Abstract

Physical (weight, firmness) and compositional (sugars, organic acids, ascorbic acid, phenolic compounds and carotenoids) changes of red sweet peppers (*Capsicum annuum* L.) were monitored during 21 days of cold storage (at 7.5 °C); fruits were stored without packaging, packaged in low density polyethylene bags, or after hot water dipping (53 °C for 4 min) and packaging. Packaging prevented water loss, and preserved the firmness of the fresh product. Sugars (fructose and glucose) content was practically constant throughout the whole storage time, for all treatments. A moderate accumulation of citric acid was observed during storage, but no marked effects of packaging and hot water dipping on citric and malic acid content. Ascorbic acid content slightly increased in unpackaged and packaged fruits, but not in treated+packaged peppers. Hydroxycinnamics total content seemed not to be affected by cold storage, packaging or hot water treatment, whereas glycosylated flavonoids showed somewhat lowered levels during storage, particularly in the case of unpackaged and packaged+treated fruits. Regarding carotenoids content, the effect of the considered storage conditions seemed to be much smaller than that due to ripening stage. Provitamin A content showed an increasing trend in unpackaged and packaged fruits; packaged+treated peppers were characterised by a lower retention of provitamin A and a higher level of capsanthin and cucurbitaxanthin A with respect to not treated fruits. On the whole, packaging and hot water treatment did not produce noticeable adverse effects on the majority of the examined compositional quality parameters.