ABSTRAK

RANCANG BANGUN SISTEM MONITORING INTENSITAS CAHAYA, SUHU DAN KONTROL OTOMATIS PADA KUMBUNG JAMUR TIRAM BERBASIS INTERNET OF THINGS

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Penelitian ini merancang sistem monitoring otomatis untuk mengatur suhu dan intensitas cahaya dalam kumbung jamur tiram melalui teknologi Internet of Things (IoT). Sistem menggunakan sensor suhu DS18B20 dan sensor intensitas cahaya BH1750FVI sebagai input. Saat suhu di atas 30°C, sistem mengaktifkan mist maker dan kipas; di bawah 25°C, lampu pemanas aktif. Cahaya kurang dari 300 Lux menghidupkan lampu. Standar suhu (26°C - 29°C) dan cahaya (<300 Lux) untuk pertumbuhan jamur diikuti. Hasil uji coba menunjukkan sistem mampu mengatur perangkat. Relay lampu aktif saat suhu <25°C dan cahaya <300 Lux; relay kipas dan mist maker aktif saat suhu >30°C. Ada sedikit error pada pembacaan suhu (1°C - 2°C), namun sensor intensitas cahaya berfungsi baik. Sistem membantu petani memantau kondisi kumbung jarak jauh, optimalisasi pertumbuhan jamur sesuai standar. Meski ada error pembacaan suhu, sistem tetap berfungsi baik. Cloud efektif menyimpan data sensor, dengan respons waktu pengiriman data dalam 2 detik, memfasilitasi pemantauan real-time suhu dan cahaya kumbung jamur.

***Kata kunci*:** DS18B20, BH1750FVI, Jamur Tiram, Internet of Things (IoT).

ABSTRACT

DESIGN OF LIGHT INTENSITY, TEMPERATURE MONITORING SYSTEMS AND AUTOMATIC CONTROL ON OYSTER MUSHROOMS BASED ON INTERNET OF THINGS

By

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This research designs an automatic monitoring system to regulate temperature and light intensity in oyster mushroom cages through Internet of Things (IoT) technology. The system uses a DS18B20 temperature sensor and light intensity sensor BH1750FVI as input. When the temperature is above 30°C, the system activates the mist maker and fan; below 25°C, heating lamp is active. Light less than 300 Lux turn on the light. Standard temperature (26°C - 29°C) and light (<300 Lux) for fungal growth followed. The test result showed that the system was able to regulate the device. The light relay was active when the temperature was <25°C and the light was <300 Lux; fan relay and The mist maker was active when the temperature was >30°C. There was a slight error in the temperature reading (1°C - 2°C), but the light intensity sensor worked fine. The system helps farmers monitor conditions of long distance kumbung, optimizing mushroom growth according to standards. Although there was a temperature reading error, the system still functioned well. Cloud effectively stored data sensor, with a data transmission time response of 2 seconds, facilitated real-time monitoring of temperature and light of mushroom barns.

Keywords: *DS18B20, BH1750FVI, Oyster Mushroom, Internet of Things (IoT)*