ABSTRACT

Temperature, Humidity, Gas and Light Monitoring System for BSF Maggot Cultivation Based on Internet of Things (Study Case : Budidaya maggot pak amin Kecamatan sokaraja)

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BSF maggot (Black Soldier Fly) is essential as an alternative feed source with a high protein and nutrient content for lily fish farming. However, BSF growth maggot is susceptible to changes in environmental conditions such as temperature, humidity, light, and hazardous gas content. The research aims to design and build a system to monitor the environmental condition of the BSF maggot cage with a DHT22 (temperature and humidity) sensor, an MQ135 (gas) sensor and an IoT-based LDR (light) sensor.The system was designed using the prototype method with the NodeMCU ESP32 microcontroller. Evaluation is done using the blackbox method to ensure the system is running properly. Test results showed the highest temperature of 31.95°C and the lowest 30°C, highest humidity of 74% and lowest 71%, as well as gas detection by the MQ135 sensor with a highest 8.49 ppm and a lowest 7.5. This research is expected to help improve the quantity and quality of maggot production as an efficient and sustainable alternative feed source.

Keywords: Internet of Things (IoT),Maggot BSF, Monitoring, Prototype.