

ABSTRACT

Diseases in rice plants are a major challenge in Indonesia's agricultural sector that can disrupt crop yield stability. Traditional disease detection requires significant time and resources. In this study, we developed a disease classification model for rice plants through leaf images using a Convolutional Neural Network (CNN) based on the MobileNetV2 architecture. This technology offers a solution to enhance accuracy and efficiency in identifying rice plant diseases. MobileNetV2 was chosen for its ability to reduce computational and memory requirements and its proven effectiveness in various image classification tasks with high accuracy. The dataset used consists of leaf images of rice plants with six disease classes, including blast, blight, tungro, and brownspot. The classification process includes image preprocessing, such as resizing, rotation, and flipping. The study results show that the CNN model based on MobileNetV2 achieved an accuracy and f1-score of up to 99%, demonstrating its effectiveness in classifying diseases in rice plants. It is hoped that the results of this study can contribute to increased agricultural productivity and food security in Indonesia.

Keywords : *Convolutional Neural Network (CNN), Rice plant disease detection, Image classification, MobileNetV2.*