

## **ABSTRACT**

The plantation sector plays an important role in economic activity in Indonesia, one of the main plantation commodities is tea. One of the manufacturing companies engaged in the tea plantation sector is PT. Perkebunan Nusantara VIII producing Orthodox black tea. In meeting the market demand, the tea produced must meet the standards and quality, therefore the need for quality control. PT.PN VIII still uses quality testing process done manually using organoleptic tests such as visual inspection and scent by trained evaluation officers. But there are problems arising from manual quality testing, that is, inaccuracies in conducting quality judgments and are subjective. In this research, designing the classification of quality of tea using image processing with Support Vector Machine method. This process uses the color feature extraction with several parameters namely, the average of red, green, blue of the RGB layer and the hue, saturation, value of the HSV layer as input for SVM. This study used 200 samples of training data consisting of two categories of quality, ie 100 samples of Lip 2 and 100 samples of Lip 4. Use 60 test data for offline and real time testing. Classification yields an accuracy of 93% for offline testing and 92% for real time testing with an average processing time of 0.18 seconds.

Keywords : Tea Quality Inspection, Image processing, Support Vector Machine, MATLAB, PT.PN VIII