

Title Physiological and biochemical responses in peach fruit to oxalic acid treatment during storage at room temperature

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Abstract

Physiological and biochemical responses in peach fruit (*Prunus persica* L.) cv. 'Bayuecui' to two concentrations (1 and 5 mM) of oxalic acid treatment were studied during storage at room temperature (25 °C). Slower relative leakage rate, higher flesh firmness, lower respiration, increased activities of antioxidant enzymes (superoxide dismutase, SOD; peroxidase, POD; catalase, CAT; ascorbate peroxidase, APX) and polyphenol oxidase (PPO), and a decreased lipoxygenase (LOX) activity in treated fruit were observed as compared with the control. Moreover, significant decreases in the production of active oxygen species (AOS) (superoxide, O_2^- , hydrogen peroxide, H_2O_2) and lipid peroxidation in treated fruit were found at the later time of storage. The effects of oxalic acid could therefore contribute to maintaining the membrane integrity and delaying the fruit ripening process. Increased activities of POD, SOD, and PPO might also possibly be of benefit to disease resistance during storage.