

Penerapan Seleksi Fitur pada Metode *K-Nearest Neighbor* untuk Identifikasi Kerusakan Buah Tomat (*Lycopersicon esculentum L.*)

*Application of Feature Selection in the K-Nearest Neighbor Method for Identification of Damage to Tomato Fruit (*Lycopersicon esculentum L.*)*

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ABSTRACT

*Tomato (*Lycopersicon esculentum L.*) is one of the most horticultural crops that have economically high value in Indonesia. The researchers applied feature selection to the K-Nearest Neighbor method to identify damage to tomatoes (*Lycopersicon Esculentum L.*) to increase government efforts through counseling to make it easier for farmers to recognize the damage of tomato fruits quality and reduce the risk of crop failure. The method used in this study is the K-Nearest Neighbor algorithm with 4 GLCM features input parameters: 0° korelasi, 45° korelasi, 90° korelasi, 135° korelasi, 3 input parameters from the morphological feature extraction, namely: perimeter, area and shape factor. The use of digital images is an effective and efficient way to identify damaged tomatoes without damaging the fruit. By using the k-nearest neighbor method, from the comparison of k values, the highest percentage of accuracy is K=3 with training results of 87% and testing of 70%. The results of the feature selection obtained a comparison with a suitable level of accuracy for k-nearest neighbor, namely morphology and correlation GLCM features have better accuracy compared to other morphological and GLCM features.*

Keywords : *Tomato, Morphological Feature, GLCM, K-Nearest Neighbor*