

## ABSTRACT

Selection of raw ingredient greatly affect soybean production. And to maintain consumer confidence, we need a system based on digital image processing to classify soybean as raw ingredient based on quality. Can be classified into three types of groups, namely soybean : soybean quality 1, 2 quality, and quality 3 .

In this final project using SVM (Support Vector Machine) for classification and feature extraction using LBP (*Local Binary Pattern*) to obtain information on each input image. In this final project consisting of a preprocessing process of resizing operations and RGB to grayscale. To analyze the accuracy and computational time used 3 kinds of kernel options are: 5, 7, 9, with variant P,R :(1,4), (1,8), (2,8). Variants of SVM kernel parameters using (Rbf and polynomial) and determination of multiclass SVM (oneagainstone and oneagainstall) effect on the accuracy of the results and computation time .

From the test results, the best variant of the SVM kernel is the kernel polynomial, yielding 93% accuracy and the best accuracy results on multiclass SVM is oneagainstone the value of 74.88%. Change parameter value (P,R) and the kernel option affects the computational time and accuracy, with the exception of the kernel Rbf.

Keywords : soybean , SVM ( Support Vector Machine ), LBP ( Local Binary Pattern )