

ABSTRACT

This research is entitled "Design and Construction of Monosodium Glutamate (MSG) Level Detection Using Conductivity Sensor (SEN0244)" which aims to: (1) design an instrumentation system to detect MSG levels, (2) implement the instrumentation system, and (3) analyze its capabilities and measurement results. MSG is a common additive that is often used to enhance the taste of food, especially soups. However, excessive consumption of MSG can cause health problems, so a tool is needed that is able to detect MSG levels quickly, accurately, and portable. This research uses the SEN0244 conductivity sensor which works by measuring the amount of dissolved substances in a solution. The sensor produces a signal that is processed by a microcontroller, then displayed digitally through a display system. The methods used in this research include a literature study regarding the properties of MSG and the characteristics of conductivity sensors, as well as experimental testing to calculate the level of accuracy and precision of the tool. The measurement results show that this tool is capable of detecting MSG levels in the range of 325 ppm to 19,155.7 ppm, with an accuracy level ranging from 33.36% to 95.68%, and a precision level between 0% and 1.75%. Thus, the designed instrumentation system can be effectively applied for MSG level detection.

Keywords: Monosodium glutamate, health, conductivity sensor, microcontroller.