ABSTRACT

Automation using artificial intelligence in pakcoy farming can reduce production costs. There are many types of automation, for example feature extraction to distinguish pakcoy plants that are ready to harvest or not. How feature extraction such as edge detection can distinguish pakcoy plants that are not ready to harvest and those that are ready to harvest. Edge detection feature extraction can be used to find the area value of pakcoy leaves. Although there are many edge detection methods that can find leaf area values, this study uses the Sobel method. This is based on past research that this method can extract images well. The leaf area value that has been obtained will be measured using the Manhattan Distance calculation method. This measurement is carried out by comparing the unknown leaf area value with a database containing a collection of leaf area values that are known to be ready to harvest or not ready to harvest. The value of the measurement results at the accuracy of k = 1 is 95% and k = 3 is 93%. In addition, in terms of precision, both classifications produce a value of 100%. Recall obtained in this study, at k = 1 is 91% and k = 3 is 88%. The results obtained in this study are quite good. It is hoped that this system will make it easier for farmers or future researchers to develop directly in a more advanced direction.

Keywords: *Smart Farming, Pakcoy Plant, Edge Detection, Sobel*