

Abstract

The background to this research is the problem of organic waste which contributes 41.2% of total domestic waste in Indonesia, which has the potential to create environmental problems such as methane gas emissions. Smart Maggot House is designed to overcome challenges in processing organic waste with maggots, such as long periods of time and environmental control which is still done manually. This research proposes the development of a Smart Maggot House based on the Internet of Things (IoT) as an innovative solution for sustainable organic waste management in Indonesia. By utilizing Black Soldier Fly (BSF) larvae or maggots integrated with automation and IoT technology, this system aims to optimize the biodegradation process of organic waste efficiently. The research methodology involves designing and developing a Smart Maggot House which integrates various technologies such as sensors. This system allows automatic monitoring and control of maggot environmental conditions, as well as waste stock management and fertilizer output through notifications on smart devices. The expected results of this research are the creation of a more efficient organic waste management system, reducing the burden on landfills, reducing greenhouse gas emissions, and increasing the production of economically valuable organic fertilizer and animal protein. In conclusion, the IoT-based Smart Maggot House offers a unique approach that combines BSF and IoT technology to overcome waste management challenges. organic in Indonesia, while supporting sustainable development goals and a circular economy Keywords: Smart Maggot House, Internet of Things (IoT), Organic waste