Title Physicochemical, microbial and sensory changes of minimally processed durian (*Durio zibethinus* cv. D24) during storage at 4 and 28 °C

Author Y.Y. Voon, N. Sheikh Abdul Hamid, G. Rusul, A. Osman and S.Y. Quek

Citation Postharvest Biology and Technology, Volume 42, Issue 2 , November 2006, Pages 168-175

Keywords Durian; Minimally processed; Ambient temperature; Chilled temperature

Abstract

The effect of storage temperature on physicochemical, microbial and sensory quality of minimally processed durian (*Durio zibethinus* Murray) was determined at 28 °C for 3 days and 4 °C for 35 days. When held at 28 °C, the pulp retained its colour but softened rapidly after 24 h and became acidic (pH 4.71) after 2 days of storage due to the formation of citric, succinic, acetic and lactic acids. Sucrose decreased concomitantly with increase in glucose and fructose contents during storage. For fruit stored at 4 °C, no noticeable changes in pH occurred. Following 1 week of storage, there was a progressive increase in glucose, fructose and sucrose contents concomitant with the increase in total soluble solids. The firmness increased significantly ($P < 0.05$) at the end of storage. The organic acid content remained constant throughout storage with a minor increase in tartaric acid detected. Titratable acidity of the fruit correlated well with the shift in organic acid profile instead of pH. Sensory evaluation revealed off-odour development on day 14 for fruit stored at 4 °C. The off-flavour increased to an unacceptable point on day 28 of storage. The minimally processed durian fruit could be held at 4 °C for 14 days with acceptable microbiological count and without off-odour development. At ambient temperature, minimally processed durian could only be stored for 1 day after which the pulp became acidified.