CLASSIFICATION OF PAPAYA FRUIT RITH LEVEL USING ARTIFICIAL NEURAL NETWORK METHOD BASED ON FRUIT SKIN COLOR

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ABSTRACT

Papaya is a fruit rich in health benefits, including high vitamin C content and good fiber for digestion. Determining the right level of ripeness is very important so that papaya is ready to be consumed. This study aims to classify the ripeness level of papaya fruit using an artificial neural network (ANN) algorithm with the backpropagation method, based on the analysis of fruit skin color. The research stages include image data collection, pre-processing, feature extraction using the Gray Level Co-occurrence Matrix (GLCM) method, and classification using ANN. The extracted features include energy, contrast, entropy, and homogeneity. The ANN model was trained with 70 training data and tested using 30 test data. The results showed that the ANN model was able to classify the ripeness level of papaya with 100% accuracy in 0.02 seconds. Although the results obtained were very good, this study has limitations in the number of datasets and the type of papaya used. Further development is needed to ensure that this method can be applied more widely.

Keywords: Papaya, Classification, Image, Artificial Neural Network, Gray Level Co-occurrence Matrix.