

Postharvest disease control of mango fruit and the regulating mechanisms

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Abstract

Mango (*Mangifera indica* L.) is a typical climacteric fruit with an obvious change in physiology and quality after harvest, including rapid ripening, physiological disorder and serious decay, resulting in quality deterioration and short postharvest life. Postharvest decay caused by anthracnose (*Colletotrichum gloeosporioides*) is also serious in mango fruit. Recently, some chemical compounds have received increasing attention for the control of diseases in mango fruit. We found that application of exogenous oxalic acid is effective in decreasing ethylene production and controlling decay of mango fruit during storage periods, and pre-harvest borate spray can also effectively reduce postharvest anthracnose. These results demonstrate that application of oxalic acid and borate is a promising method to suppress post-harvest deterioration and extend the shelf-life of mango fruit. We have proved that oxalic acid treatment has a combination of physiological effects associated with delaying the ripening process and inhibiting fungal pathogens. Borate is effective at inhibiting spore germinability of *C. gloeosporioides* due to delaying nuclear division, impairing endocytosis, and damaging ultrastructure of the fungal spores under borate repression.