

Alternative treatments for postharvest decay control on 'Ponkan' tangerines

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Abstract

Penicillium spp. fungi are the most frequent pathogens associated to postharvest decay in citrus fruit. Pre- and postharvest chemical sprays are the most widespread methods to reduce decay incidence, but alternative substances have been reported as promising substitutes for postharvest treatments. Here we evaluated the effects of different combinations of sodium bicarbonate and potassium sorbate and heat treatments in single or combined applications as alternative treatments for the control of green and blue mold and on the postharvest quality of 'Ponkan' tangerines in comparison with control treatments using chlorine dioxide and imazalil. The tangerines were evaluated for internal quality and decay incidence after 15 or 30 days of cold storage at 5°C plus 5 additional days at room temperature. Quality traits were not affected by any of the treatments. Sodium bicarbonate at 2% (w/v) and potassium sorbate at 0.5% (w/v) significantly reduced decay on 'Ponkan' fruit after 30 days of storage. However, using these salts at 3% and 1%, respectively, in an immersion treatment at 58°C for 30 s affected peel brightness. Further investigations on salt and heat combinations are needed to determine if these are feasible alternatives to fungicides to control postharvest decay of citrus fruit.