Abstract

In agriculture, plant infections are responsible for the reduction in the production of citrus fruits which causes a major economic loss. In plants, citrus is used as a major source of nutrients like vitamin C throughout the universe. However, ‘Citrus’ diseases badly affect the production and quality of citrus fruits. Over the years, image processing techniques have been widely used for detection and classification of citrus diseases but a novel model for such challenge has not been properly explored. Hence, the need for a model that will be able to label the diseases accordingly.

A model for detection and classification of citrus diseases using feature selection and support vector machine (SVM) was developed. The method consists of two primary phases; (a) detection of lesion spots on the citrus fruits; (b) classification of citrus diseases. The citrus lesion spots are extracted by an optimized segmentation method using K-means, which was performed on an enhanced citrus image. The selected features are fed into Support Vector
Machine (SVM) for the citrus disease classification, and the model tested with various test images that consist of healthy and diseased citrus fruits.

The model shows a better performance than previous models at 95% accuracy.

References


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Index Terms
Keywords

Support Vector Machine, Feature Extraction, Feature Selection, Citrus Disease