Abstract

The problem that is very urgent as the agricultural industry continues to develop is that errors in weighing golden Langkawi melons can have a negative impact on agricultural productivity. This research developed a system for measuring the weight of Langkawi golden melons using image processing and the body surface area method. This system is expected to provide a more practical and accurate alternative to the digital weighing method. The BSA method is used to calculate the surface area and weight of fruit based on the input image, with Bounding Box integration to focus on objects in the image and the use of streamlit as a user interface. This research aims to develop a system for measuring the weight of Golden Langkawi melons using digital image technology and the Body Surface Area (BSA) method. This system is expected to provide a more accurate and practical alternative to traditional weighing methods. The BSA method is used to calculate the surface area and weight of fruit based on digital images, with Bounding Box integration to focus on objects in the image and the use of Streamlit as a user interface. The research process includes image data collection, image processing, and evaluation of results using Mean Absolute Error (MAE) testing to determine the accuracy of weight calculations. The research results for calculating the weight of Langkawi golden melons show that the error in the application calculations is very high compared to digital scales (between 90 and 20 grams), the overall MAE value of 0.10 provides room for improvement in the accuracy of application predictions. Analysis of test results shows that the BSA method has good potential, but the accuracy of the application is still influenced by several factors that need to be improved in further research.

Keywords: Golden Langkawi Melon, Image Processing, Body Surface Area, Bounding Box, Sreamlit