Comparative study of effects of resveratrol, 1-MCP and DPA treatments on postharvest quality and superficial scald of ‘Starkrimson’ apples

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Abstract

The effects of resveratrol (Res), 1-MCP and DPA on quality and superficial scald of ‘Starkrimson’ apples were studied in this paper. The results showed that all treatments maintained firmness and SSC, inhibited α-farnesene and conjugated trienes, but there were no significant differences in treatments. Each treatment markedly inhibited the increase of relative membrane permeability, MDA content and PPO activity, whereas improved POD activity of the skin tissues, but it didn’t occur remarkable differences in treatments. After 210 d at 0 °C and 210 d plus 10 d at 20 °C, each treatment obviously inhibited scald, but it almost had no significant difference in treatments. Hence, Res has similar effects with 1-MCP and DPA in maintaining quality and inhibiting superficial scald in ‘Starkrimson’ apples during storage and shelf life. It is likely to be a new preservative with safe and non-toxic effects, and it can be a potential substitute for 1-MCP and DPA.