Title Changes of physicochemical quality, phenolics and vitamin C content in hardy kiwifruit (*Actinidia arguta* and its hybrid) during storage

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Abstract

The effect of storage and the stage of maturity of hardy kiwifruits on the physicochemical quality, phenolics (TPC) and ascorbic acid content (AAC), as well as antioxidant activity (AA) were studied in this work. The phenolic compounds in hardy kiwifruits were separated and characterized by HPLC. The investigation was carried out on the two cultivars of *Actinidia arguta* – 'Weiki', '74-49' and the hybrid of *A. arguta* and *Actinidia purpurea* ('D14'). Fruit firmness rapidly decreased and the soluble solid content (SSC) increased for all cultivars during the first 14 days of storage at 1 °C. The AAC and TPC in vine ripe fruits were similar to the ones of the fruits of storage harvest maturity (8–10% SSC). AA content depended on the clone and either decreased during storage or remained almost unchanged. There was an increase in TPC after 7 days of keeping the fruits in a cold store chamber at the temperature 1 °C, but a longer period of storage caused a decrease in these compounds. AA (at harvest for storage purposes) was higher than that of vine ripe fruits and the ability to absorb free radicals slightly decreased during storage. There was a strong correlation between AAC, TPC and AA. That means that phenolics and vitamin C affect the antioxidant activity of hardy kiwifruits.