ABSTRACT

Rice is the most widely used food ingredient in Indonesia. One of the methods used to make rice color better is by mixing the rice with a bleaching agent commonly used in clothes. These bleaches generally contain substances that should not be consumed by humans, for example, chlorine (Cl). A solution containing chlorine has the characteristic that when dissolved with 10% potassium iodide (KI) and 1% starch indicator it will change color according to the amount of chlorine mixed in the solution. The color of the solution can be measured using the TCS3200 sensor by measuring light waves by a photodiode which is then converted into frequency. The TCS3200 sensor is sensitive to external light. Therefore, a light-tight chamber is constructed to ensure that the sensor is accurate. The smallest value of chlorine content in rice that can be detected by the instrument is 20 ppm with a range of 225±1 for red, 221±2 for green and 225±2 for blue. The ppm conversion data that has been obtained has the highest accuracy in measuring the chlorine content of 500 ppm, which is 99.71%, while the smallest accuracy is at 300 ppm with an accuracy of 98.66%.

Keywords: *Rice, Chlorine, Color Sensor*