

SISTEM MONITORING DAN KONTROL SUHU RUANGAN SERTA KELEMBABAN MEDIA TANAM PADA LAHAN BUDIDAYA JAMUR TIRAM BERBASIS INTERNET OF THINGS (IOT) DAN WEB

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INTISARI

Latar Belakang: Jamur tiram (*Pleurotus ostreatus*) merupakan salah satu komoditas agribisnis yang menjanjikan di Indonesia karena nilai gizinya yang tinggi dan permintaan pasar yang terus meningkat. Faktor lingkungan seperti suhu dan kelembaban menjadi aspek krusial dalam keberhasilan budidaya jamur tiram, karena fluktuasi yang tidak terkontrol dapat menghambat pertumbuhan dan menurunkan kualitas hasil panen. Di lapangan, praktik budidaya yang masih bersifat konvensional, seperti yang terjadi di Gardenision, membuat petani kesulitan memantau kondisi lingkungan secara optimal.

Tujuan: Penelitian ini bertujuan membangun sistem *monitoring* dan kontrol suhu serta kelembaban berbasis IoT dan web untuk membantu petani menjaga lingkungan budidaya jamur tiram secara otomatis.

Metode Penelitian: Metode penelitian ini menggunakan pendekatan eksperimental, di mana sistem menggunakan sensor untuk membaca suhu dan kelembaban secara *real-time*. Jika suhu dan kelembaban melewati batas optimal, sistem menyiram otomatis melalui *nozzle*. Data disimpan di *database* dan ditampilkan melalui *dashboard web*.

Hasil: Sistem berhasil mencatat data, menyiram otomatis saat suhu dan kelembaban melewati batas optimal, dan menampilkan kondisi secara *real-time*. Ini membantu menjaga kestabilan lingkungan budidaya.

Kesimpulan: Sistem ini meningkatkan efisiensi budidaya jamur tiram dengan kontrol otomatis terhadap suhu dan kelembaban, serta berpotensi mengurangi gagal panen dan mendukung produktivitas petani kecil.

Kata-kunci: Jamur tiram, IoT, pemantauan suhu dan kelembaban, *otomasi*, *dashboard web*

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MONITORING AND CONTROL SYSTEM FOR ROOM TEMPERATURE AND GROWING MEDIA HUMIDITY ON OYSTER MUSHROOM CULTIVATION LAND BASED ON INTERNET OF THINGS (IOT) AND WEB

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ABSTRACT

Background: Oyster mushrooms (*Pleurotus ostreatus*) are a promising agribusiness commodity in Indonesia due to their high nutritional value and growing market demand. Environmental factors such as temperature and humidity are crucial to the success of oyster mushroom cultivation, as uncontrolled fluctuations can hinder growth and reduce crop quality. In practice, traditional cultivation methods, such as those used in Gardenision, make it difficult for farmers to monitor environmental conditions effectively.

Objective: This research aims to develop an IoT- and web-based system for monitoring and controlling temperature and humidity to help farmers maintain optimal cultivation conditions automatically.

Method: This research method uses an experimental approach, where the system uses sensors to read temperature and humidity in real time. When the values exceed optimal thresholds, it automatically activates a misting system through nozzles. All data is stored in a database and displayed on a web dashboard.

Result: The system successfully records data, automatically performs misting when temperature and humidity exceed optimal levels and displays real-time environmental conditions. This helps maintain a stable growing environment.

Conclusion: The system improves the efficiency of oyster mushroom cultivation by providing automatic control over temperature and humidity. It has the potential to reduce crop failure and support the productivity of small-scale farmers.

Keywords: Oyster mushroom, IoT, temperature and humidity monitoring, automation, web dashboard

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