ABSTRACK

Hydroponics is a system of cultivating plants without using soil as a medium for growing plants. Provision of nutrients is needed for hydroponic cultivation of plants, essential nutrients both macro and micro. The use of measuring instruments that are still manual requires time during the measurement process, to facilitate the process requires technological assistance. One method of planting using the principle of NFT (Nutrient Film Technic) with a monitoring system which is a solution for agriculture in narrow areas. Agar can help monitor conditions at pH, PPM, and temperature around stable plants. The system uses the NodeMCU as command control and as a data receiver from the pH sensor to measure acidity, the TDS sensor to measure the concentration of nutrient liquids, the DHT22 sensor to measure temperature and humidity around hydroponic plants. In this study, the author will build an information system for monitoring plant growth that will read the values and data from each sensor that will be stored in the Firebase database. Then the values and data will be forwarded to the webserver whose reading results will be displayed on the Hydroponic System website page. The goal is to display nutrient pH levels, PPM values, temperature and humidity in hydroponic plants. The test results from each sensor for reading the value at pH have an average error percentage of 0.063% and the pH variable has a standard deviation value of 7.21. This value is greater than the mean value of 0.81. This indicates that the pH value is alkaline. The TDS sensor for reading the PPM has a percentage with a standard deviation of 6.98. This value corresponds to the calculation of the error and the average standard deviation of each sample.

Keywords : Hydroponic, Nutrient Film Techniq (NFT), Monitoring System, Firebase