ABSTRACT

Freshness and food efficacy in sliced chicken is important because it is rich in carbohydrates, fats, proteins, vitamins, minerals. Chicken that is suitable for consumption is chicken that is not contaminated with hazardous substances such as formalin. Sometimes sellers cheat by adding formalin preservatives. Formalin is a very dangerous substance when consumed or exposed to parts of the body. This will result in damage to digestion, irritation and may lead to death. In this study, formalin level detection devices have been designed to detect the level of formalin contained in chicken meat using the TCS3200 sensor. The chicken meat sample was given a Schiff reagent to determine the content of formalin in the chicken. The color changes from the TCS3200 sensor detection results will then be mapped into RGB base color by Arduino Atmega328. The calibration results of the instrument were obtained between sensors and objects of 3 cm with a relative accuracy of 98.25%, testing using a 50 ml beaker. The determination of levels is seen by significant discoloration of the measurement results. To determine levels, a fuzzy Mamdani method is used to declare the level of formalin content in chicken slices. Formalin ppm levels in chicken are displayed via LCD. The reliability of success tools for 0 ppm is 96%, 40 ppm is 92%, 80 ppm is 90%, and 200 ppm is 100%.

Keywords: sliced chicken meat, formalin, Schiff reagent, TCS3200 sensor, RGB color, fuzzy method Mamdani.