The impact of genotype and harvesting day on qualitative attributes, postharvest performance and bioactive content of loquat fruit

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Abstract

Due to scalar on-tree ripening, harvest of loquat fruit is successive, spanning for several weeks, depending on the cultivar considered and the cultivation practices applied. Notably, early harvested fruit receive appreciably high prices on the market. The aim of the current study was to dissect the effect of harvesting day on mechanical properties, postharvest performance and phytochemical attributes (free and bound phenolic compounds and antioxidant capacity) of the predominant loquat cultivars grown in Cyprus (cvs. 'Karantoki' and 'Morphitiki'). Determination of the aforementioned attributes at harvest (H) and after additional maintenance at room temperature for 3 days (H+3) for four successive harvesting dates (H1-4) were determined. Flesh firmness was slightly higher in early-harvested compared to late-harvested fruit, while slight or no differences after shelf life period for both cultivars were monitored. 'Karantoki' fruits manifested higher values of ripening index (SSC/TA) than 'Morphitiki'; such values were higher with the progress of harvest date due to a significant decrease of titratable acidity. 'Morphitiki' fruits were generally characterized by higher phenolic content, along with higher antioxidant capacity. No evident differences were registered between the harvest date and the shelf life period for both cultivars regarding free phenolic content. This study also highlights the significance of bound phenolics that contribute to the phenolic fraction of loquat fruit by 21.6–37.5%, depending on the cultivar and storage condition applied. Overall, the current study sheds light in the unexploited area of phytochemical properties of loquat fruits derived from successive harvesting dates.