ABSTRAK

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CLASSIFICATION OF BANANA LEAF DISEASE USING CONVOLUTIONAL NEURAL NETWORK WITH THE INCEPTION V3 ARCHITECTURE

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(x + 60 + appendices)

Banana plant (Musa paradisiaca L.) is one of the most widely grown plants in the world. This plant consists of the morphology of roots, stems, leaves, flowers, and fruit. Indonesia has great potential in banana cultivation; however, farmers often face challenges, particularly from diseases that attack banana leaves. Some of the main diseases that hinder cultivation are Black Sigatoka, Moko disease, insect pests, Panama disease, and Yellow Sigatoka disease. The various patterns of these diseases on banana leaves make it difficult to distinguish between them, thus requiring technology for easier detection. One such technology is machine learning, which can classify the types of diseases found on leaves.This study implements a deep learning model using the TensorFlow library. The model was developed to classify 6 classes of diseases using a Convolutional Neural Network with the pre-training Inception V3 model. This model was built using 358 pre-processed image data obtained from Kaggle. For the dataset division, as many as 248 images were used for training data, 70 for validation data, and 40 for testing data, with a division ratio of 70% training, 20% validation, and 10% testing. The results from the testing phase show that the model achieved an accuracy of 90% and can classify diseases correctly.

References (2019-2024)