

ARDUINO-BASED AUTOMATIC DRIP FERTILIZATION SYSTEM ON AGRICULTURAL LAND

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ABSTRACT

In agriculture, fertilization is very important so that the plants or plants planted can thrive if the plants have sufficient and regular fertilizer. Fertilizing plants by farmers is still done manually, someone must bring a container containing fertilizer and then give it one by one to the plants evenly so that it takes a lot of time and energy to drain. In past research, research has been carried out with IoT systems and watering systems with Arduino Uno control. Based on these problems, the author will create a tool entitled Automatic Drip Fertilization System on Arduino-Based Agricultural Land. Such tools can be easily used by farmers for automatic fertilization of crops. The tool that will later be made has regular fertilization system technology using Arduino Uno so that it can improve the quality of agricultural products and farmers do not need to fertilize plants manually anymore. Based on the test results when the power supply is given an AC input voltage, the output voltage value is 230 V and if given a DC input voltage, the output voltage value is 5 V. Testing the output voltage on the relay when in active condition is 5 V and the RTC output voltage when in active condition is 5 V. Testing the output voltage on the Arduino Uno when it is active is 5 V at pin 5 V and is 3.30 V at VCC pin. Testing the output voltage on the water pump engine when it is active at 230 V. Overall testing of the tool was carried out 7 times and 6 times successfully with 1 failure. It can be concluded that the accuracy rate on the tool is 85 %.

Keywords: *Power Supply, Relay, RTC, Arduino Uno, Water Pamp Machine*