ABSTRACT

In order to integrate information system technology to develop domestic Precision Agriculture, currently it is intended to support agricultural efficiency, productivity and profitability. This is driven by the emergence of problems in the field related to a decrease in the level of plant productivity due to, among other things, less intensive monitoring of plants during their growth period, especially for horticultural crops, specifically carrots. Because carrots are plants that are very vulnerable to environmental conditions including soil temperature and humidity, air temperature and humidity, light intensity, and soil pH. One alternative solution to fix this problem is by applying IoT-based Field Server (FS) technology.

Field Server (FS) uses 5 sensors to acquire data in the field including temperature and humidity sensors, soil temperature sensors, soil moisture sensors, light intensity sensors, and soil pH sensors operated by an MCU with a measurement accuracy rate of> 95%. Monitoring data can be accessed remotely using the IoT (Antares) platform, with an accumulated delay in data transmission of 7.5 seconds depending on the wifi network connection connected by the wifi module. With the help of the wifi module the data sent can be received and displayed 100% without any packet loss on the web server. FS was applied to a carrot growing area in Ciwidey Bandung, West Java to monitor the effect of 6 environmental parameters that support plant growth and work in Real Time.

Keywords : *Precission Agriculture, Field Server, IoT, Web Server.*