ABSTRACT

Hydroponic is one of the innovations in agriculture, which makes it easier for people who want to cultivate plants but do not have a large area of land. It doesn't stop there, hydroponic activists make other hydroponic techniques, one of which is verticulture hydroponics. This hydroponic technique uses one pipe as a shaft, then the plants are planted vertically which makes this hydroponic require less space. However, the hydroponic technique also has a weakness, by using water as a growing medium, there are many factors that need to be considered so that plants grow well.

Based on the problems above, a hydroponic monitoring system was carried out. The monitoring system that will be created can provide important factors so that plants can grow healthily. These factors include water temperature, water pH, level of water turbidity, the volume of nutrient water, and levels of AB Mix in the water.

Smart vertical hydroponic that have been designed have gone through the testing stages with good results. The results of testing the functionality of the tool are as expected and 100% working. Based on the sensor reading test data, the error rate value is 2.02% for the TDS sensor, 1.13% for the temperature sensor, and for the pH Meter sensor, the error rate is 3.15%, 2.94%, and 2.92%. In the delay test, the delay value is 0.61 seconds in the monitoring section and 2.15 seconds in the controlling section.

Keywords: *hidroponic, vertikultur, Zabbix, Grafana, arduino.*