

Postharvest quality indices of different durian clones at ripening stage and their volatile organic compounds

Tan, Xue Yi, Azizah Misran, Cheong Kok Whye, Leona Daniela Jeffery Daim, Phebe Ding and Mohd. Sabri Pak Dek

Scientia Horticulturae 264: 109169. (2020)

Abstract

The aim of the present work was to characterize the quality of durians at consumptions stage. Seven clones of durian namely “Musang King”, “D24”, “D88”, “IOI”, “XO”, “Red Prawn” and “Black Thorn” were characterized based on their physiochemical properties. The organic acid contents, sugar compositions and β -carotene of durian clones were measured by high-performance liquid chromatographic (HPLC), while the volatile organic compounds (VOCs) were analyzed using headspace solid phase microextraction (HS-SPME) coupled with gas chromatography-mass spectrometry (GC-MS). There were significant differences on all the postharvest parameters in the selected durian clones. “Black Thorn” having orange pulp yielded the highest β -carotene content (4.55×10^{-5} kg/kg FW). The dominant sugars in the pulp of all durian clones were dominated by sucrose followed by glucose and fructose. Sulfur- and ester-containing compounds were the predominant VOCs found. Principal component analysis (PCA) allowed for the grouping of different durian clones based on VOCs.