ABSTRACT

DESIGN AND DESIGN OF A PROTOTYPE TO MEASURE THE QUALITY AND LEVEL OF SWEETNESS OF PLAIN SUGAR ON IOT BASED LAST BREAD

(CASE STUDY: UKM UKHRO BAKERY)

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20102317

The quality of granulated sugar is an important factor in the bakery industry because it can affect the taste and quality of the final product. As a baker, choosing quality granulated sugar and the right level of sweetness is very important to make high quality bread. However, in general, measuring the suitability of granulated sugar solutions is still done manually by looking at the color of the granulated sugar, so this takes a long time to determine which granulated sugar solution has appropriate suitability. This was done because bread manufacturers did not have the right tools to measure the suitability of the granulated sugar solution accurately and quickly. Based on the problems that have been described, a tool was created that can help bread producers in selecting granulated sugar as a production ingredient. The tools built include Arduino Uno NodeMCU Esp8266 as a Microcontroller, pH Sensor, Photodiode Sensor and Turbidity Sensor. The aim of this research is to make it easier for bread producers to select granulated sugar that has the quality and level of sweetness that suits the wishes of the bread producer through a prototype tool for measuring the suitability of granulated sugar solution in IoT-based white bread production. Using observation methods in solving problems, and rapid prototyping methods in creating systems. The results of this research show that the best quality sugar has a turbidity level range above 10 - 50 NTU with a normal pH level of 6.5 - 9 and the solution viscosity is at 2 volts with the conclusion that the three sugar samples with the Raja Gula brand have adequate suitability standards for used in the production of white bread.

Keywords: Sugar, NodeMCU Esp8266, Prototype.