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Specific Gravity-based of Post-harvest Mangifera indica L. cv. Harumanis for 'Insidious Fruit Rot' (IFR) Detection using Image Processing

Abstract

Bruising and internal defects detection is a huge concern for food safety supplied to the consumers. Similar to many other agricultural products, Harumanis cv. has non-uniform quality at harvesting stage. Traditionally, in adapting the specific gravity approach, farmers and agriculturist will estimate the absence of 'Insidious Fruit Rot' (IFR) in Harumanis cv. by using floating techniques based on differences in density concept. However, this method is inconvenient and time consuming. In this research, image processing is explored as a method for non-destructive measurement of specific gravity to predict the absence of 'Insidious Fruit Rot' (IFR) in Harumanis cv. The predicted specific gravity of 500 Harumanis cv. samples were used and compared with the actual result where it yielded a high correlation,R2 at 0.9055 and accuracy is 82.00%. The results showed that image processing can be applied for non-destructive Harumanis cv. quality evaluation in detecting IFR.