# ABSTRACT

*Rice is the main staple crop in Indonesia. Rice farming in Indonesia has a significant impact on the national economy and plays an important role in meeting people's needs. According to data from the Central Bureau of Statistics, the area of rice harvested is 10 606 513.22 Ha. The attack of organisms, especially on the leaves of rice plants, often results in crop failure. Identification and diagnosis of rice plant diseases are key in control and prevention efforts. Until now, there are still rice farmers who are wrong in determining the disease in rice plants. This is because human ability is limited in recognizing diseases visually. This research can help farmers by using digital technology such as image processing to identify diseases more quickly and accurately. This is done by developing a model using the CNN algorithm method. Convolutional neural network method to find the type of disease on rice leaves. Feature extraction in this study used 7 convolutional layers with secondary datasets used, namely RiceLeafs datasets with a total of 1260 sample images of rice leaves. There are three classes of disease data Brownspot, Leaft and Narrow. The training results obtained an accuracy of 100% and testing 97%. Predictions applied to the model that has been built can classify diseases on the leaves of rice plants in digital images. The results of this study show the potential to increase agricultural productivity and the welfare of farmers in Indonesia. Thus, the application of digital technology in agriculture encourages the development of smarter and more sustainable agricultural management models.*



*Keywords: Convolutional Neural Network, Feature Extraction, Rice Leafs, Layer Convolution, Digital Imagery*