ABSTRACT

Shallots are widely used by Indonesian people for daily life. The types of shallots have a distinctive taste of each, so that the flavor will be maximum out if the onion is intended for the right seasoning. However, some farmers in the process of observing the type of shallots ready for harvest still use manual methods with human visual vision so that a system of identification of onions is made.

In this final project, the image used is the image of shallots, then the design of the shallot type system is based on statistical texture analysis using the Gray Level Co-occurrence Matrix (GLCM) feature extraction method and classifying it with the K-Nearest Neighbor (K-NN) method so the results will be obtained from the classification of the types of Bima Brebes shallots and Sumenep shallots.

The system designed is able to classify Bima Brebes onions and Sumenep onions. The total data used by 160 images consisted of 64 training data and 16 test data for each class. The results obtained the best accuracy rate of 100% with a computing time of 0,6018 seconds. These conditions are obtained when using the GLCM parameter using the Energy, Homogeneity, Contrast and Correlation texture features with a quantization level of 8, at an angle of orientation of 0◦ and a distance of 3 pixels, whereas the K-NN parameter uses an Euclidean distance and a value of $k = 1$.

Keywords: Shallot, Gray Level Co-occurrence Matrix (GLCM), K-Nearest Neighbor (K-NN).