

ABSTRACT

Invertebrate animals that live in the soil are called earthworms. Due to their various advantages, earthworms are in high demand both domestically and internationally. Earthworm farming has bright prospects as an export commodity. Factors such as temperature and soil moisture greatly affect the life of earthworms. The optimal temperature for earthworm cultivation is between 15°C to 32°C, while the ideal soil moisture ranges from 60% to 80%. Currently, many earthworm farmers still use manual tools to monitor soil temperature and moisture conditions in the cultivation media. An automated control system that can be monitored remotely through internet of things technology can take on the role of manual monitoring in this situation. This research shows that the Dallas DS18B20 sensor that measures temperature has an accuracy value of 99.83%, the soil moisture sensor that measures soil moisture has an accuracy value of 97.86%, and the HC-SR04 ultrasonic sensor that measures the water level of the reservoir has an accuracy value of 99.74%, with a total of 30 test data. The QoS test results obtained an average throughput value of 5.77 Kbit/s, an average delay value of 281 ms, and an average packet loss value of 0%.

Keywords : Earthworm, Temperature, Soil Moisture, Internet of Things