

ABSTRACT

Research on aeroponic systems is very important where the quality of content greatly influences aeroponic plants, aeroponic systems are farming systems that use air as their medium, so vegetable lovers who use soil or water media (hydroponics) can be skilled at using air or aeroponic media where this system is using misting water that is sprayed directly on the roots of plants. One of the main problems of aeroponics is the quality of plant water which must be in accordance with plant needs. There are several factors that affect the quality of plant water, namely temperature, humidity, water pH, nutrient water level.

In this Final Project, a tool is created to monitor sensor results on these plants as well as carry out automatic control through the website. This system uses a DHT11 sensor to monitor temperature and humidity results, a ph-4502C sensor, and a HCSR-04 sensor for nutrient solution surface level (availability). Meanwhile, as a control for the ph sensor using Arduino R3 to get the results of the ph sensor, which will be connected to the WiFi esp32 module to transmit data while controlling plant pumps. Sensor data will be sent in the form of monitoring results to the website.

From the results of tests carried out functionally, the system is able to carry out monitoring and control automatically according to the levels according to the specified nutrients. The accuracy of the temperature measurement results is 98.79%, humidity is 97.07%, pH level is 96.44%, nutrient liquid level is 98.63%, and in testing the automation system in watering based on the average pH level obtained is 6.41 while those based on height get an average of 24.60 Cm.

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