

ABSTRACT

Water spinach is one of the most popular vegetables in Indonesia. The content of vitamins A, B, C, protein, calcium, and so on is the reason people often consume kale. However, kale is a plant that requires a lot of water for its growth. Therefore, the water content in the soil must be considered for good growth of kale. If the water content in the soil is insufficient, or even exceeding, it will have an impact on the reduced carbohydrate content until it is wilted. However, currently kale farmers are still watering kale plants manually, which is a risk if not monitored, the soil will experience drought.

In order to reduce this risk and reduce the rate of crop failure, the implementation to improve quality is the application website of anbased kale cultivation Internet of Things (IoT). The use of IoT to generate-information realtime and use the mcu node as a microcontroller. Using an ultrasonic sensor as a sensor that can read plant height distances, using a pH sensor for soil acidity and soil moisture FC-28 as a sensor that will measure soil moisture. All sensors will provide information about water content, pH levels, watering equipment working or not, until the final state of the kale plant.

The IoT-based kale cultivation is able to reduce the rate of poor harvest failure, thus making the work of farmers more efficient. In this study, it will provide notification output through a website that was not previously available in previous studies. So using IoT in implementing plant sprinklers that are connected to website this, it makes it easier for farmers to control and control the state of the land to find out the level of adequacy of soil moisture, soil pH to plant height on the land to determine the state of plants that are ready to harvest.

Keywords: water spinach, IoT, soil moisture, nodemcu, sensors, notifications.