good quality in a short time.

Aeroponics is a method of planting with the technique of hanging plant roots in the air as a growing medium in which the nutrient solution is given by misting or spraying the roots of the plant. The way the tool works is to send sensor data from the NodeMCU via the internet to the cloud and the data is stored in real-time in the firebase, the data is sent to the Android platform so that the data can be read by the user and the data is sent to a google spreadsheet automatically which will be analyzed later. update data every 15 minutes.

In this study, calibration of the DHT11 sensor with HTC Digital obtained an accuracy of 95.5% humidity and 97% temperature, the LDR sensor with LUX meter obtained an accuracy rate of 75.163%, pH sensor with pH meter 97.33%, ultrasonic sensor and ruler. get 100% accuracy, the bandwidth used is 20 Mbps. The network quality test is delayed, with 3 different test times, busy hours (19.00 - 23.00 WIB), empty hours (01.00 - 03.00 WIB), normal hours (12.00 - 14.00 WIB). From network testing, the minimum delay is 0.255 seconds and the maximum is 0.291 seconds. The results of testing tools during seeding, lettuce plants can grow well.

Keywords: Horticulture, Aeroponics, Internet of Things.