**Title** Antioxidant capacities, carotenoids and polyphenols evaluation of fresh and refrigerated peach and nectarine cultivars from Italy

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**Abstract**

Chemical–physical properties, colour parameters, antioxidant activities (AA), carotenoid and polyphenol levels (CL) in seven cultivars of yellow flesh peaches, five cultivars of yellow flesh nectarines and one cultivar of white flesh nectarines at harvest time and after 7 days of cold storage were evaluated. Peaches had major variability in flesh firmness (FF) and titratable acidity (TA) and lower soluble solid concentration (SSC) than nectarines. Evaluation of ground colour parameters, $a^*$, $b^*$ and $L^*$, showed that nectarines had a yellow-orange hue with high lightness, while peaches were darker, tending to red-green. Hydrophilic, lipophilic antioxidant activities of extracts (W-AA and L-AA), carotenoids and polyphenols levels (CL and PL) were evaluated and their relation with commercial maturation. The average of W-AA at harvest time was 11.0 TEAC, while the L-AA values at harvest time was on average higher in peaches (2.0 TEAC) than in nectarines (1.3 TEAC). The yellow flesh had higher amounts of total carotenoids (182.45 μg/100 g fw for peaches and 117.37 μg/100 g fw for yellow flesh nectarines). During cold storage, W-AA increased for nectarines (+22.9% in yellow flesh and +19.2% in white flesh) and peaches as well as polyphenolic compounds (+13.37%) while, contents of carotenoids decreased (−8.7%).