

ABSTRACT

Rice cake is made from rice raw materials where the cooking process is steamed or boiled. Because rice cakes contain a lot of water so that rice cakes are less durable in their storage. Therefore, sometimes there are some manufacturers who commit fraud. Usually manufacturers who commit fraud use substances that are harmful to the body. One of them is to add borax. The borax content in food is very harmful to the health of our body. Therefore, in this study, a tool will be made that can detect borax in rice cakes using the $KMnO_4$ reagent. In this study, the rice cakes used contained borax with variations in borax weight of 1 g, 2 g and 3 g. The instrumentation is based on the Arduino microcontroller, which uses the TCS3200 color sensor. The TCS3200 color sensor is used to detect the color of the mixing of borax rice cake samples with the $KMnO_4$ reagent. Furthermore, the colors will be selected according to what is detected by the TCS3200 color sensor based on the RGB color values. For the reliability of the instrument's chances of selecting a grocery sample at a concentration of 1 g is worth 92%, 2 g worth 94% and for a sample of 3 g worth 100%.

Kata Kunci: *borax, rice cake, $KMnO_4$, TCS3200 sensor, RGB value.*