

Development of Ripeness Indicator for Quality Assessment of Harumanis Mango by using Image Processing Technique

Abstract

Visual appearance is the main source of information that can be used for quality assessment of mango. In this study, a non-destructive ripeness level estimation for mango of the cultivar Harumanis based on digital image analysis was employed. The changing peel and flesh colour of mango is strongly correlated to ripeness that can be measured as a sensual quality parameter. This measurement of ripeness level has been determined by image analysis technique which needs to attribute external and internal colour feature from image segmentation. Multilevel thresholding technique is proposed for colour image segmentation to extract the mango region from the background which every channel of five colour spaces have been applied. Colour analysis technique and Total soluble solids (TSS) is used to compare and evaluate for the prediction. The optimal results were obtained that a* channel from L*a*b colour space has given more logical and better performance of prediction which is more than 92% accuracy.