

IMPLEMENTATION OF FUZZY LOGIC WITH RGB VARIABLE IN TOMATO FRUIT SORTING

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ABSTRACT

Tomato is a fruit that is often consumed by the people of Indonesia, and is a staple that is easily found in Indonesia. In the process of harvesting tomatoes, tomatoes will be selected or sorted for distribution to customers, generally the sorting process still uses human power so it requires a lot of time and energy which is relatively longer and allows the results obtained in the separation to be less than optimal. Based on these problems, the author intends to design a tool that can sort tomatoes based on fruit color using a conveyor using the fuzzy logic method. The results of this study are expected to help tomato farmers to minimize human error in the tomato fruit sorting process. Based on the research that has been done, the results of system testing by calculating the results of the MATLAB application, the system accuracy level in controlling Servo1 is 99.961% and Servo2 is 99.856%. And the application of the Fuzzy Logic Controller on the tomato fruit sorter based on RGB variables using the TCS3200 sensor, has a 100% success rate from 30 times of testing. In other words, this tool can work well, with this research tomato farmers can sort tomatoes well and reduce human error in sorting tomatoes.

Keywords : *Tomato, Sort, TCS3200, Fuzzy, MATLAB*