

ABSTRACT

Tuberculosis (TB) is an infectious disease that can be detected using a sputum sample. TB cases in Indonesia have spread throughout the region, especially the highest cases are in West Java. This problem makes the government do some handling and prevention of TB disease. The Bandung City Health Office (DKKB) conducted a cross-test to diagnose TB by using a sputum sample.

So in this study, a TB bacteria detection system, namely Mycobacterium Tuberculosis (MTB) will be made in sputum samples and their number to diagnose TB. Detection and calculation of the number of MTB is done by processing the image on the sputum sample using the watershed contour detection method. In this study, sputum sample data were obtained from DKKB. The acquisition of microscopic images at each point of the field of view is carried out using an SLR camera that is connected directly to the microscope to replace the function of the ocular lens.

In this study, the classification of microscopic sputum sample images into positive and negative using the watershed and colorspace methods was tested on a total of 90 microscopic images. From the results of system testing, the system accuracy level is 100% and the system precision is 100% for the detection of TB diagnosis, while the accuracy of the estimation of TB bacteria is 83.33%. The system processing time obtained an average of 5.811 seconds for 90 images used.

Keywords: *TBC, Mycobacterium Tuberculosis, watershed, microscopic image*