

ABSTRACT

Herbal plants are one of the alternative medicines used in the health sector to treat diseases. Herbal plants can be found around the house or in the immediate environment. With herbal plants that are around the house or in the nearest environment can help in terms of traditional medicine.

With limited human knowledge about herbal plants, with technological advances, this research was made to detect herbal plant leaves using Image Processing which utilizes increasingly advanced technology. For the introduction of herbal plant leaves, *Gaussian Mixture Model* segmentation is used as clustering and utilizes image processing, it takes a dataset of herbal plant leaves to recognize the leaves of herbal plants that want to detect as training data.

In this study, the *Gaussian Mixture Model* is used in clustering, and the Support Vector Machine algorithm is used to optimize the accuracy of the results. In this study, the average match rate was 79.2% with a processing time of 4.44 seconds. Furthermore, the results will be displayed on the website which is used as a display as the results of the suitability level and processing time in the introduction of herbal plants.

Keywords: *Image processing, Dataset, Python, Support Vector Algorithm Machine, Herbal Plant, Gaussian Mixture Model.*