

Title Changes in texture and total soluble solids (TSS) contents of sekaki and eksotika papaya during storage at different temperatures

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Abstract

Papaya is a tropical, climacteric fruit that undergoes ripening significantly after harvest. The ripening process is the result of several physico-chemical changes in fruits and is affected by storage temperatures. The aim of this study was to evaluate changes in the total soluble solids (TSS) contents and texture of papaya cv. Sekaki and Eksotika during storage at four different temperatures (10, 15, 20, and 30°C). The results showed that, total soluble solids contents of Sekaki and Eksotika papaya increased as a function of storage time and temperature. TSS contents for Sekaki papaya stored at 10 and 15°C (14 days), 20°C (7 days) and 30°C (6 days) increased from 7.1 ± 0.80 °Brix to 9.4 ± 0.63 , 10.9 ± 0.4 , 10.1 ± 0.44 , and 10.4 ± 0.50 °Brix respectively. On the other hand, TSS contents of Eksotika papaya increased from 8.8 ± 0.46 °Brix to 10.4 ± 0.95 , 11.45 ± 0.78 , 12.33 ± 0.35 , and 13.12 ± 0.62 °Brix after storage at 10 and 15°C (16 days), 20°C (9 days) and 30°C (8 days) respectively. There were significant ($p < 0.05$) difference in TSS content among fruits stored at 10, 20 and 30°C. Texture of Sekaki and Eksotika papaya significantly ($p < 0.05$) decreased for fruits stored at 20 (7 and 9 days respectively for Sekaki and Eksotika) and 30°C (6 and 8 days respectively for Sekaki and Eksotika). For Sekaki papaya, it significantly ($p < 0.05$) decreased from 18.58 ± 0.61 N to 3.89 ± 0.96 and 5.10 ± 1.01 N respectively, while for Eksotika papaya it significantly ($p < 0.05$) decreased from 20.33 ± 0.52 N to 4.50 ± 0.87 N when stored at both 20 and 30°C. No significant difference in fruit texture was observed when the fruits were stored at 10°C and 15°C for both cultivars. The results of this study indicated that high storage temperatures (20 and 30°C) gave significant effect on changes in TSS and texture of Sekaki and Eksotika papaya. On the other hand, low storage temperatures (10 and 15°C) only affect changes in TSS contents but not the texture.