Title Influences of preharvest spraying *Cryptococcus laurentii* combined with postharvest chitosan coating on postharvest diseases and quality of table grapes in storage

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Abstract

The effects of preharvest spray with *Cryptococcus laurentii* combined with chitosan coating after harvest on decay and quality of table grapes during storage periods were evaluated in the present study. Preharvest spray with *C. laurentii* (PreA) significantly decreased decay index (DI), and postharvest chitosan coating (PCC) enhanced the effectiveness of the pre-harvest spray when fruits were stored at 0 °C. PreA combination with PCC increased the activities of polyphenol oxidase (PPO) and phenylalanine ammonia-lyase (PAL) of fruit in storage. PreA + PCC treatment was effective in reducing weight loss of fruits by 85% at 17 d storage and 38% at 42 d storage as compared to PreA alone at the same stage. In addition, PreA enhanced the ratio of soluble solids content (SSC) to titratable acid (TA) by 12% at harvest time, 7% at 17 d storage and 25% at 42 d storage, mainly by increasing SSC and decreasing TA in fruit stored at 0 °C. These results suggested that integration of preharvest spray with *C. laurentii* and postharvest chitosan coating treatment may be a promising management strategy for decay control and quality maintenance of table grapes.