

**Title** Impact of high-dose, short periods of ozone exposure on green mold and antioxidant enzyme activity of tangerine fruit

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**Citation** Postharvest Biology and Technology. Volume 67, May 2012, Pages 25–28

**Keywords** Antioxidant; Green mold; Ozone; Tangerine

### **Abstract**

The effects of gaseous ozone on the growth of green mold (*Penicillium digitatum*) and the activity of antioxidant enzymes (superoxide dismutase, catalase and ascorbate peroxidase) in the peel of artificially inoculated tangerine (*Citrus reticulata* Blanco cv. Sai Nam Pung) fruit were examined. Ozone ( $200 \mu\text{L L}^{-1}$ ) was applied for 0 (control), 2, 4 or 6 h to inoculated tangerine fruit. Exposing fruit to ozone for 4 and 6 h delayed disease incidence and reduced severity. Scanning electron microscopy confirmed that exposing fruit to ozone for 4 and 6 h reduced growth of fungi on the fruit peel. The activities of superoxide dismutase, catalase and ascorbate peroxidase were increased after ozone fumigation and remained significantly higher than those of the control fruit through three days of storage at 25 °C. Throughout the experiment, fruit qualities in all treatments were not affected by ozone exposure and no phytotoxicity occurred in fruit exposed to high doses of ozone.