ABSTRACT

Hydroponics is a method of planting without using soil but using water containing a mixture of nutrients to fulfill nutrients in plants. This research aims to create a hydroponic monitoring tool for cherry tomato plants that can be monitored remotely. This research uses semi-indoor hydroponics because it can optimize the use of sunlight without wasting electricity. Lamp lighting is only used at night because at night there is no sunlight, so that the light intensity for cherry tomato plants is still fulfilled for 14 hours. This hydroponic planting method is suitable for people or farmers who have narrow land, but hydroponic techniques in strict control to produce good plants, these hydroponic plants must always be controlled regularly. To overcome these problems, in this study, semi-indoor hydroponic plant monitoring using telegram bot based on the Internet of Things was made. In this research, the planting method used is Nutrient Film Technique (NFT) where half of the plant roots are submerged in nutrient water that circulates for 24 hours using a pump. The parameters tested were the regulation of light intensity, ambient temperature and pH of plant nutrient water. This telegram bot allows users to monitor hydroponic plants remotely. Based on the test data, the accuracy level of the sensors used is said to be good, namely the BH1750 sensor has an error of 1.925% and an accuracy of 98.074%, the DHT11 sensor has an error of 4.307% and an accuracy of 95.683%, and the PH 4502-c sensor has 2.56% and an accuracy of 97.432%.

Keywords: *Hydroponics, NFT, Cherry tomato, Telegram Bot*