

ABSTRACT

Abstract- In an effort to monitor the maturity of tea leaves through color, a renewable algorithm is needed to determine it accurately. Monitoring is a commonly used method to determine the maturity level of tea leaves. Color changes in tea leaves can be an important indicator in determining the right harvest time. The algorithm used for accurate color determination is YoloV8, which is a high-accuracy algorithm. However, there are several problems that can occur in monitoring tea leaf maturity through color. Some of the issues that arise include the subjectivity of color grading. If the input results are unclear or blurry during the monitoring process, then the tea leaf monitoring process will be disrupted and the output results will be messy. The use of this algorithm aims to reduce inaccurate data, as processing using GPU allows for more accurate detection, compared to other algorithms, such as the HSV algorithm. So optimizing the monitoring of tea leaf maturity is very important because the plantations are vast so remote reading is essential. By using the YoloV8 algorithm the accuracy rises to 83%. In addition, the camera used must be good or able to capture images clearly, and make it possible to capture images in foggy conditions, in this case because the camera is very very influential for the course of the monitoring process, a camera with an anti-fog lens is needed, so that when the fog comes the camera is not dewy. This technology is a technology that allows farmers or entrepreneurs to monitor without having to go to the field, and makes it easier to determine the area to be picked tea leaves. So as to optimize crop yields and minimize the time and energy needed to be around the garden. This technology has many impacts for farmers and tea garden entrepreneurs, with remote sensing capabilities making the process from manual to automatic.

Keywords-Algorithm, YoloV8, Monitoring, Tea Leaf