AN ALEXNET AND XCEPTION-BASED APPROACH FOR CITRUS PLANT DISEASE DIAGNOSIS THROUGH LEAF IMAGE PROCESSING

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ABSTRACT

Orange is a significant plant with high economic value. However, diseases affecting orange plants can lead to reduced yields and compromised fruit quality. One indication of disease is the presence of spots on the leaves. This study aims to classify orange leaf diseases using Convolutional Neural Networks (CNN) with the AlexNet and Xception architectures to assist farmers in identifying diseases in orange plants. Image data of orange leaves was collected and processed using CNN to develop a classification model. This model is expected to enable farmers to identify orange leaf diseases easily and accurately, allowing for the implementation of appropriate preventive and treatment measures to enhance yields. The results of the conducted program indicate that the accuracy achieved by the AlexNet architecture is 97%, while the Xception architecture than with AlexNet, which can be attributed to suboptimal training data.

Keywords: Orange, CNN, Alexnet, Xception