

**Title** Postharvest stability of antioxidant compounds in hawthorn and cornelian cherries at room and refrigerator temperatures—Comparison with blackberries, white and red grapes

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#### Abstract

Antioxidant capacity (DPPH, ABTS and FRAP assays), as well as total phenol (TP), total flavonoid (TF) and total anthocyanin (TA) contents of hawthorn (*Crataegus monogyna* L.), cornelian cherries (*Cornus mas*), blackberries (*Rubus fruticosus*) and white and red grapes (*Vitis vinifera* L.) were monitored during postharvest storage at room and refrigerator temperatures. Hawthorn exhibited the highest initial TP ( $891.15 \pm 10.83$  mg GAE/100 g FW) and TF contents ( $536.76 \pm 15.52$  mg CE/100 g FW) as well as antioxidant capacity using FRAP ( $6.33 \pm 0.10$  mmol Fe<sup>2+</sup>/100 g FW) and ABTS ( $7.27 \pm 0.04$  mmol TEAC/100 g FW) essays, while cornelian cherries exhibited the highest antioxidant capacity measured by the DPPH assay ( $2.88 \pm 0.02$  mmol TEAC/100 g FW). Storage at 25 °C facilitated faster spoilage of all analyzed fruits. Significant fluctuations in TP, TF and TA contents were observed for all fruits during storage, except for the TP content of blackberries stored at 4 °C and TF content of blackberries stored at 25 °C, which remained relatively stable. Storage at 4 °C did not adversely influence the content of phytochemicals in analyzed fruits, except for hawthorn, which showed a 15.1% lower TA content at the end of storage (37 days). As evidenced from the high degree of positive correlations between antioxidant assay results and phytochemical content determinations, antioxidant capacity paralleled the fluctuations in phytochemical content and depended greatly on the type of fruit in question.