

ABSTRACT

MONITORING SYSTEM OF TEMPERATURE, HUMIDITY, LIGHT, AND WATER PH IN SWALLOW'S HOUSE BASED ON INTERNET OF THINGS

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Swallow's nest is an export with high economic value. However, the shape of the swallow's nest also affects the purchase price, such as a nest that is too dry or a shape that is considered imperfect by the buyer. In general, in the swiftlet house, there are maintenance criteria that must be met by swallow nest cultivators, one of which is optimal air circulation. The ideal temperature should be between 26-29°C with 80-90% humidity. Another criterion is light, generally swallows live in caves so swiftlets like an atmosphere where the light is close to dark or a value of 0 lux, at least it's dim. The next criterion is the pH of the water, in the swiftlet house there is a pool that is used to suppress humidity, apart from that this water pool can be used by swallows to bathe or drink, from this, of course, a normal water pH is needed. From the existing problems, this study aims to facilitate swallow nest cultivators in monitoring temperature, humidity, light, and water pH in swallow houses where monitoring results can be monitored through the website, if the temperature, humidity, light, and water pH are not at normal, the system will provide notifications to the swiftlet nest cultivator's website. This system uses the Internet of Things or known as IoT which in the present era is developing rapidly in internet technology assisted by the NodeMCU ESP8266 so that it can connect to the internet, this research also uses the DHT11 sensor as a sensor used to determine the temperature and humidity in the swallow house, a Light Dependent Resistor (LDR) sensor to measure light intensity, and an air pH module to measure the acid or alkaline level of the water pool in the swiftlet house, where the data from the sensor will be forwarded to the web so that it can be monitored by swallow nest cultivators. From the results of tests carried out on swallow houses, it was found that the average temperature was 29.16°C with a normal description, humidity was 78.6% with an abnormal description, light was 0 or dark with a normal description, and the water pH was 4.41 with an acidic description.

Keywords: Internet of Things, Website, Swallow, NodeMCU ESP82667