

## ABSTRACT

### IDENTIFICATION DISEASES OF COCOA FRUIT USING FEATURE EXTRACTION METHODS GRAY LEVEL CO-OCCURRENCE MATRIX AND COLOR MOMENTS ON ANDROID-BASED APPLICATION

Cocoa is one of the important commodities in Indonesia. However, according to data from ICCO (*International Cocoa Organization*), cocoa production in Indonesia decreases every year. One of the reasons is the diseases that attack cocoa fruit. The role of technology is needed to handle this problem. The technology can also be used to detect the diseases of cocoa fruit. The method that can be used are extraction of texture and color features. The *Gray Level Co-occurrence Matrix* (GLCM) algorithm is applied to detect images based on the texture feature. The *Color Moments* algorithm can be used to detect images based on the color feature. Earlier researches stated that the use of both algorithm can detect an image with various textures and colors. In this research, the GLCM algorithm will be combined with Color Moments to extract the value of digital image features from cocoa fruit and implemented on Android-based mobile application. Extraction results are used as training data. The process of training data using the Weka 3.8 application. The classification method applied to Weka 3.8 is SVM (SMO). This research resulted in an accuracy rate of 91,43% in detecting disease from 105 images of cocoa fruit tested.

Keywords: cocoa, feature extraction, GLCM, *Color Moments*