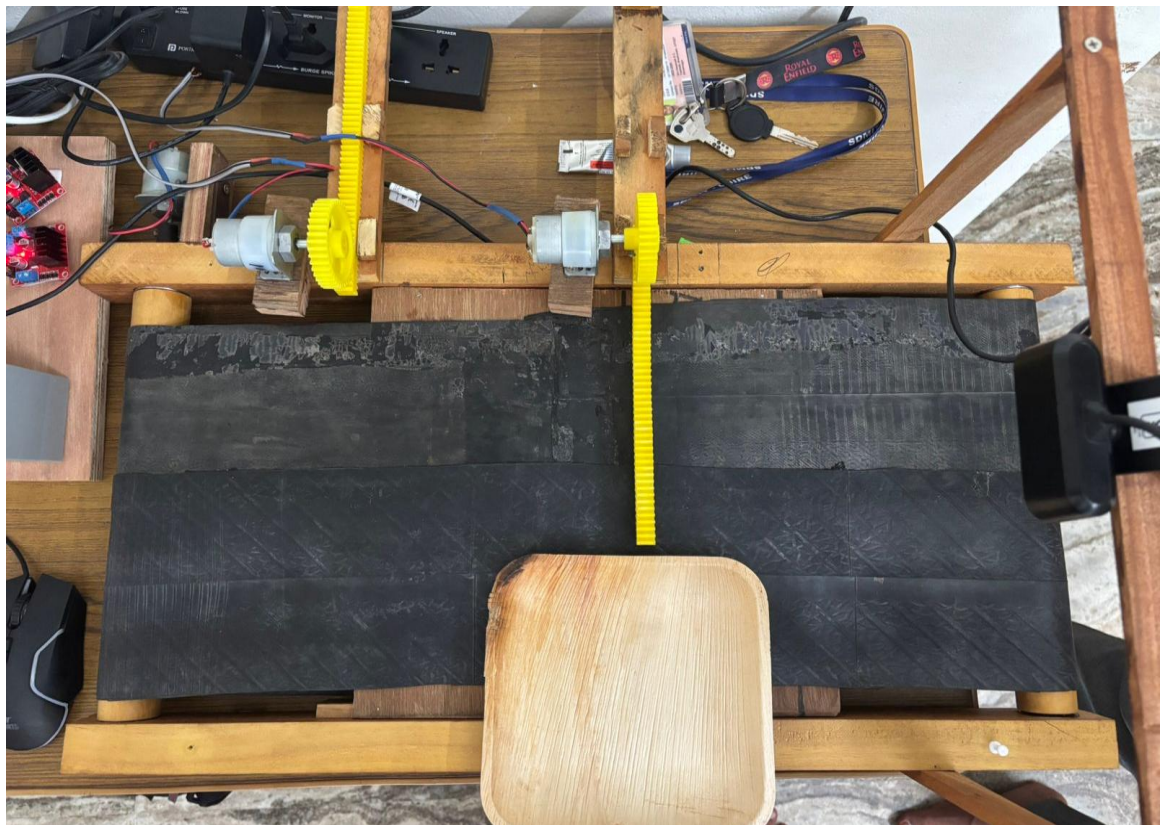**Figure: Classification Result Display of Areca Leaf Plate as Grade A**

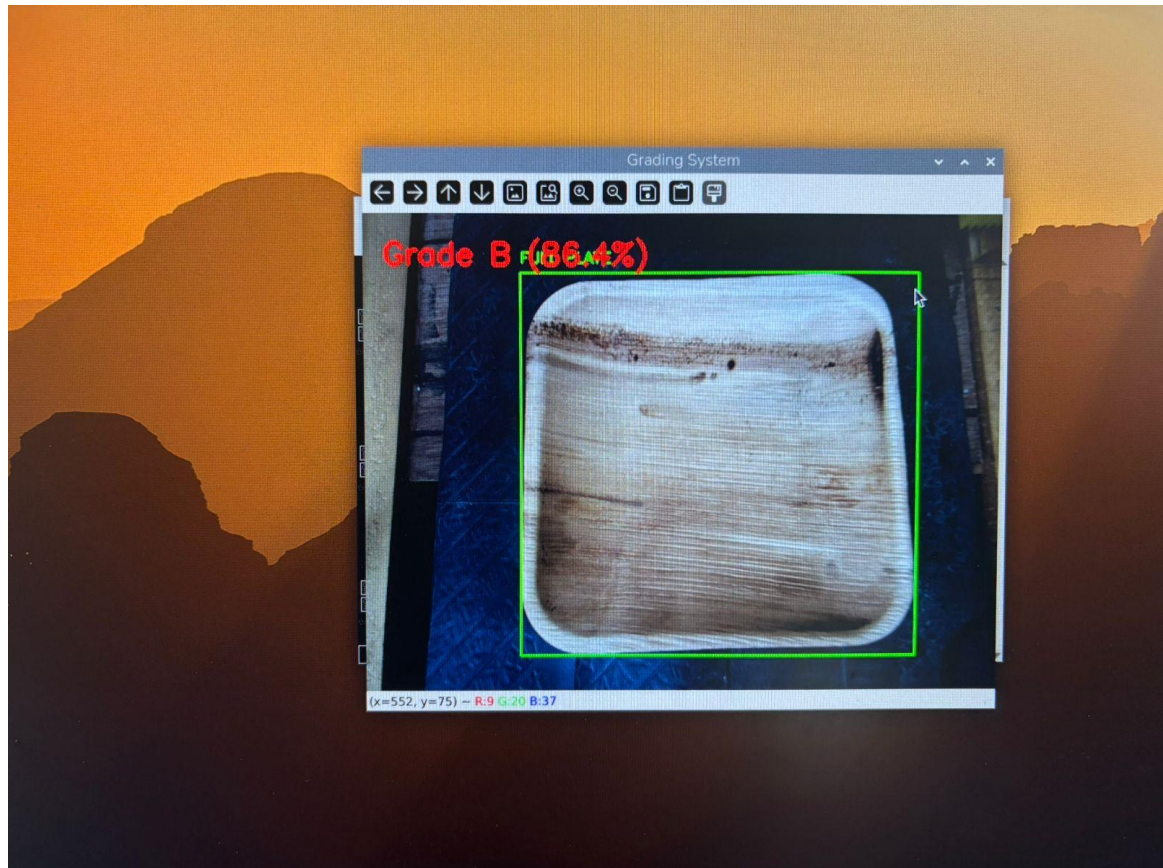**Title:** Classification Result Display of Areca Leaf Plate as Grade A

Description: This figure shows the real-time output of the smart areca leaf plate grading system after image acquisition and processing. The areca leaf plate is classified as **Grade A,** and the corresponding confidence score is displayed on the system interface.

Figure: Conveyor Belt Mechanism with Motor-Driven Sorting of Grade A Areca Leaf Plate

Title: Conveyor Belt Mechanism with Motor-Driven Sorting of Grade A Areca Leaf Plate

Description: This figure illustrates the motor-driven conveyor belt mechanism activated for handling Grade A areca leaf plates. Upon successful classification, the corresponding motor is triggered to guide the plate into the designated collection bin.
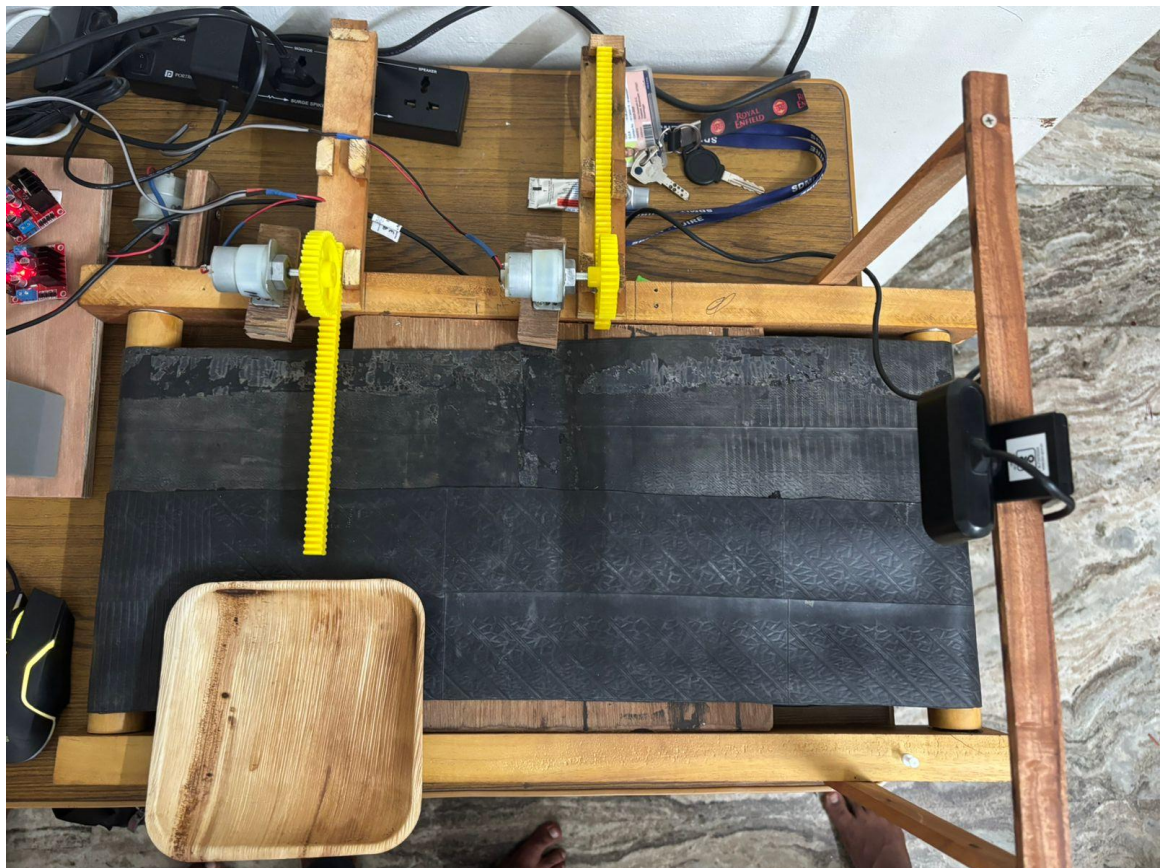

Figure: Classification Result Display of Areca Leaf Plate as Grade B

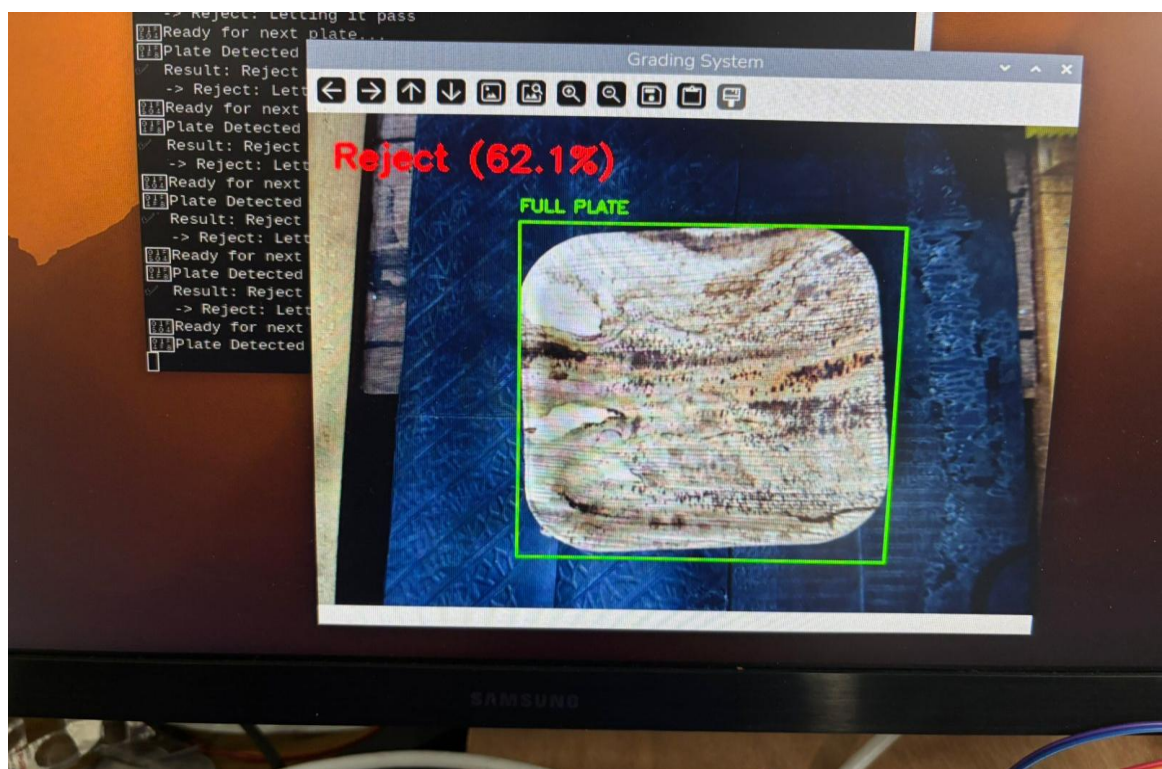**Title:** Classification Result Display of Areca Leaf Plate as Grade B

Description: This figure shows the real-time output of the smart areca leaf plate grading system after image acquisition and processing. The areca leaf plate is classified as **Grade B**, and the corresponding confidence score is displayed on the system interface.

Figure: Conveyor Belt Mechanism with Motor-Driven Sorting of Grade B Areca Leaf Plate

Title: Conveyor Belt Mechanism with Motor-Driven Sorting of Grade B Areca Leaf Plate
Description: This figure illustrates the motor-driven conveyor belt mechanism activated for handling Grade B areca leaf plates. Upon successful classification, the corresponding motor is triggered to guide the plate into the designated collection bin.
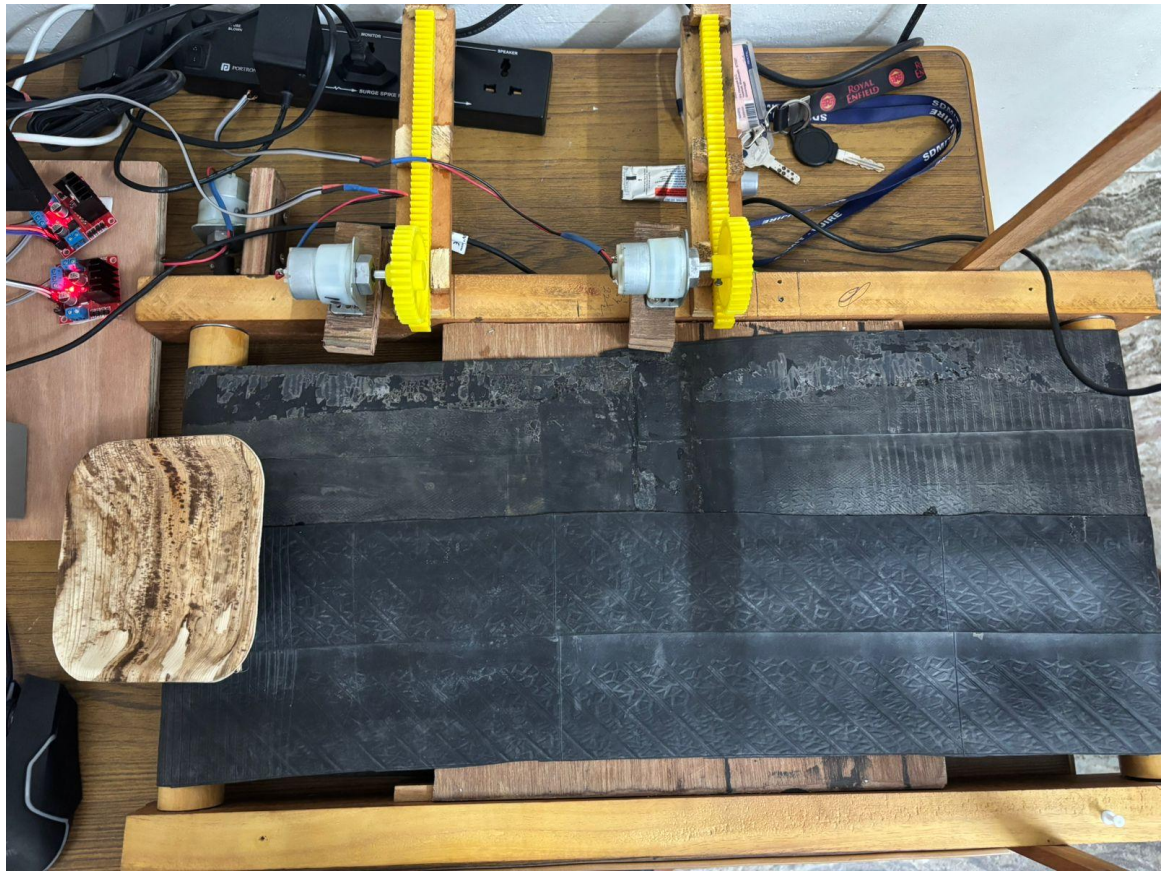

Figure: Classification Result Display of Areca Leaf Plate as Grade Reject

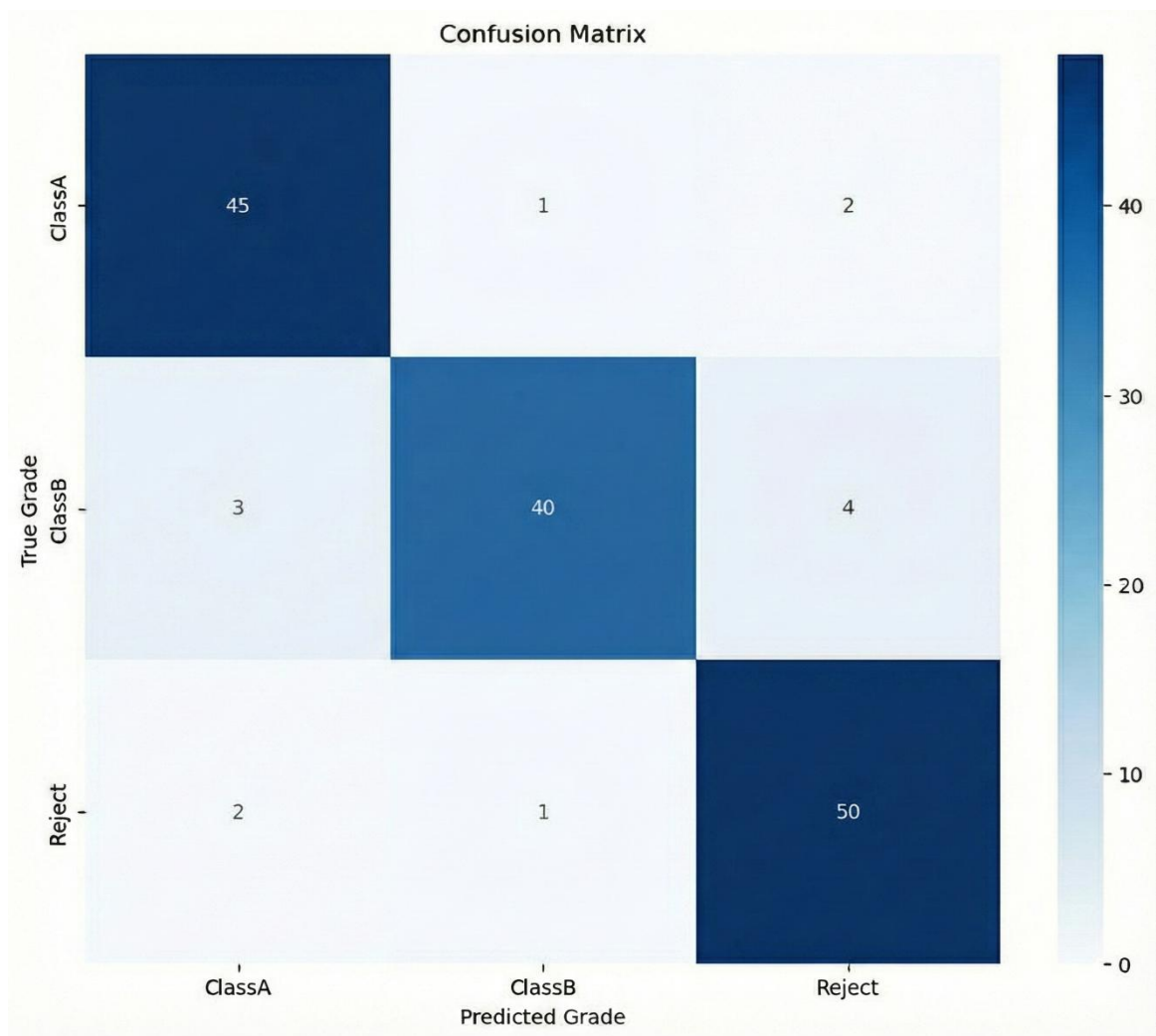**Title:** Classification Result Display of Areca Leaf Plate as Grade Reject

Description: This figure shows the real-time output of the smart areca leaf plate grading system after image acquisition and processing. The areca leaf plate is classified as **Grade Reject**, and the corresponding confidence score is displayed on the system interface.

Figure: Conveyor Belt Mechanism for Automatic Rejection of Areca Leaf Plate

Title: Conveyor Belt Mechanism for Automatic Rejection of Areca Leaf Plate

Description: This figure illustrates the conveyor belt mechanism used for handling rejected areca leaf plates in the grading system. When a plate is classified as **Reject**, no motor-driven diversion is activated, and the plate continues along the default conveyor path and falls into the reject collection bin.

Figure: Confusion Matrix

Title: Confusion Matrix

Description: This figure presents the confusion matrix showing the performance of the proposed areca leaf plate grading model across **Class A, Class B, and Reject** categories. The diagonal elements indicate correct classifications, while the off-diagonal values represent misclassifications between different grades. The results demonstrate high classification accuracy with most samples correctly identified in their respective classes.