Title Comparing ripening and storage characteristics of ‘Oded’ peach and its nectarine mutant ‘Yuval’

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Abstract

A peach-to-nectarine mutant ‘Yuval’, a white, melting-flesh, cling-stone fruit was compared over three seasons with its peach progenitor ‘Oded’, an early season cultivar, to study ripening and storage characteristics. Twenty-four genome-spanning single sequence repeats markers showed the identity of the peach with its nectarine mutant at the DNA level. There was no difference in cell size at harvest between the ‘Oded’ peach and ‘Yuval’ nectarine, although ‘Oded’ peach was 24% larger by weight than ‘Yuval’. The ‘Oded’ peaches were also less acidic, and had less soluble solids than the ‘Yuval’ nectarine at harvest. Fruit were stored at two temperatures, 5 °C and 0 °C. Softening was faster in the fruit of both cultivars stored at 5 °C than 0 °C. At 3 d ripening at 20 °C after cold storage, there was more expressible juice at 5 °C than 0 °C in the fruit of both cultivars. ‘Oded’ peaches developed internal browning and woolliness at 3 d ripening at 20 °C after 5 and 7 weeks 5 °C storage, and had lower expressible juice than ‘Yuval’ nectarines. Cold storage at 0 °C plus ripening reduced flesh browning, woolly texture and flesh bleeding incidence in ‘Oded’ fruit compared to ripening after storage at 5 °C. Flesh browning and woolly texture incidence was lower in the ‘Yuval’ nectarines than ‘Oded’ peaches. Overall, the data suggest that ‘Oded’ and ‘Yuval’ are genetically similar and ‘Yuval’ conserves several fruit and ripening characteristics that usually come with peach-to-nectarine mutations. Furthermore, ‘Yuval’ nectarine is comparatively more resistant to chilling injury (flesh browning and woolly texture) than ‘Oded’ peach after prolonged storage.