

CHANGES OF ANTIOXIDANT COMPOUNDS OF BROCCOLI (*Brassica oleracea* L.var. *Italica*) DURING STORAGE AT LOW AND HIGH TEMPERATURES

Zahra BALOUCHI, Gholam-Ali PEYVAST, Mahmood GHASEMNEZHAD, and
Mohammad SAADATIAN

Abstract:

The influence of storage temperature on the changes of antioxidant compounds of five broccoli cultivar was investigated during two different storage temperatures. Florets were stored three days at 20 °C and 40 days at 0 °C, followed by two additional days at 20 °C. The florets deterioration rate was strongly affected by storage temperature, subsequently, the rapid decrease of, chlorophyll, carotenoid and total flavonoid was observed at 20 °C. The antioxidant protection occurred by total phenol, flavonoid, carotenoid and also peroxidase (POD) enzyme are important for the retention of green color in broccoli flower buds and the increases in POD were likely related to florets yellowing. The result showed that in both temperatures higher phenolic content, antioxidant capacity and lowest POD activity was associated with maintenance of broccoli quality and chlorophyll and delayed lipid peroxidation. The phenolic content and lowest pod activity in 'General' and 'Revolution' cultivars at 0 °C storage and 'Liberty' and 'Revolution' at 20 °C storage is important for the retention of green color in broccoli florets.