

**“DEVELOPMENT OF IOT-BASED CONTROL AND MONITORING
SYSTEM OF MICROCLIMATE CONDITIONS INSIDE
A MUSHROOM GROWING HOUSE”**

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ABSTRACT

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Oyster mushrooms, such as *Pleurotus florida*, are cultivated using agro-wastes without composting. Oyster mushrooms are easy to grow, require less investment, and thrive in specific temperature and humidity conditions. However, traditional cultivation methods involve manual watering, leading to water inefficiency.

This research compared the cultivation of white oyster mushrooms using a conventional method and an IoT-based control and monitoring system. The study evaluated various parameters such as yield, cap size, stalk length, pinhead count, water consumption, and labor requirements. The results showed that the experimental system had a higher average yield and larger cap size compared to the conventional method. The pinhead counts were more consistent in the experimental setup, indicating better uniformity. In terms of water consumption, the spraying system showed more efficient water utilization compared to manual spraying. Additionally, the system reduced labor requirements significantly. These findings highlight the advantages of using an IoT-based control and monitoring system for white oyster mushroom cultivation.

Keyword: white oyster mushroom, yield, performance analysis, economic viability

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