

ABSTRACT

Rice plant (Oryza sativa L.) is one of the rice-producing crops that are the source of carbohydrates for the majority of the Indonesian population. Rice is also the staple food of the Asian population, there are 1,750 million people out of 3 billion people on the Asian continent to meet their calorie needs from rice that comes from rice. Therefore, the decline in rice production can disrupt the stability of the national rice supply. Many factors can affect the decline in rice production. Disease in rice is one of the constraining factors in increasing rice production. Diseases that often appear in rice plants are bacterial leaf blight (Bacterial leaf blight), narrow brown spot (Leaf Smut), tungro, and leaf sheath blight (Sheath Blight). Along with the rapid development of technology, image processing can be used to detect differences in leaf types using image datasets that have been collected. This study aims to implement a transfer learning model in the Convolutional Neural Network algorithm to detect rice plant diseases through leaf imagery. There are 5 classes of rice leaf imagery that are classified, namely healthy, bacterial leaf blight, narrow brown spot (Leaf Smut), tungro, and leaf blight (Sheath Blight). This research was conducted using three different epoch scenarios during the training model. The best accuracy results are obtained using the epoch value of 30, namely Training accuracy of 0.9900, validation accuracy of 0.9920, and Testing accuracy of 0.9440. With the results of the confusion matrix in the form of a precision of 0.95, a recall of 0.94 and an f1 score of 0.94

Keywords: *Transfer learning, MobileNet V2, CNN, Rice, Rice Disease*