

ABSTRACT

Agriculture is one of the most important factors in the Indonesian economy, because natural resources from crops can be exported to increase state revenue. Tomato plants are one of the fruit vegetables that are widely consumed in a raw or cooked state, tomatoes are favored by almost all people in the world. To get a good harvest, the environmental conditions that exist on agricultural land need to be considered in order to get good yields and prevent plants from wilting. Ideal soil moisture for tomato plants at 60-80% soil moisture content. Based on this, it is necessary to make a tool with an automatic watering water control system based on soil moisture in tomato plants with the Sugeno method Fuzzy control system. Using a soil moisture sensor connected to the NodeMCU ESP8266 microcontroller, watering can be done using a DC12V water pump that works based on the control of the soil moisture value which is then processed. The use of Fuzzy control system can be implemented to control the output of the water pump. The average error obtained by the control system that has been made with an error value of 1.39%, the accuracy of the system comparison is included in the excellent category because the accuracy value obtained is 98.61%.

Keywords: *Automatic Sprinklers, Fuzzy Control, Soil Moisture, Tomato Plants, Internet of Things*