Abstract

In agricultural field, paddy cultivation plays a vital role. But their growths are affected by various diseases. There will be decrease in the production, if the diseases are not identified at an early stage. The main goal of this work is to develop an image processing system that can identify and classify the various paddy plant diseases affecting the cultivation of paddy namely brown spot disease, leaf blast disease and bacterial blight disease. This work can be divided into two parts namely, paddy plant disease detection and recognition of paddy plant diseases. In disease detection, the disease affected portion of the paddy plant is first identified using Haar-like features and AdaBoost classifier. The detection accuracy rate is found to be 83.33%. In disease recognition, the paddy plant disease type is recognized using Scale Invariant Feature Transform (SIFT) feature and classifiers namely k-Nearest Neighbour (k-NN) and Support Vector Machine (SVM). By this approach one can detect the disease at an early stage and thus can take necessary steps in time to minimize the loss of production. The disease recognition accuracy rate is 91.10% using SVM and 93.33% using k-NN.
References


Index Terms
Keywords

Pre-processing, Disease detection, Disease recognition, Haar-Like features, AdaBoost classifier, SIFT features, k-NN classifier.