ABSTRACT

Technological developments in various fields are increasing, such as in offices, plantation industries, etc. In the starfruit plantation industry, for example, many plantation industries still do the sorting manually, that is, with human power to sort the fruits one by one. In this case, of course, requires extra time and effort. Therefore we need an automatic sorter based on color using the TCS3200 color sensor. The purpose of this research is to be able to design and make an automatic star fruit sorter based on color which can later be utilized by the starfruit plantation industry properly. The research method used is conducting a study on the maturity of star fruit and testing in the design of hardware and software. The type of star fruit used is honey star fruit, totaling 4 pieces, each of which was tested 30 times. From the results of color sensor calibration to star fruit directly, fruit with good quality has a red value between 30 to 96, a green value between 40 to 98 and blue between 50 to 99. In addition, the fruit is considered of poor quality. The results of this study indicate that the success rate of the tool in sorting is 83.33%. For the QoS value of the 4 tested pieces, the average throughput value is 9706.5781 bps, the average packet loss value is 0.405%, the average delay value is 169.5885 ms and the average jitter value is 169.502 ms.

Keywords: *Starfruit, Sorting, Fruit Quality, Sensor TCS3200, QoS.*