Title Role of lignification-related enzymes in flesh quality of loquat fruit during storage

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Abstract

Experiments were conducted to understand the role of lignification-related enzymes, polyphenol oxidase (PPO), peroxidase (POD) and phenylalanine ammonia-lyase (PAL) in flesh quality of loquat (cvs. 'Yangdun' and 'Dahongpao') fruit during storage at 1 and 20°C. Storage at 1°C inhibited significantly disease development and ethylene production rate, compared with storage at 20°C. However, fruit firmness increased gradually, while total soluble solids (TSS) and total acidity (TA) decreased, with a rapid increase of the ratio of TSS to TA during storage at 1°C, which resulted in deterioration of flesh quality. Activities of PPO, POD and PAL increased at an early stage of storage at 1°C and then maintained at a high level, whereas lignin content increased gradually. The results suggested that enhanced lignification of loquat fruit was associated with increased activities of PPO, POD and PAL during storage at low temperature.