

ABSTRACT

Chili is a vegetable that has the highest production in Indonesia, thus making chili the highest rank of harvested area compared to other vegetables. With high production, farmers' incomes increase and create jobs for cultivating chili plants. Cultivation of chili plants is a farming activity that is not easy and often crop failure occurs because chili is very susceptible to disease or pests. Pests or diseases that attack chili plants are very detrimental to farmers if they are not handled quickly. To deal with chili that is attacked or affected by the disease, farmers must know and be able to identify it.

To overcome this, in this final project, a system is designed that can detect chili disease based on chili leaf imagery based on digital image processing, so that objective and precise results are obtained. This system is made using a mobile phone camera as a medium for image acquisition. The acquired image is then used as a training image and a test image. Determining the reference image through the process of changing the RGB image to grayscale which will then be extracted using the Gray Level Co-occurrence Matrix (GLCM) method, and classification using the Support Vector Machine (SVM) method.

The results of this final project get an accuracy of 95% obtained in a comparison of 75% training data and 25% test data with parameters of 3 characteristics (contrast, correlation, and energy) and 4 characteristics (contrast, correlation, energy, and homogeneity) on feature extraction and the type of kernel is polynomial and multiclass is OAO (One Against One) in the Support Vector Machine (SVM) parameter. With this system, it can be used as a precise standard of accuracy in detecting chili diseases.

Keywords: chili leaves, GLCM, SVM