Heat treatment to control brown rot and preserve the fruit quality of peaches

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Abstract

In order to evaluate the efficacy of a hot water (HW) treatment against postharvest diseases of peaches, four cultivars, 'Springebelle', 'Rich Lady', 'Symphonie' and 'Benedicte® Meydicte*', were dipped for 20 s in water at 60°C. After treatment, fruits were stored at 0°C for 4 days, followed by another 4 days of shelf life. Fruits dipped in water at room temperature represented the positive control (PC) and fruits not dipped in water were the negative control (NC). The HW treatment significantly reduced brown rot in naturally infected peaches with a decay reduction of approximately 80%. The HW treatment also significantly affected the epiphytic microflora population. In fact, the fungal population on HW treated fruit was reduced by 70%, the yeast population by 20%, and the bacteria population was completely inhibited compared to PC-treated fruits. A physico-chemical analysis revealed no substantial differences between HW, PC, and NC treated fruits, although there was a slight improvement in acceptability for HW treated fruits. Based on our results, HW treatment may be of commercial interest for the control of brown rot, reducing the pathogen inoculums, and the general population of microflora on the fruit surface, maintaining quality, and prolonging shelf life in several cultivars of peaches.