ABSTRACT

Indonesia is one of the country's largest tea producers. The Ministry of Commerce records the export value of the tea in 2017 for 1,826.8 million US dollars. So that the quality and quality of the produced tea should be very noted, from the planting of tea crops, picking up the tea leaves, to the processing of tea leaves into ready-to-serve teas. The picking of tea leaves during this time the farmer is only based on the quotes from the planting block. If the block is already arriving, then the block is taken in a thorough plucking. Weather is one of the factors that affects not the quotation time.

The study designed a tea leaf maturity level identification system based on digital image processing. Sampling as many as 30 samples of the tea leaf image of the Peko (P + 2) in each block with different picking times. The image of the tea leaves segmented, images that have been segmented later in the image extraction. The image is then transformed into the color feature of YCbCr. After obtaining the Luma and chroma values, the classification using centroid is further. Then the extraction and classifying data is a system database which will then be used during the testing process.

Tea leaf maturity identification system is designed using two stages of process is train and test. The Total data of Peko tea leaves (P + 2) is used as much as 90 training images and 90 test images. The maturity classification of tea leaves uses a Centroid Clustering method with a number of Centroid 10 dots based on YCbCr color space and a minimum, maximum, and variances statistical feature get an accuracy value of 80% and computation time of 2.80 seconds.

***Keywords**: quotation time, type of quotation, color feature YCbCr, Centroid Clustering*