ABSTRACT

Considering that Indonesia will become a country with food self-sufficiency in the next few years, it is necessary to have a tool that can enable planting of crops to occur in all seasons. The need for the development of a red chilli flush tool based on a soil moisture sensor with IoT notification is needed in today's era. The development of Internet of Things (IoT) technology in this era is more advanced. This happens because in the modern era almost all electronic devices are connected to the internet.

This chilli-based soil moisture sensor will be integrated into the Smartphone device. That allows users to give orders and control soil moisture on the chili crop land wherever and whenever the user wants. So the number of crop failures due to land drought will be reduced. With this condition, it allows plants to be planted in dry dry season because soil moisture can be controlled and monitored in real time.

The expected results in the design of this tool are, make it easier for users to give orders, notify soil conditions in real time, and can reduce the number of crop failures due to land drought.

This tool produces an average value of delay on the soil moisture node of 0.211493ms and on the soil NPK node of 0.362903ms. Also throughput testing on soil moisture nodes with the results of 8803.1065 bits/second and on NPK nodes of soil is 4140.7586 bits/second. It can be concluded that the level of tool reliability is 97.33%.

***Keywords**: Internet of Things (IoT), soil moisture sensor, real time*