ABSTRACT

Corn (Zea Mays L.) is a food source that is ranked third after wheat and rice. When planting corn, challenges arise in the form of disease attacks on the leaves. However, it should be remembered that it is a problem if farmers have difficulty detecting corn leaf disease. The way to overcome this problem is to create a system that can detect corn leaf disease. In this research, a system was designed for image-based classification of corn leaf diseases using the Convolutional Neural Network (CNN) method with 2 architectures, namely VGG16 and VGG19 using the SGD optimizer. The data used amounted to 4,198 images consisting of 3 diseased classes and 1 healthy class, namely Blight, Common Rust, Gray Leaf Spot and Healthy. The classification results of corn leaf disease have better performance compared to VGG16. The accuracy of the VGG19 architecture reaches 92,74%, with precision of 91%, recall of 91%, and F1-Score of 91%. Meanwhile, for the VGG16 architecture, accuracy reached 92,62%, precision 91%, recall 89%, and F1-Score 90%. It is hoped that this system can help farmers detect diseases on corn leaves more efficiently and accurately.

Keywords: *leaf image, convolutional neural network (CNN), SGD, VGG16, VGG19*