

ABSTRACT

Waste is a growing problem that continues to escalate. The increasing amount of waste can lead to accumulation, resulting in floods and deteriorating the overall health of the surrounding community. The quantity of organic waste entering the Final Processing Site (TPA) is remarkably high. One of the causes is inadequate waste management. The Ministry of Environment and Forestry (KLHK) notes that the waste composition is predominantly organic, accounting for approximately 60% of the total generated waste. This figure is indeed substantial. Therefore, we must manage organic waste. The process of producing liquid organic fertilizer begins with mixing all the ingredients and adding liquid-decomposing bacteria to expedite the production process. The construction of this monitoring system aims to monitor the humidity and temperature inside the liquid organic fertilizer reactor, providing convenience in checking the process. With this liquid organic fertilizer monitoring system, users can monitor the production process without directly inspecting the field. To facilitate this monitoring process, the implementation of the Internet of Things (IoT) is necessary. Hence, a device was designed to maintain the decomposition process. This system involves the use of microcontrollers, sensors, and wireless connections to link the liquid organic fertilizer reactor to the internet. Microcontrollers such as NodeMCU ESP8266 serve as the system's brain, responsible for collecting data from various installed sensors. It is equipped with a water sprayer with a controllable duration through the Blynk application. The control and monitoring results are displayed on an LCD screen and can also be accessed through the Blynk application. From the research conducted by the student, it can be concluded that the liquid organic fertilizer monitoring system can function as expected.

Keywords: Organic Fertilizer, Monitoring System, IoT, Temperature, Humidity