ABSTRACT

THE DESIGN OF A MONITORING TOOL FOR THE FLOW AND AMOUNT OF WATER IN A GREEN HOUSE BASED ESP 32

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Greenhouse is a type of building that resembles a mini-cabin and has the function for protecting plants from unpredictable extreme weather, pests, and chemicals dangerous from the air around it. The implementation of Internet of Things (IoT) technology in Greenhouses has been widely applied, but not equipped with a monitoring system for water usage and turbidity level so farmers or greenhouse owners do not know the amount of water and quality of clean water used. This monitoring tool used water flow sensors to measure water discharge so that the amount of water usage per day could be calculated. Sensor Viscosity is used to read the level of water turbidity.

ESP 32 TTGO T DISPLAY worked as a microcontroller that was equipped with an internet connection (WiFi) so that the reading results sensors were displayed through the Telegram messaging application. The implementation of tools in the greenhouse showed that the monitoring system worked by monitoring the flow and amount of water using the IoT concept by displaying sensor readings in real-time via Telegram app messages.

Flow discharge was read if the water flow was in the watering line flow. Measurement of the level of water turbidity in clean conditions ranged from 3.29 NTU – 8.66 NTUs. The result of trials and observations obtained that the average amount of water used on the route watering 1 was as much as 4.83 liters while the average amount of water used in watering line 2 was as much as 6.19 liters. The overall average amount of water used per day was 11.25 liters.

Keywords: Water Flow Sensor; Viscosity Sensors; ESP32; Internet of Things