ABSTRACT

Each company must have its own product label, and do not rule out the possibility of an error in labeling during the production process. This needs to be considered again, because if there is a label error or the label is incorrect it will cause disappointment to consumers. In addition, the wrong label on a product can also cause serious health problems for consumers, especially if there are allergens that are not listed.

In this Final Project, a labeling monitoring system was developed in the image processing based manufacturing product. To be able to process and detect whether the label installation on the product is in accordance with the specified pattern, edge detection method using Matlab will be captured by the webcam. Using a webcam can take an image so that the image will be obtained from the object, then the image will be processed so that the image can be detected if an error occurs on the label, the output is in the form of an alarm. This system is designed using the .BMP image format.

From the results of tests that have been done, the best accuracy is obtained on a webcam camera at an angle of 90⁰ with a percentage of 92.5% where this test is performed 120 times with a distance of 30 cm, 35 cm, 40 cm, 45 cm, 50 cm, and 55 cm with each distance tested 20 times. Then the optimal distance in this Final Project testing is in the range of 35 cm, 40 cm, and 50 cm.

Keywords: *Product, Label, Matlab, Image Processing, Webcam, Digital Images.*