

**DESIGN AND DEVELOPMENT OF TEMPERATURE AND HUMIDITY
CONTROL SYSTEM IN OYSTER MUSHROOM CULTIVATION ROOM
BASED ON INTERNET OF THINGS (IoT)**

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Abstract

Oyster mushroom besides being delicious is also consumed and has many health benefits, but its cultivation requires quite complicated care. Mushroom farmers have difficulty adjusting temperature and humidity in real time. If the temperature and humidity of the environment where the fungus grows are not as needed, it will inhibit the growth of the fungus. To overcome this, it is proposed to make a temperature and humidity control device based on the Internet of Things. In this study the main components used are the Dht11 sensor and the Esp8266 NodeMCU. Suitable temperature and humidity for oyster mushrooms is not more than 25 C° and not more than 80%. The temperature and humidity are detected by the Dht11 sensor and the measurement results from the Dht11 value are displayed on the LCD, then the temperature and humidity values are sent to a telegram. The DC fan functions to increase air humidity if the humidity is not sufficient for the needs of the mushrooms and the water pump functions to lower the temperature if the temperature in the kumbung is too hot. The use of the internet of things concept aims to make the work of mushroom farmers easier because farmers can monitor temperature and humidity and take action through the telegram application even though the farmer is far from the mushroom cultivation site as long as the device is connected to the internet network. The results of controlled oyster mushroom growth using this tool are far better than conventional/manual growth. Because the working system of this tool can control temperature and humidity according to the needs of ideal oyster mushroom growth.

Keywords: *temperature, humidity, dht11 sensor*