

IOT-BASED HYDROPONIC DESIGN FOR SEEDLING OF SPROUTS

Renaldy Pangestu

*Electrical Engineering Study Program, Faculty of Science & Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : pangestu.renaldy07@gmail.com*

ABSTRACT

Bean sprout cultivation plays a crucial role in the food supply chain, especially since bean sprouts are a source of high nutrition and bean sprouts are often used in everyday dishes. The use of hydroponic systems for cultivation can increase control over the plant growth environment, resulting in healthier and more productive plants. In this study, a plant cultivation system was developed, namely hydroponic cultivation. The system built consists of an HC-SR04 sensor, a TDS meter sensor and an ESP8266 nodeMCU. Testing of the IoT-based hydroponic system showed positive results. The HC-SR04 and TDS sensors successfully detected the height and ppm of chili plants, then the data was sent to the Blynk application for monitoring. Ultrasonic sensor testing showed an average error of 0.074%, while TDS sensor testing showed an average error of 0.29%. Testing of the entire device in various scenarios showed a success rate of 90%.

Keywords: *Hydroponics, HC-SR04 Sensor, TDS Sensor, Blynk.*