Title Ripening responses of 'Fuyu' persimmon fruit to exogenous ethylene and subsequent shelf temperature

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Abstract

'Fuyu' persimmon (*Diospyros kaki* Thunb.) fruits were harvested at commercial maturity, exposed to exogenous ethylene for one day, and then put on the shelf under different temperature conditions to elucidate physiological response and postharvest quality changes. Effects on ripening events were discriminated between ethylene treatment and shelf temperature through factorial analysis of variance. Exogenous ethylene at 10 ppm induced significantly higher ethylene evolution and respiration rates, whereas effects of 1-ppm treatment were slight. Unlike ethylene production and respiratory metabolism, flesh firmness was significantly reduced even by a 1-ppm ethylene treatment. Obvious differences in the firmness among ethylene treatments were observed immediately after a 24-h treatment and the tendency continued on the shelves. Effects of shelf temperature were significant on the changes in respiration rates, while the effects were minimal and occasional on the changes in ethylene evolution and flesh softening. Exogenous ethylene also hastened red coloration and calyx abscission. Coloration, however, seemed to be more influenced by shelf temperature. Responsiveness to exogenous ethylene and shelf temperature in 'Fuyu' persimmon may differ according to respective ripening events.