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Phenotypic characterization of qualitative parameters and antioxidant contents in peach and nectarine fruit and changes after jam preparation

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Abstract

BACKGROUND: Sugars and antioxidants in peaches contribute to fresh fruit quality and nutrition; however, information on widely grown cultivars and changes induced after peach jam preparation is limited. In the present study, colour, sugars and antioxidant parameters were determined in fruit and jam from 45 peach and nectarine cultivars.

RESULTS: Pronounced varietal differences were found in sorbitol (42-fold range), total phenolics (TPs) and antioxidant capacities (10- to 19-fold range). Sorbitol levels were greater in non-melting peach, followed by nectarine, and lower values were found in melting peach cultivars. Late-harvested peach and nectarine cultivars tended to have a higher soluble solid content and antioxidant potential. Cultivars with relatively high antioxidant contents produced darker and redder jams, containing more antioxidants, than the jam or the fruit from the other cultivars. Jam-TPs were reduced by 48% compared to fruit-TPs, with greater reduction being noted in high antioxidant cultivars. The most favorable jam organoleptic characteristics were found in 'Morsiani 90', 'Amiga', 'Romea' and 'Alirosada', as well as in non-melting compared to melting peach cultivars.

CONCLUSION: The best cultivars for each fruit flesh type and jam were identified. Peach jam could be an alternative substitute when fresh fruit is not available and when it is prepared with high antioxidant cultivars.

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Keywords: antioxidants; fruit; jam; *Prunus persica*; sensorial analyses; sugars