The Classification of Keprok Citrus Fruit (Citrus Reticulata/Nobilis L) Based on The Size Code of Digital Image Processing

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ABSTRACT

Citrus fruit is not only sold in Indonesia, but also in international market, because Indonesia becomes one of citrus fruit producer that has a big potential in fulfilling the consumer desire. Meanwhile, the selling of citrus fruit determines based on 2 factors, size and quality. This size is measured by using SNI. Nowadays, the size of citrus fruit is determined visually by comparing the citrus fruit or measuring manually and involving human being in taking decision. This process has many weakness as human error, due to the human assessment is subjective. Therefore, this research has aim to make an automatic system to determine the size of citrus fruit based on Standar Nasional Indonesia regulation of Keprok citrus fruit quality (SNI 3165:2009) using image processing technical and the method used is K-Nearest Neighbor (KNN). KNN is a classification method to an object based on the learning data that closest with the object. This method has aim to classify new object based in the attribute and training sample. Before doing the calculation using k-nearest neighbor method, we have to determine K value. Whereas, the segmentation process of image processing is done by finding the area, perimeter, metric, and diameter. This measuring process use matlab application by breaking RGB color to see clearer and sharper edges. The result of this research shows that system made is able to identify the size needed in Standar Nasional Indonesia.

Keywords: *Citrus Fruit, Size of Citrus Fruit, Image Processing, K-Nearest Neighbor*