ABSTRACT

Methods in farming are starting to vary today, one of which is by using the hydroponic method. There are quite a lot of types of plants that can be applied to the hydroponic method, one of which is lettuce. Farmers or people who grow lettuce want good results, of course. Good plant care and management are the main factors for producing good or poor yields. Monitoring the plants one by one takes a lot of time and effort. This is enough to make farmers or the community quite difficult. For this problem, a system was designed that could detect the condition of the lettuce by using a camera as a tool for taking pictures.

This research aims to create a system that can detect the condition of lettuce plants using the Convolutional Neural Network (CNN) classification method. The conditions of the Lettuce plant are divided into two class conditions which are marked by the color of the leaves, if there is a yellow to brown color it will be categorized as a bad condition class while the leaves with a fresh green condition will be categorized as a good condition class.

The result of this research is a system that can detect the class condition of lettuce leaves with bad conditions and good conditions. The output from the system is in the form of images and class results from the images that have been inputted. By using parameters in the form of partition training data by 90% and test data by 10% with an accuracy of 99.2%.

Keywords: *Hydroponics, Lettuce, Convolutional Neural Network (CNN).*