

ABSTRACT

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IDENTIFICATION OF DISEASE IN MANGO LEAF USING THE CONVOLUTIONAL NEURAL NETWORK(CNN) METHOD BASED ON SMARTPHONE.

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Keywords: Mango Leaf, *Convolutional Neural Network*, Disease, Dataset, *validation, train, test*.

(xv +105 +attachment)

Mango production and quality are often disrupted by various plant diseases, particularly those affecting mango leaves. Manually identifying diseases on mango leaves is time-consuming and requires specialized expertise, making it difficult for mango tree owners to quickly recognize leaf disease issues, which risks reducing mango productivity and quality. Therefore, this research aims to develop an application for identifying diseases on mango leaves by capturing images through a smartphone camera or from the user's gallery, making it easier for users to identify diseases on mango leaves. The method used to identify mango leaf diseases is Convolutional Neural Network (CNN). This study involves eight classes of mango leaf diseases: Anthracnose, Bacterial Canker, Cutting Weevil, Die Back, Gall Midge, Healthy, Powdery Mildew, and Sooty Mould. The dataset consists of 4,000 images, divided into three parts: 60% for training, 20% for validation, and 20% for testing per category. The validation data achieved an accuracy of 0.9438 and a loss of 0.1914 after the epochs. The training data achieved an accuracy of 0.9328 and a validation loss of 0.1320. The overall accuracy on the test data, as indicated by the confusion matrix, was 94.63%.

References (2016-2023)