

**Title** Effects of hypobaric storage on active oxygen metabolism of persimmon (*Diospyros kaki* L.) fruit

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**Citation** ISHS Acta Horticulturae 804:523-526. 2008.

**Keywords** hypobaric storage; active oxygen; persimmon fruit

#### **Abstract**

Hypobaric storage has been shown to significantly inhibit postharvest ripening and senescence and extend shelf life of fruits and vegetables. Persimmon fruit senesces and rots easily after harvested. To better understand the role of hypobaric storage in senescence and decay development of persimmon fruit, experiments were conducted to determine malondialdehyde (MDA) content, relative electrolyte leakage rate, superoxide ( $O_2^{\cdot -}$ ) production rate and hydrogen peroxide ( $H_2O_2$ ) content, as well as activities of superoxide dismutase (SOD) and catalase (CAT). The results showed that the application of hypobaric storage (40-50 kPa at 0-1°C and 85-90% RH) maintained SOD and CAT activities, inhibited increases of both  $O_2^{\cdot -}$  production rate and  $H_2O_2$  content at the late stage of fruit storage, decreased MDA content and relative electrolyte leakage rate. Thus, hypobaric storage could delay an increase of the membrane permeability, reduce the peroxidation of membrane lipids and postpone the fruit senescence.