Title Effects of grape seed extract and chitosan treatments on postharvest quality of Yali pear fruit

Author Yang Cui, Jian Li, Jiankang Cao, Yumei Zhao and Weibo Jiang

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Abstract

Effects of grape seed extract (GSE) and chitosan (CTS) treatments on the posthavest quality of Yali pear (*Pyrus bretschneideri* Rehd.) fruit were investigated in this study. Both GSE and CTS are natural extracts. They could be applied to maintain postharvest quality without environment pollution and risk to public. Pears were immersed in GSE (0.1%;1.0%, 1.5%), CTS (1.5%) and CTS (1.5%) plus GSE (0.5%) separately for 2 min with a negative pressure of 0.05 MPa and 3 min with normal pressure. Then the pears were air-dried, packaged, and stored at 20°C, 85%-95%RH for further observation. Results indicated that postharvest fungal rot and weight loss of the pears were all reduced significantly by GSE and CTS treatments, alone or combined. The rot rate of the pears treated with 1.5%GSE, CTS, and CTS plus GSE was 21.7%, 39.7%, and 40.5%lower, and the weightless rate was 18.3%, 30.4%, and 22.6% lower than that of the control. Meanwhile, an inhibitory effect was observed on stem browning of Yali pears by the GSE treatment. The brown stem index was reduced by 1.0% GSE, 1.5% GSE and CTS plus GSE treatments by 46.1%, 54.9%, and 53.9% respectively, but enhanced by the CTS treatment in some degree. Moreover, the weightless rate and brown stem index had a negative correlation with the concentration of GSE. Beneficial effects on postharvest quality were also shown in terms of delaying firmness, soluble solids content, and titratable acidity declining. As the results suggested, the postharvest quality of Yali pear fruits was maintained by GSE and CTS treatment effectively, and the optimum concentration for GSE treatment was 1.5%. A wide application prospect of GSE and CTS on fruits and vegetables storage could be expected.