

## **ABSTACT**

*Tofu is a traditional food that is very popular with Indonesian people. Many industries pay little attention to environmental impact standards in their production processes. As a result, there is water, soil and air pollution. Some industries also do not process wastewater according to established standards. This study aims to develop a monitoring and control system for tofu waste using the PH4502c sensor to measure waste water content and the MQ-135 sensor to detect ammonia gas levels. This system works by measuring these parameters and sending data to the ThingSpeak platform using ESP communication. Thus, it is hoped that the tofu waste monitoring system can help reduce the negative impact of tofu waste on the surrounding environment. The results of testing the accuracy of the pH sensor show that the sensor has a high level of accuracy. In testing using pH 4.00 water, the sensor produces an accuracy value of 99.46%. While in testing using water pH 6.86, the sensor produces an accuracy value of 97.12%. This means that the pH sensor is able to provide measurement results that are very close to the actual values at the two pH points. The test results using the MQ-135 sensor, based on the measured data, the average concentration of ammonia gas in an environment without ammonia gas was 0.107 ppm, while in the duck pen the concentration reached 9.89 ppm. This difference in the value of the concentration of ammonia gas indicates that in the duck pen there is a much higher level of ammonia gas. Research on QoS (Quality Of Service) on RSSI (Received Signal Strength) is measured in the form of negative values expressed in units of decibels milliwatts (dBm) taking 20 data and conducting experiments 5 times with a distance ratio of 4m, 5m, 6m, 7m , 8m.*

*Keywords: internet of things, tofu waste, MQ-135, Arduino uno, ESP8266 nodeMCU, pH sensor.*