

Title Effect of ozone in combination with some organic acids on the control of postharvest decay and pericarp browning of longan fruit

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Abstract

The effects of ozone, in combination with citric, ascorbic and oxalic acid, on postharvest decay and pericarp browning of longan fruit cv. "Daw" were studied. Fruits were exposed to ozone at a concentration of $200 \mu\text{l l}^{-1}$ for 0 (control), 15, 30, 60 and 120 min; then stored at a 25 °C. Exposing fruits to ozone for 60 and 120 min significantly reduced the microorganism population on the longan fruit surfaces immediately after fumigation and for 3 d in storage. However, when exposure time was increased to 120 min, disease incidence increased. In a second experiment, longan fruits were dipped in citric, ascorbic and oxalic acid solutions at concentrations of 0%, 5% and 10% w/v. Oxalic acid at 5% was a more potent anti-browning agent compared with other acids. Fruit treated with ozone in combination with oxalic or citric acid had less browning and a reduction of polyphenol oxidase. Therefore, ozone in combination with oxalic or citric acid could be a partial alternative to sulphur dioxide fumigation as a control of postharvest decay and browning.