DESIGN OF CRYSTAL GUAVA SORTING SYSTEM BASED ON IOT (INTERNET OF THINGS) WEIGHT USING CONVEYOR

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ABSTRACT

Indonesia is a country that has abundant natural resources because its soil is fertile and suitable for agriculture. One of the main commodities of agricultural land is fruit. The potential and market opportunities for the local fruit industry continue to increase. The fruit production commodity that is increasing is guava. To produce guava that has high selling power, it needs postharvest handling. One of them is the sorting process. As a commodity that is liked by many people, guava requires a sorting process, because the market demands certain conditions that must be met. Therefore we need a tool that can sort guava fruit based on weight based on IoT (Internet of Things) using a conveyor. This tool uses a Nodemcu ESP8266 controller, a loadcell sensor to measure the weight of the fruit, a servo motor to move the guava fruit to the conveyor and direct it to the container, the proximity sensor to calculate the counter of the sorted guava fruit in the container and detect guava fruit approaching the sensor. to drive the servo motor to its original angle, DC motor as the conveyor drive. Fruit sorting results were divided into three categories: grade A weighing 200-250 grams, grade B weighing <199 grams and grade C weighing > 251 grams. Fruit sorting results can be monitored using Blynk. Accuracy testing was carried out 10 times. Based on the tests that have been carried out, it is known that the average loadcell sensor error is 2.4% and the average proximity sensor error is 0%.

Keywords: Sort, ESP8266, Loadcell, Proximity, IoT