DESIGN OF MONITORING AND CONTROL SYSTEMS OF TEMPERATURE, HUMIDITY AND WATER LEVELS IN HYDROPONIC PLANTS BASED ON BLYNK APPLICATIONS

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ABSTRACT

Hydroponics is a farming method without using soil media. Currently many people apply hydroponic farming methods. There are many methods and techniques that can be used in this cropping system. One of the most popular methods used in hydroponic growing systems is the NFT or Nutrient Film Technique method. The NFT system itself is a method of cultivating plants with plant roots growing in a shallow and circulating layer of hydroponic nutrients so that plants can get enough water, nutrients and oxygen. The NFT hydroponic system will automatically make it easier for humans to grow hydroponically without having to control the availability of water and oxygen nutrients for plants at any time because the model and application are quite simple. Based on this problem, an idea emerged to design and build a monitoring and control system for temperature, humidity and water level in hydroponic plants based on the telegram application where users can directly monitor the condition of hydroponic plants in terms of temperature, humidity, nutrient water level in the tank while simultaneously controlling the pump. nutrition from a distance using a smartphone with a sensor success rate and the whole system is quite good with a temperature sensor accuracy percentage value of 99.65%, a soil moisture sensor success rate of 100% and an overall system success rate of 80%.

***Keywords** : Hydroponics, Temperature and Humidity Sensors, NodeMCU*