ABSTRACT

Agricultural technology continues to develop in creating ideal conditions for crop needs. The need for temperature, soil moisture, and light for plants is something that must be considered in order to get a healthy plant, free from pests, and quality. Often unpredictable weather can interfere with plant growth. Therefore, with technological advances in the agricultural sector, conventional greenhouse technology has been replaced by the construction of a greenhouse equipped with a smart farm system.

Pakcoy plants are a type of vegetable favored by Indonesians. Almost all people consume this type of vegetable. Pakcoy plants have a relatively short harvest life of 25-28 days after planting. Therefore, to increase the yield of Pakcoy cultivation, a smart farm system with drip irrigation was created which was able to work automatically based on changes in the soil water content of the Pakcoy plant.

At research, time have made a system smart farm which is equipped with several sensors, namely soil moisture sensors, temperature sensors and humidity of the room and is equipped with a webcam and a Raspberry Pi 3+ models. B. Raspberry Pi 3+ model B has features that are almost comparable to the mini PC, therefore it is used as the main brain for controlling this system. In this smart farm, there are several stages, namely taking the value of soil moisture as a reference for watering and weather conditions as monitoring the conditions around the plants. These data serve as input for watering automation. This system is also supported by taking pictures of plant growth using a webcam.

From the results of the tests that have been done, it is known that the system can work well. Testing QoS (Quality of Service) for data delivery tool to the website value of delay is obtained 0,40688s. In QoS testing for reading data from the device to the website. The average throughput obtained is 3711.13 bps.

Keywords: Internet of Things, Raspberry Pi, DHT 22 Sensor, YL-69 Sensor, BH-1750 Sensor, Relay