Project Title Smart Mushroom Farm using Long Range Wireless

Communication Technology

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**Abstract**

The thesis aims to designs and construct a mushroom hatchery, That can control the environment within the hatchery to suit the flowering of mushroom with web applications and window applications that can monitor the environment and control the hatchery system and have applied for LoRa communication to serve as a communication medium between Mushroom Mode and internet area (STA Node) to solve the problem of house location without internet

The environment control system in the mushroom hatchery of

the microcontroller (ESP32LoRa) controls the entire system, uses an AM2315 sensor measures temperature and humidity, uses a BH1750FVI sensor measures brightness, environmental control devices such as fans, pumps, lamps, and has applied Current Sense Resistors to check the operating status of the device. The web application uses a microcontroller (ESP32LoRa) as a Web Server and uses the ngrok application installed on the Raspberry Pi to take Port forwarding to enable the web application to be run from anywhere that has access the internet. The window application can monitor and control the mushroom hatchery with the Serial Port between the microcontroller and the computer.

Conclusion of the experimental results The working of the system can work well. The mushroom hatchery experiments used fairy mushrooms for all 14 days of the experiment. The results of the experiment were as follows. Environment controlled greenhouses The average flower width was 7.66 cm and the total weight was 1.06 kg. The average width of the flower was 6.45 cm with the total weight of 0.6 kg.