

Title Bruising injury of persimmon (*Diospyros kaki* cv. Fuyu) fruits
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Abstract

This study was performed to monitor the deterioration of bruised persimmon (*Diospyros kaki* cv. Fuyu) fruits. Freshly harvested fruits were bruised by dropping them from a height of 50 cm onto a steel board and then stored at 0 or 20 °C in temperature controlled chambers for up to 4 weeks. Immediately after the bruising, no visible injury on the fruits was evident, but the fruits deteriorated rapidly during storage. The skin tissues of the fruits stored at 20 °C became more reddish with the duration of the storage, but no such changes were found with the fruits stored at 0 °C. The increase in redness of the skin tissues appeared to be associated with storage temperature, but not with the bruising. The skin tissues also became darker when stored at 20 °C than at 0 °C and this tendency was more obvious with the bruised fruits. Flesh firmness decreased rapidly during storage except for the non-bruised fruits stored at 0 °C. Even the non-bruised fruits rapidly lost their flesh firmness at 20 °C. No significant changes in lipid peroxidation, as expressed by malondialdehyde production, were found between the bruised and the non-bruised fruits during the storage either at 0 °C or at 20 °C. This implies that the fruit deterioration caused by bruising is not due to the consequences of lipid peroxidation. Polyphenol oxidase activity increased more rapidly in the bruised fruits than in the non-bruised fruits during storage. The bruising had more effect on increasing polyphenol oxidase activity than did the storage temperature. Although the increase in polyphenol oxidase activity appeared to be associated with the visual deterioration of the bruised fruits, it did not exactly correspond to the physical deterioration. These results indicate that polyphenol oxidase is not the only factor influencing the deterioration associated with bruising. Cell wall hydrolases are currently being assayed to determine if they also contribute the deterioration following bruising.