

**Title** Effects of cultivar, orchard elevation, and storage on fruit quality characters of sweet cherry (*Prunus avium* L.)

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#### **Abstract**

Fruit quality characters were analysed in the sweet cherry cultivars, Burlat, Van, Tragana and Mpakirtzeika, harvested from low (39–59 m), medium (216 m) or high (490–546 m) elevation sites. The effects of storage for 2 or 4 days at 2 °C and 1 day at 20 °C on the fruit antioxidant contents were also evaluated. Tragana and Mpakirtzeika had greater fruit fresh weight (FW) and total soluble solid content compared to Van and Burlat, the latter being the most red colored. Tragana and Burlat had greater total phenolic content and total antioxidant capacity, measured by DPPH extinction, compared to Mpakirtzeika and Van (mean values 204.4 mg vs. 103.7 mg gallic acid equivalent 100 g<sup>-1</sup> FW, and 176.1 mg vs. 79.3 mg ascorbic acid equivalent 100 g<sup>-1</sup> FW, respectively). The geographic elevation had a marked influence on the cherry antioxidant content in all studied cultivars, apart from Van, with high elevation orchards producing cherries with greater contents of antioxidant compounds compared to lower elevation orchards. Changes in the antioxidant contents during storage were depended on the cultivar and some times on the orchard elevation. Total antioxidant capacity was significantly correlated with total phenolic content in Tragana, Burlat and Mpakirtzeika, but not in Van; nevertheless this was not the case during storage.