Title Total phenols and sugars distribution in the inflorescence of two artichoke varieties. Effect of refrigerated storage

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Abstract

The aim of the present work was to study the distribution and variation of polyphenols, sugars and ions in artichokes during the refrigerated storage. Field-grown artichoke varieties "Francés" and "Ñato" were used. Artichokes were conditioned in groups of six units, placed on expanded polystyrene trays and covered with a perforated plastic film (PY1). They were stored at 0°C for 30 days. At the beginning and at the end of the storage period, samples were taken from the central disc as well as from bracts removed by verticil for further analysis. Sugars profile was determined by HPLC analysis, total phenols by colorimetry and Na and K content by flame photometry. The highest amount of phenols was found in the "Francés" variety. In both varieties, phenol content decreased towards the outer verticils, being more remarkable in the "Francés" variety. After the storage period, no variation in phenol content was observed in both varieties. Sugars profile (glucose, sucrose and fructose) was the same in both varieties. However, significant differences in sucrose content were found between the two varieties. After storage at 0°C, a slight decrease of total sugars content was observed. As regards the distribution of sugars in each artichoke, an increase towards the internal part was observed, with a considerable decrease in the disc. This observation was more evident in the "Francés" variety. Differences in the amount of sodium and potassium ions were observed between the varieties studied here. However, the amount of potassium was considerably higher than that of sodium in both varieties. On the other hand, no significant differences were found during storage.