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STARFRUIT RIPENESS CLASSIFICATION SYSTEM BASED ON IMAGE PROCESSING TECHNIQUE

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA Pulau Pinang. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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ABSTRACT

Starfruit ripeness classification system based on image processing is a system to identify the ripeness of starfruit whether the starfruit is unripe, ripe or overripe condition. This is the automation system of identifying the ripeness of starfruit replacing the conventional starfruit inspection. Currently the inspection of conventional system used by farmer to inspect the ripeness is time consuming and the accuracy of this operation cannot be guaranteed. This system is suitable used in agriculture to inspect the ripeness of fruit. The main objective of this project is to classify the ripeness of starfruit by using Artificial Neural Network based on image processing technique which for this project RGB counter value component will be used. For this project the samples of different level of ripeness were collected, image processing technique and image classification by using neural network were used. Starfruit images were captured using Canon EOS 7D with 18 megapixel. 180 samples were used as training samples for neural network. After training samples another 75 samples is used for testing in order to identify the ripeness of starfruit and to calculate the accuracy of the process. At the end result of the project about 73 samples of starfruit can classified correctly and the accuracy achieve for this project is 97.33%. This shows that the classification of starfruit based on image processing technique using artificial neural network can be used to classified ripeness.

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