

## ABSTRACT

*Chili is one of the vegetables that is widely cultivated by farmers because of its high selling price. Chili plants develop well in soil that contains lots of humus, is loose with soil moisture ranging between 80-90% and an optimal temperature of 24 – 28 °C with full sunlight. In order for chili plants to grow well, you need to pay attention to soil temperature and humidity. To monitor soil moisture and temperature on chili plants, Internet of Things (IoT) devices can be used. The IoT network uses a protocol for communication, one of which is the Constrained Application Protocol (CoAP) protocol. The aim of this research is the CoAP protocol applied to the soil moisture and temperature monitoring system in chili plants and testing the performance of the CoAP protocol used in the soil moisture and temperature monitoring system in chili plants. The methods used are analysis, design, implementation and testing. The results of this research were successful in creating a monitoring system for soil moisture and temperature in chili plants using the Constrained Application Protocol (CoAP) method. This research produced an average soil moisture value of 84% and an average soil temperature for chili plants of 24.9°C. The performance of the soil moisture and temperature monitoring system for chili plants was good with a delay of 19.8 ms.*

*Keywords: chili, CoAP, soil moisture, temperature*