ABSTRACT

Tea is a beverage produced from processing tea plant leaves. In the processing of tea plantations, of course, there are several obstacles, for example not all tea leaves can be harvested perfectly, because there are several leaf diseases that can interfere with the growth of the tea leaves themselves. These obstacles can be a major influence on tea production. If the tea plant cannot be classified clearly, it will cause the wrong use of pesticides and fertilizers. Therefore, this research was conducted to help tea farmers classify tea leaf diseases using Deep Learning techniques with the Convolutional Neural Network (CNN) method and variation pooling. The dataset used in this study consists of several types of tea leaf diseases, namely algal leaf spot, anthracnose, bird eye spot, brown blight, gray blight, red leaf spot, white leaf spot and also healthy or healthy tea leaves. The pooling variation is meant by comparing 2 types of pooling layers, namely maximum pooling and average pooling, and the scenario stage carried out is by varying the kernel length. The highest accuracy results were obtained using maximum pooling of 81.25%, and for average pooling of 78.12% obtained at kernel size 1x1.

***Keywords**: Convolutional Neural Network, Tea leaf, Classification.*