

ABSTRACT

Technological developments in the digital era have encouraged the use of the Internet of Things (IoT) to make monitoring and controlling various systems easier. One relevant application is the development of a monitoring system for organic fertilizer produced from durian waste using IoT technology. This research aims to design an efficient and accurate monitoring system to monitor the production of organic fertilizer from durian waste.

The methods used in this research include literature studies to understand the characteristics of durian waste and the process of making organic fertilizer, as well as basic IoT concepts for developing a monitoring system. Next, the system design is implemented through the sensor design stage to measure critical parameters in fertilizer production, such as temperature, humidity and soil pH. Data obtained from these sensors will be sent via the IoT network to a monitoring platform that can be accessed online.

The result of this research is the design of an IoT-based organic fertilizer monitoring system that allows users to monitor the production conditions of fertilizer in real-time. With this system, farmers or organic fertilizer producers can quickly identify changes in temperature, humidity, and soil pH through an online interface. The average humidity value obtained is 69.79%, the temperature is 29.87°C, and the soil pH is in the range of 6.79. This has the potential to improve the efficiency of organic fertilizer production, reduce the risk of losses, and support sustainable durian waste management.

Keywords: *Internet of Things, organic fertilizer, durian waste.*