

Title Effects of postharvest application of ethylene gas or ethephon on color development and carotenoid accumulation in Ponkan fruit

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Abstract

Ponkan (*Citrus reticulata* Blanco cv. Ponkan) fruit in Zhenjiang Province is frequently early harvested to avoid winter frost, which results in presence of chlorophylls in the fruit. Postharvest degreening of Ponkan fruit, by either ethylene gas or ethephon, was successfully carried out. The effects of both treatments on color development and carotenoid accumulation were analysed. Fruit CCI (citrus color index) and total carotenoid content increased during storage at 10°C, and was enhanced by both treatments. The treatments, with stronger effects for ethephon dipping, stimulated accumulation of carotenoids in orange color, β -carotene and β -cryptoxanthin, while reduced the percentage of carotenoids in yellow color, lutein, violaxanthin and 9-*cis*-violaxanthin, among total carotenoids.