ABSTRACT

In this study, an automatic watering control system with drip irrigation and monitoring of soil moisture for chili plants with IoT has been developed, namely the Blynk application as a tool for monitoring. This study only focuses on the soil moisture of chili plants where there are 10 polybags containing chili plants and five of them are watered automatically by the system if the soil moisture of chili plants is less than 60% which this number will be the limit by the relay and solenoid valve in the on state. or off and another 5 polybags are watered manually within one time in 48 hours. There are two humidity sensors installed, namelyto represent soil moisture with control and soil moisture without control. The soil moisture value will be read in the Blynk application which was previously installed on the smartphone and the token code has been entered into the noemcu code so that it can display soil moisture data sent by nodemcu that is connected to wifi. The water source in automatic irrigation comes from one source which is then divided into five polybags with drip irrigation. The average water received by each polybag in 30 minutes is 209.33 ml with a discharge of 0.42 L/hour with an error of 1.34%. The average soil moisture of chili plants during data collection with control and without control was 67.05% and 66.43% with a standard deviation of 1.52 with control and 3.67 without control. While the soil moisture in summer with control is 56% -75% and without control 42% -80%. Soil moisture during rainy weather with control 65%-74% and without control 75%-85%.

Keywords: drip irigation, soil moisture, chilli plants.