

ABSTRACT

Pakcoy is a vegetable plant that can grow with soil and hydroponic media. Pakcoy plants consist of stems and leaves that are green. The growth of the plant is seen from the width of leaves. So that people can monitor plant growth by knowing the width of the leaves of the plant so that the plant can be monitored properly. From these problems, this study created a tool to accurately detect plant leaf widths against the growth and development of these plants.

Image processing is a branch of knowledge about image processing (images) that are processed digitally. The development of technology is very fast in the field of computer vision which makes image processing not only to improve the image alone, but also to detect or track an object, read barcodes, and others. The stage when doing image processing are acquiring image from object, pre-processing, doing training data, feature extraction, and others. This research was conducted to create a tool used to detect plant growth and development through leaf size from the pakcoy plant. The implementation of tool made in the form of a mobile application that serves to detect the width of the leaves of Pakcoy. The programming language used is python using the Canny Edge Detection method as its feature extraction.

The canny method used in the mobile application created to calculate the width of the Pakcoy plant leaves obtained 95,06% system accuracy, with a light intensity of 18.75 lux, an angle of 90° and taking with a distance of 30 cm. Pakcoy plant growth was seen for 4 weeks, the best accuracy was obtained in the 2nd week with an average accuracy of 99% and the average light intensity value was 22 lux.

Keywords : *width of plant leaves, pakcoy, canny edge detection*