INTISARI

IMPLEMENTASI DAN ANALISIS PERFORMA PROTOKOL *MESSAGE QUEUING TELEMETRY PROTOCOL* JARINGAN *SMART FARMING* PADA BUDIDAYA JAMUR TIRAM DENGAN MEMANFAATKAN *INTERNET OF THINGS*

Perkembangan teknologi memberikan banyak dampak pada kehidupan manusia. Banyak hal dapat dikontrol otomatis dari jarak jauh. *Internet of Things (IoT)* sebagai teknologi yang dapat menjadi solusi untuk mempermudah pekerjaan manusia. *Internet of Things (IoT)* dapat digunakan pula di bidang pertanian atau perkebunan pintar (*Smart Farming).*

Tujuan penelitian untuk mengetahui lalu lintas data dalam budidaya jamur tiram, sehingga budidaya dapat dipantau secara *realtime*. Adapun metode yang digunakan adalah Implementasi dan analisis.

Tanaman Jamur Tiram sangat dipengaruhi oleh temperatur dan kelembaban. Kondisi udara saat pertumbuhan Jamur Tiram berada pada suhu 24-28 derajat Celcius. Penggunaan *Internet of Thing* (IoT) di bidang pertanian dapat mendukung pemantauan, perawatan dan meningkatkan produktifitas. Penerapan Smart Farming di bidang pertanian salah satunya dengan menggunakan *protocol Message Queuing Telemetry Transport* (MQTT) sebagai sarana lalu lintas data antara sensor, *server* dan penerima data. *Message Queuing Telemetry Transport* (MQTT) merupakan *protocol* yang dapat bekerja secara realtime dan dapat bekerja pada bandwidth yang rendah, sehingga lalu lintas data tetap lancar walaupun menggunakan bandwidth yang rendah. Pada penelitian ini, kualitas lalu lintas data di cek dengan *Quality of Service* (QoS) meliputi *packet loss delivery, packet delivery ratio,* dan *throughput.*

Kata Kunci : *Internet Of Things , Smart Farming, MQTT, QoS*

ABSTRACT

IMPLEMENTATION AND ANALYSIS PERFORMANCE PROTOCOL MESSAGE QUEUING TELEMETRY PROTOCOL OF SMART FARMING NETWORK IN OYSTER MUSHROOM CULTIVATION BY USING INTERNET OF THINGS

The development of technology, gives many effects for human life. Many things can be controlled automatically and remotely. Internet of Things is as one of technology development which can be a solution to make human life easier. Internet of Things can also be used in agriculture sector and smart farming.

The aim of this research is to know the quality of data traffic in cultivation of oyster, that it can be controlled real time. Then the methods used are implementation and analysis.

Oyster growth is very affected by temperature and humidity. The temperature needed for growing of oyster is 24-28 Celsius degree. The use of Internet of Things is needed to monitor, take care and increase the productivity. Implementation of Smart Farming in agriculture sector, such as the using of protocol Message Queuing Telemetry Transport (MQTT) as a media of data traffic among censor, server and receiver of data. Message Queuing Telemetry Transport (MQTT) as protocol which can work as real time and work in low bandwidth, so the traffic of data works smoothly although in low bandwidth. In this research, the quality of data traffic can be checked by Quality of Service (QoS), namely packet loss delivery, packet delivery ratio, and throughput.

Keywords: Internet Of Things , Smart Farming, MQTT, QoS