Quality characteristics of sweet cherry cultivars following harvest and cold storage: a comparative study

A. Evangelidou1, E. Karagiannis1, E. Siskas1, I.S. Minas1, A. Lazaridou2, A. Molassiottis1*

1Department of Pomology, School of Agriculture, Aristotle University of Thessaloniki, 541 24 Thessaloniki, Greece
2Laboratory of Food Chemistry and Biochemistry, Faculty of Agriculture, Aristotle University of Thessaloniki, 541 24 Thessaloniki, Greece

* Email address: amolasio@agro.auth.gr

The aim of this study was to evaluate the quality characteristics of different cherry cultivars, namely Canada Giant, Ferrovia, Giorgia, Lapins, Regina, Sabrina, Samba, Satin and Summit during commercial harvest as well as following cold storage (0 °C) for 15 days (Figure 1).

![Image 1](Figure 1). Fruits of cherry cultivars in the stage of commercial harvest (A) and following cold storage for 15 days (B).

It was evidenced that the fruits of Regina, Satin and Ferrovia exhibited higher respiratory activity in relation to the fruits tested (Figure 1A). The higher resistance of the flesh to deformation recorded in Regina, Sabrina and Samba, while the lowest in Canada Giant, Summit and Giorgia (Figure 1B). Also, Sabrina and Samba showed greater resistance to cutting of the stem, while Satin and Ferrovia the smallest (Figure 1C). The skin colour, expressed as Hue index displayed higher values in Canada Giant, Summit, Samba and Sabrina, while lower values were recorded in Satin, Lapins and Giorgia (Figure 1D).

![Figure 2](Figure 2). Change in respiration rate (A, E), resistance flesh deformation (B, F), stem removal (C, G) and skin color (Hue index) (D, H) in sweet cherry cultivars at harvest (A, B, C, D) as well as following cold storage (0°C) for 15 days plus for 5 days at 20°C (E, F, G, H). Values followed by the same letter are not statistically significant (Duncan's test, P < 0.05). Each time point included 30 sweet cherries.

Furthermore, fruits were cold stored (0°C) for 15 days and then transferred to 20°C for 5 days. It was found that Samba, Summit and Lapins had the lowest rate of respiration while Ferrovia had the highest (Figure 1E). The flesh resistance to deformation was higher in Samba, Regina and Lapins but lower in Ferrovia (Figure 1G). Also, the lower values of stem removal was recorded in Satin, Ferrovia and Giorgia whereas the higher values was observed in Summit, Regina and Canada Giant (Figure 1G). Finally, Hue index values were high in Canada Giant and Summit but low in Satin and Regina (Figure 1H). Based on optical evaluation, Ferrovia and Regina showed high resistance to stem browning while Sabrina, Canada Giant, Satin and Samba was found relative sensitive (data not shown).