

**Title** Effect of electrolyzed oxidizing water and continuous ozone exposure on the control of *Penicillium digitatum* on tangerine cv. 'Sai Nam Pung' during storage

**Author** K. Whangchai, K. Saengnil, C. Singkamanee and J. Uthaibutra

**Citation** Crop Protection, Volume 29, Issue 4, April 2010, Pages 386-389

**Keywords** EO water; *Penicillium digitatum*; Postharvest disease; Tangerine; Ozone

#### Abstract

The effect of electrolyzed oxidizing (EO) water in combination with ozone to control postharvest decay of tangerine cv. "Sai Num Pung" was investigated. The spore suspension containing  $10^5$  conidia ml<sup>-1</sup> of *Penicillium digitatum* was prepared. EO water was generated by electrolysis of various concentrations of NaCl solution (5, 25, 50% and saturated NaCl). The spore suspension was inoculated into EO water and incubated at 27 °C for 1, 2, 4, 8 and 32 min. It was found that the EO water with saturated NaCl completely inhibited the spore germination of the fungus within 1 min. When the fruits inoculated with *P. digitatum* were washed in EO water at the same concentrations as previous experiment for 4, 8 and 16 min and stored at 5 °C for 18 days, it was found that immersion of the fruit in EO water for 8 min was the most effective to reduce disease incidences. Moreover, washing fruit in EO water and kept in a refrigerated chamber at 5 °C with continuous ozone exposure at a concentration of 200 mg l<sup>-1</sup> for 2 h day<sup>-1</sup> to extend storage life suppressed the disease incidence until 28 days. However, none of the treatments had any effect on the quality of fruit such as total soluble solids, titratable acidity, percent weight loss and peel color. Therefore EO water may be useful for surface sanitation and ozone has potential to control the recontamination of postharvest diseases in tangerine fruit in storage room.