

## **ABSTRACT**

### **TRANSFER LEARNING WITH THE DENSENET201 ARCHITECTURAL MODEL FOR CLASSIFICATION OF POTATO LEAF DISEASE**

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*The potato plant is a plant that is beneficial to humans. Like plants in general, potato plants also have diseases. If this disease is not treated immediately, it will cause a significant decrease in food production. Therefore, it is necessary to detect the disease quickly and precisely in order to control the disease effectively and more efficiently. Classification of potato leaf disease can be done directly, but the symptoms cannot always explain the type of disease that attacks potato leaves because there are many types of diseases with symptoms that look the same. Machine learning algorithms also have drawbacks if classifying image data with lots of images tends to produce models with low accuracy. Therefore, it is necessary to carry out a classification using the Deep Learning method in order to improve the accuracy of the classification of potato leaf disease. The method used in this study is Deep Learning with the DenseNet201 model. This study compares two variables: the number of dropouts and the optimizer. This test produces the best model using a combination of dropout 0.1 and the Adam optimizer with an accuracy of 99.5% for training (accuracy value during training), 95.2% for validation (accuracy value during the validation process), and 96% accuracy for the model (accuracy value that includes the process training and testing). Based on the research results, the Deep Learning method with the DenseNet201 architecture can improve accuracy in the classification of potato leaf disease.*

***Keywords: Early Blight, Late Blight, Classification, Transfer Learning.***