

ABSTRACT

Chili is an important food commodity for the community. However, so far the national chili has always been in deficit. High consumption followed by low production forces the government to import chilies to meet domestic demand every year.

To help increase chili yields, a system was designed to facilitate the process of measuring levels of Nitrogen (N), Phosphorus (P), Potassium (K) on plantation land, especially chili directly (realtime monitoring) using an NPK sensor and maintaining soil moisture, with an automatic flushing system (realtime-controlling) using the YL-69 sensor. Antares LR-ESP201 Board as a microcontroller and information data channel to the cloud. The cloud used in this work is Antares. This system uses LPWAN LoRa at a frequency of 920-923 MHz as data transmission communication and uses the Antares cloud service to store stored sensor data which will then be displayed on an Android smartphone based on the Internet of Things (IoT).

The expected result from designing this system is that with the IOT concept in chili plants, users can measure nitrogen, phosphorus and potassium levels directly through the Android application so that control of soil content, fertilization and watering can be more effective

Keywords: Nitrogen, Potassium, Phosphorus, Chili, Antares LR-ESP201 Board, LPWAN Lora, Internet of Things, Antares