

ABSTRACT

So far, one of the efforts made by farmers to increase the production of strawberry crops is by using inorganic fertilizers. Agricultural production in Indonesia is inseparable from the use of inorganic fertilizers and is difficult to separate in the cultivation of strawberry plants. Market demands that can not be separated from the increase in strawberry production make one of the factors that make inorganic fertilizers inseparable from our agricultural world.

In the design of a tool to measure Nitrogen, Potassium and Phosphorus in strawberry plants with star network topology method, the hardware used is the ground element measurement sensor, sensor Soil Moisture, and NodeMCU as a microcontroller. The elemental measurement sensor for soil measures nitrogen, potassium, phosphorus on the ground, sensor Soil Moisture measures soil moisture, NodeMCU functions as a microcontroller and sends soil nutrient measurement data to the realtime database. The real time database used in this work is firebase. Sensors are arranged to form a star topology, and analyze the network whether it is effective or not used in this final project.

From the results of tests conducted on a device that proves a device that can be used to measure unshara soil in strawberry plants. In Functional testing the device can perform its functions perfectly. Testing for delay, throughput, packet received and packet loss depends on the number of devices used and the operator used.

Keywords: Nitrogen, Potassium, Phosphorus, Strawberry, NodeMCU, Internet of Things