

ABSTRACT

In the cultivation of oyster mushrooms, it is necessary to control the temperature and humidity in the mushroom house in order to produce optimal yields. Oyster mushroom will produce optimum growth at $<28^{\circ}\text{C}$ and 80-90% humidity. An alternative is needed to make a temperature and humidity control device for the mushroom house that will function to maintain temperature and humidity values at certain set-points based on the Internet of Things. In detecting temperature and humidity, the DHT-11 sensor is used which is processed by the WeMos D1-R2 microcontroller integrated with the Telegram application. The system will work to run actuators in the form of a mist maker and fan if the system detects that the temperature and humidity are below the set-point conditions and stops when the set-point has been reached. From the results of the tests carried out, it produced a prototype mushroom house that can be controlled using Telegram with a temperature sensor error value of 2,55% and a humidity sensor error value of 5,88%.

Keywords: Oyster Mushroom, *Internet of Things*, DHT-11, Actuator, Telegram.