

ABSTRACT

The reduced area of harvested land each year causes a decrease in the number of plants that can be harvested. Therefore a planting method is needed that does not require a large area of land, with these problems the aeroponic planting method can be used as an alternative to conventional planting methods which require a large area of land. Along with the rapid development of digital technology, the emergence of IoT (Internet of Things) technology, IoT is a system that makes it easier to control and monitor devices. IoT technology can be implemented in various sectors, one of which can be implemented in aeroponics. By monitoring and controlling an IoT-based aeroponic system, aeroponics can be used as an alternative for planting on narrow land.

The systematics used in this final project is for monitoring and controlling the aeroponic system. This final project uses ESP32 as a microcontroller, uses a TDS sensor to measure the value of nutrient content in water, DHT11 sensor to measure air temperature and humidity, DS18B20 sensor to measure water temperature and HC-SR04 sensor to measure water level. In addition, there are two pumps used to supply water and water nutrients to the aeroponic system. To monitor, you can use the LCD and the blynk application on your smartphone.

Based on data obtained from various sources, the ideal nutritional value of water for lettuce plants is 700-900 ppm, the ideal temperature is in the range of 25°C – 30°C and the water level is above 20 cm. Data obtained from the sensor will be displayed on the Blynk and LCD applications so that users can carry out monitoring and controlling processes in realtime.

Keywords: *Aeroponics, Monitoring, IoT, Blynk, TDS Sensor*