

Abstract

The machine is a tool that can help and facilitate human activities in the work. Along with the development of the era of the globalization era, the world is also increasing. As we know that in Indonesia in general still use human labor (manual) in working mainly in agriculture. With the machine, it will help human activities shorter. Most of every worker often error in the field of sorting. In general, humans are able to work around 7 to 8 hours per day. Working more than this time period sometimes makes workers lose focus on their work. So that the current automation system was chosen to overcome this problem. Based on the problems that have been outlined, in this thesis an idea arises in building a system that can separate ripe and raw fruit by utilizing the color image of tomatoes. Color image processing captured by webcam cameras is processed and processed by Raspberry Pi so that image data will be translated into red, green, blue (RGB) data and stored in the form of dataset.csv. The data was studied by the K-Nearest Neighbor (KNN) algorithm for classification of predictive maturity of tomatoes. The results obtained for performance accuracy were 93.02% and accuracy in the K-Nearest Neighbour KNN method was 88%.

Keywords: Tomato fruit, camera webcam, KNN, RGB, automation, sorting.