

ABSTRACT

Monitoring the application of the internet of things (iot) in increasing efficiency and productivity In duck farming (case study: pak gita duck farming, kalimanah district, purbalingga district)

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This study discusses the monitoring of the application of the Internet of Things (IoT) in improving the efficiency and productivity of Mr. Riswandi's duck farming. The aim of this research is to design and build IoT-based monitoring tools to monitor the condition of duck farms, especially with regard to environmental hygiene that can affect duck health and productivity. The monitoring device is designed using three sensors, namely the DHT11 sensor, the MQ-135 gas sensor, and the water pH sensor, which is connected to the NodeMCU ESP32 as a microcontroller. The sensor data is then sent to the Thingspeak IoT platform. The results of the monitoring will be displayed on a website specially designed to be accessible to the owner of the duck farm. The website also features notification via WhatsApp that serves as a reminder if the environmental conditions of the duck cage exceed the specified limit. With these tools and monitoring systems, the performance and productivity of duck farms is expected to increase. The methods used to design the system are prototyping, through phases of communication, quick planning, modeling, prototype development, and testing. Evaluations and trials include the one-month implementation of the system in the duck farm, as well as testing with the black box method to ensure the system runs properly. The results showed that the temperature in the duck cage ranges between 27-30°C, the humidity range between 71-74%, the ammonia gas varies between 5.49 -8.19 ppm, while for the PH ranges from 3.98-7.17. The results of the research showed that the average yield of eggs before the installation of the tool was about 800 grains and after the installation the tool in May the number of egg to 836 grains.

Keywords: lot, prototyping, monitoring, duck farming, Notification