

DESIGN AND CONSTRUCTION OF A PALM SUGAR QUALITY DETECTION TOOL BASED ON HSV COLOR SPACE BASED ON ARDUINO

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ABSTRACT

*Palm sugar (*Arenga pinnata* Merr) is a natural sweetener that improves the taste of food. Palm sugar is needed in making cakes, soy sauce and other food products. Palm sugar production is still very simple, where the production is home production. Palm sugar is still used in making food even though the quality of palm sugar, for example, is still categorized as quite good. Palm sugar producers continue to sell their palm sugar production to the market in any category and the public continues to buy and use it as food, without them knowing the quality of palm sugar. Therefore, a system or design was created to detect the quality of palm sugar using the TCS3200 Sensor with the Threshold method. Basically, the TCS3200 sensor only reads RGB values, therefore it needs to be converted to HSV (Hue, Saturation, Value) values as a threshold reference in the Arduino program, so that you can know which quality of palm sugar is good and which is not good. There were 2 types of palm sugar samples tested, namely palm sugar with a dark brown and light brown color. Prototype testing was carried out on 10 dark brown samples and 10 light brown samples with accuracy values of 95%, precision 100%, sensitivity 90% and specificity 100%.*

Keywords: Palm Sugar, Quality, Threshold, HSV.