

Title Xyloglucan and polyuronide in the cell wall of papaya fruit during development and storage
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Keyword papaya; xyloglucan; polyuronide

Abstract

The changes of xyloglucan and polyuronide during fruit development and storage in 'Khakdam' papaya (*Carica papaya* L.) were examined. Xyloglucan, water soluble pectic substances (WSP), and hexametaphosphate-soluble pectic substance (HMP) did not change in the skin during fruit development, although fruit firmness decreased gradually toward the ripening. In contrast, WSP in the flesh changed within days after the full bloom (DAFB) (30 consecutive days period after the full bloom, i.e. 60, 90, 120, 150, and 180 days). In the flesh, there was a decrease in the molecular weight of xyloglucan at 270 DAFB. The WSP concentration increased significantly 1t 180 DAFB, but hemicelluloses concentrations decreased at 135 DAFB. In the fruit stored at 5°C, molecular weight of xyloglucan and WSP concentration in the skin did not change with days in storage (DIS). However, WSP in the skin of stored fruit at 20°C increased with DIS, and HMP and cellulose concentrations decreased. The molecular weight of xyloglucan in chill-injured skin decreased, too. These results suggest that the xyloglucan, WSP, and hemicelluloses in the flesh may be related to the softening of papaya fruit during its development, but the skin may associated with the senescence in the stored fruit.