Design Of Electronic System For Automatic Mushroom Sprayer Using DHT 11 Temperature Sensor

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ABSTRACT

In Indonesia, a country famous for its agricultural products, agriculture plays an important role in the production of food, industrial raw materials, and energy through the exploitation of biological resources. Due to the lack of human resources and the use of manual processes, agricultural output in Indonesia is still low. Mushrooms are one of the high-value commodities that are grown organically in wet houses. Things needed during mushroom cultivation, such as regular watering to maintain stable humidity and temperature. To make it easier for farmers to monitor and manage environmental conditions remotely, this project builds an Internet of Things (IoT)-based temperature and humidity control system for mushroom barns. The two main parts of this tool are the ESP32 microcontroller and the DHT11 sensor. When the environment is not suitable, this device can automatically regulate the temperature and humidity using a fan motor or mist maker. The findings of this study demonstrate the usefulness of this instrument in maintaining an ideal growing environment for mushrooms, reducing the percentage of crop failures caused by inaccuracies in humidity and temperature. This research, conducted in Gebang Village, Patrang District, Jember Regency, offers mushroom farmers a method that can be applied to increase yields and harvest quality.

Keywords: temperature and humidity, parameters (HTC-2), DHT11 sensor, Esp32 microcontroller