

Title Exogenous salicylic acid inhibits browning of fresh-cut Chinese water chestnut
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Abstract

The potential usage of salicylic acid (SA) as a powerful anti-browning agent in fresh-cut Chinese water chestnut (CWC) was investigated. The fresh-cut CWC were dipped for 1 min in solutions of 0, 1, 2 or 4 mM SA, then placed in trays over-wrapped with plastic films, and finally stored at 4 °C. Changes in color, eating quality, and disease incidence were evaluated, while activities of phenol-associated enzymes, polyphenol oxidase (PPO), peroxidase (POD) and phenylalanine ammonia lyase (PAL), and concentrations of total soluble solid, titratable acidity and ascorbic acid were measured. SA treatment delayed discoloration, maintained eating quality with higher content of the quality attributers, and reduced activities of or delayed the increases in activities of PPO, POD and PAL in fresh-cut CWC. However, SA had no significant inhibition of the activities of PPO and POD in an in vitro test, indicating that the beneficial effect of SA was indirect. Further research is needed to elucidate the inhibition of the surface browning of the fresh-cut CWC by SA.