

Title Improved control of postharvest decay in Chinese bayberries by a combination treatment of ethanol vapor with hot air

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Abstract

The effect of ethanol vapor treatment (EVT, 250 or 500 $\mu\text{L L}^{-1}$ for 3 h) alone or in combination with hot air treatment (HAT, 48 °C for 3 h) on postharvest decay and microbial loads in Chinese bayberries was investigated. Treatment with ethanol vapor or hot air alone both resulted in significantly lower decay incidence caused by *Verticicladiella abietina*, *Penicillium citrinum* or *Trichoderma viride* compared with the control. The combined treatment of 500 $\mu\text{L L}^{-1}$ ethanol vapor with hot air showed the lowest incidence of fruit decay caused by these pathogens. This treatment also significantly inhibited spore germination and germ tube elongation of the pathogens *in vitro* than EVT or HAT alone. Meanwhile, the combined treatment exhibited the lowest natural decay incidence and microbial loads on Chinese bayberries without impairing fruit quality. These results suggest the usefulness of the combined treatment for reducing fruit decay in Chinese bayberries.