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Automated Fruit Grading of Fresh Fruit Bunches (FFB) and Determination Stalk Size Based on Color

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ABSTRACT

This research is focus on the determination of palm oil stalk's size to determine long stalk bunch category. Images from samples of oil palm Fresh Fruit Bunches (FFBs) were acquired using a camera in the actual estate environment. Image processing and analysis of the samples were carried out. Region growing method is used to determine stalk region based on color. Measurements of the stalk color were carried out by the RGB analysis. The grading process was carried out by using computerized system to replace manual system grading in the palm oil industry. The grading is based on long stalk bunch category to determine the penalty of fruits. The result shows that this automated fruit grading system can identify the long stalk bunch category with the performance of more than 70 %. This research reveals that this project can be implemented in palm oil industry with some improvement in the future for production of accurate result and less time consumed in grading process.

TABLE OF CONTENTS

CHAPTER 3: PROJECT METHODOLOGY

CHAPTER 4: PROJECT TESTING AND ANALYSIS

CHAPTER 5: CONCLUSIONS AND FUTURE DIRECTION