

COFFEE FRUIT SORTING SYSTEM BASED ON RATE LEVEL AUTOMATICALLY

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ABSTRACT

Coffee is a plantation product in Indonesia that has a high selling value and is also a source of foreign exchange income for the country. To get quality coffee fruit, proper post-harvest is needed, and the coffee fruit color sorting process is a way to sort coffee fruit that has been harvested by differentiating the color of the coffee fruit to get the best coffee fruit. Therefore, a tool for sorting coffee fruit ripeness based on color was designed which was controlled using an ESP 32 microcontroller and a TCS 3200 color sensor. This tool is expected to provide time efficiency and convenience in sorting coffee fruit. This method is carried out sequentially in order to obtain a good workflow so that it can be used as reference material for activities carried out by researchers to obtain the expected results and can be implemented in subsequent research on coffee fruit sorting. testing method with different levels of maturity where out of 10 trials, with coffee cherries of different levels of maturity being tested randomly, each test consisted of 3 trials. In the first to fifth, eighth and tenth tests, the system was able to detect coffee cherries with different levels of maturity by 100%. This shows that in the test experiment, the system did not make any detection errors, so the error recorded was 0%. Meanwhile, in the sixth, seventh and ninth tests, there were 2 errors which were influenced by the color of the coffee fruit being less red or the green ones were almost yellow and also influenced by the small size of the coffee fruit. These results show that the sorting system shows that the sorting system has a good success rate. From the results of coffee fruit sorting, the TCS3200 sensor was able to detect coffee fruit. The results of the first test showed an average of 0.7 out of 1. The results of the second test were 0.86 out of 1, finally the third test showed an average of 0.79.

Keywords: Coffe, Coffee fruit sorting, TCS3200, ESP32.