Determination of Chokanan mango sweetness (Mangifera indica) using non-destructive image processing technique

ABSTRACT

The Chokanan mango (Mangifera indica) has a high commercial potential. Its sugar content increases as the colour changes during the maturation process. In this research, the relationship between the sweetness of the Chokanan mango and its mean pixel values in RGB and HSB colour space is analyzed. This information could be utilized in determining the level of sweetness of the Chokanan mango without destroying the fruit. A Keyence machine vision system was employed to capture the images of the mango in RGB and HSB colour spaces. Based on the findings, it could be concluded that hue not only has the highest correlation value (-0.916), but also has the lowest value of the standard deviation at all levels of sweetness compared to other colour components. It is possible to determine sweetness at Level 1 and Level 2 with a 100% success rate and a 87% success rate at Level 3.

Keyword: Color; Hue; HSB; RGB; Ripeness