ABSTRACT

Plants are one example of living things. Many benefits are important in plants because plants are the source of life for humans and animals. Plants produce the oxygen needed to breathe. Benefits on roots, stems, leaves, fruit and so on also become a food source for other living things. Because plants are so important, there are simple and easy ways to care for, and preserve plants with the concept of Vertical Garden or called vertical garden. One of the parameters to find out if the plant is growing well is to measure the height of the plant and a program is needed that can be used to monitor the tall growth of the plant.

With the Automation of Plant Height Measurement in vertical garden using planter bag easy grow 3x3 uses a camera as a high measuring tool on plants and uses the help of SAD (Sum of Absolute Difference) algorithm so that it can be used in conjunction with image processing to measure and compare automatic plant height with manual measurements.

As a result of this study, measurements of plant height on planter bags using THE SAD algorithm with image processing function resulted in an accuracy of 73.62%. Measurements of plant height are carried out 24 days in the morning and evening.

Keywords: SAD Algorithm, *Image Processing*, *Plant Height, Vertical Garden*.