CLASSIFICATION OF WHOLE AND BROKEN RICE USING DEEP LEARNING BASED DIGITAL IMAGE PROCESSING TECHNOLOGY USING YOLOV5 METHOD

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ABSTRACT

Indonesia is a tropical country that has a large potential for agricultural commodities. The rice commodity is the most important commodity in Indonesia because of its role as a staple food where the majority of the Indonesian population consumes rice every day as carbohydrate intake. The problem faced in this study is how to detect the physical characteristics of whole rice and broken rice. A system is needed that can distinguish the physical characteristics of rice by detecting it accurately. The method used in this study is the YOLOv5 algorithm. This study used a total of 160 training image datasets and 40 validation image datasets by labeling before training. This study succeeded in detecting intact rice images as well as broken rice images with a total loss of 0.0045, using 100x epochs with an accuracy of 92.25%.

Keywords*: Whole Rice, Broken Rice, Deep Learning, YOLOv5, Citra*