ABSTRACT

Chili is an important vegetable commodity because it has high economic value and can be used as an industrial raw material. Today the chili plant is cultivated almost throughout the archipelago. So it is widely used by the community as a seasoning for cooking. Along with the increasing population in Indonesia, the need for chili is increasing. Harvesting is the end of cultivation activities and is the determining factor for the next process. The maturity of the chili itself can be determined based on color, observation of color demands the presence of chili farmers to be able to see firsthand the chili plant that is being cultivated. In an effort to increase the effectiveness of chili cultivation, various technologies have been developed, including Internet of Things (IoT) technology for plant maintenance, microprocessor technology for controlling plant environmental parameters, and image processing technology. From the various applications of technology to improve the effectiveness of such cultivation, the application of image processing technology is currently highly developed. The development of Machine Learning technology, which can classify the maturity of chili peppers based on data from digital images. By applying the Support Vector Machine algorithm that can learn to classify the maturity of curly red chilies with the "ripe" category and the "immature" category, to represent ripe chilies resulting in an accuracy rate of above 80% and to represent immature chilies resulting in an accuracy rate above 70%. It can be concluded that Machine Learning is able to be implemented in the cultivation of curly red peppers.

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***Keywords**: Classification, Chili, Support Vector Machine, Image Processing, Machine Learning*