

ABSTRACT

Mango fruit diseases pose a challenge for farmers as their symptoms often appear similar, making visual identification difficult. This research aims to develop a mango disease classification system using the Convolutional Neural Network (CNN) algorithm, implemented in an Android application. The designed CNN model consists of several convolutional layers, pooling layers, dropout, and fully connected layers. The dataset includes five classes: alternaria, anthracnose, black mould rot, stem end rot, and healthy mangoes. The dataset used consists of 1700 images divided into 80% training data and 20% test data. The model was trained using the Adam optimizer with a certain learning rate and categorical crossentropy as the loss function. The best model evaluation results were obtained using max pooling and a learning rate of 0.001, showing that the developed model achieved an accuracy of 98.14% and a loss of 0.0801. The trained model was then converted to TensorFlow Lite format and implemented into an Android application, allowing users to classify mango diseases in real-time or through image uploads. This approach enables farmers and the general public to detect mango diseases quickly and accurately.

Keywords : *Convolutional Neural Network, Mango, Fruit Disease, Image Classification, Android*