

**Title** Expression of genes encoding xyloglucan endotransglycosylase/hydrolase in ‘Saijo’ persimmonfruit during softening after deastringency treatment

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#### Abstract

Persimmon (*Diospyros kaki* Thunb.) fruit undergoes intensive cell wall modification during postharvest fruit softening. Xyloglucan metabolism is important in cell wall disassembly. We cloned cDNAs for two xyloglucan endotransglycosylase/hydrolase genes (*DkXTH1* and *DkXTH2*) from ‘Saijo’ persimmonfruit treated with dry ice to remove astringency. In order to determine the ethylene dependence of *XTH* gene expression, fruit were exposed to 1-methylcyclopropene (1-MCP), an inhibitor of ethylene action, prior to removal of astringency. Ethylene production increased in mature control and 1-MCP-pretreated fruit after dry-ice treatment, and flesh firmness decreased to the same extent during dry-ice treatment in the control and 1-MCP-pretreated fruit. After dry-ice treatment, control fruit softened completely, but fruit firmness was maintained in 1-MCP-pretreated fruit. Accumulation of *DkXTH1* mRNA was induced simultaneously with commencement of ethylene production in mature control fruit. Pretreatment with 1-MCP delayed accumulation of *DkXTH1* mRNA. *DkXTH2* expression also coincided with fruit softening but was intensified by 1-MCP treatment during the deastringency treatment. These results indicate that fruit softening was related to both *DkXTH1* and *DkXTH2* expression in ‘Saijo’ persimmons.