

## **ABSTRACT**

Melinjo with latin name *Gnetum gnemon* has many benefits. Old seed of emping melinjo is a main material for making emping which has high economic value. Emping melinjo industry is one thing that is very important for the district of Bantul as a weapon to continue to improve local economic conditions. Emping melinjo marketing from Bantul is widespread in the country, even emping melinjo from Bantul already exported to several countries in Asia, Europe and the United States. In marketing, there is classification based on quality, the higher the quality the higher the price.

This final project has aim to produce a tool that can process the image and classify the quality of emping and to analyze the performance using the analysis of shape (structure) and the colors used. The quality of chips that classified emping melinjo in this study includes 4 qualities: first class, second class, third class, and non-quality.

Results from this image processing will be input on patternrecognition and identification so can be classified from its characteristics of existing conditions in each image from emping melinjo by getting some special characteristics of each image melinjo chips. The method used to identify the chips is melinjo Kohonen neural networks - SOM (Self Organizing Maps) because ANN is a computational model of the human brain which is capable of performing calculations, introduction, observation and decision-making. From the experiments with feature extraction using color analysis of the structure and the classification accuracy melinjo quality from emping which can be obtained is 100% for training data and 96% for test data.

Keywords: emping melinjo, Feature Extraction, Neural Network, Kohonen Self Organizing Maps.