

## **ABSTRACT**

Beefsteak Tomato is a popular tomato variety with characteristics of large size, thick flesh and delicious flavour. Demand for high-quality Beef tomatoes continues to increase, but determining the quality of tomatoes requires a sorting process to determine which tomatoes are ready for distribution. The sorting process is a key factor in determining quality, manual sorting by farmers often results in errors and inconsistencies in colour identification. In addition, manual classification can cost more and can take a long time. So farmers have to think about a lot of considerations in classifying. This research focuses on the use of Raspberry pi 4 using KNN and HSV methods for beef tomato fruit colour classification system. Several solutions have been proposed to the problem, namely the classification of tomato fruit colour can be monitored on the LCD and the Mobile Application provides notifications and the tool is easy to use. Classification of tomato fruit using KNN and HSV provides classification results into 4, namely red, orange, green and reject rotten tomatoes. This method also has an accuracy rate of around 88.57% so the system still needs to be developed further. The use of mobile applications and LCDs is to provide information on how many tomatoes have been classified into red, orange, green and reject so that farmers do not need to do the recalculation.

Keywords: Beef tomatoes, color classification, KNN, HSV, Mobile Application.