Abstract

In Indonesia, the lack of awareness regarding food safety poses serious issues, one of which is the use of formalin in tofu that potentially endangers consumer health. The main challenge lies in the absence of rapid and accurate detection methods to identify formalin contamination in tofu sold in traditional markets. This topic is highly relevant considering its direct impact on public health. Formalin contamination not only reduces the nutritional value of tofu but also leads to various serious health risks. Currently, there is still a deficiency in effective and efficient detection methods, creating an urgent need for more advanced technological solutions. The solution proposed through this research is the development of a formalin detection system for tofu using the TCS3200 color sensor integrated into the Internet of Things (IoT) platform. This system is designed to monitor color changes as an indicator of formalin presence, process data in real-time, and provide direct updates on food safety status. The implementation of this system successfully detected the presence of formalin in tofu with high accuracy, providing an effective solution to enhance food safety standards. This research contributes an efficient and innovative prototype for broader and more effective food safety monitoring.

Keywords: *food safety, formalin detection, tofu, Internet of Things, TCS3200 color sensor.*