

Title Changes in quality and oxidative status of two cultivars of 'Piel de Sapo' melon fruit during cold storage

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Abstract

A conservation assay at two temperatures, 2 and 9° C, has been carried out with two different cultivars of Spanish 'Piel de Sapo' melon fruit, 'Sancho' and 'Ruidera', with the aim of monitoring their postharvest behaviour regarding fruit quality and oxidative status during storage at low temperature and posterior reconditioning at 20°C for 6 days in order to simulate the commercial chain. These two Spanish 'Piel de Sapo' melon cultivars showed different aptitude to low temperature storage and evolution of fruit quality and oxidative status during storage and posterior reconditioning was monitored by different parameters that are closely related to adaptive responses of plant tissues to adverse conditions. Both melon cultivars showed alterations (depressions and browning) on the rind in fruits exposed to 2° C, being more evident and of earlier appearance in 'Sancho' cultivar. Weight loss evolution depended on storage period, melon cultivar and temperature. It was noticeable the beneficial effect of low temperatures in the delay of pulp firmness loss, in particular in 'Ruidera' melon, which even after 32 days at 2°C plus 6 days at 20°C values were still within the standards of fruit quality. The deterioration of cell membranes, evaluated by lipid peroxidation determination, showed different profiles between the two cultivars, at both temperatures of storage, and in the case of 'Ruidera' it was observed a somewhat parallelism in the evolution of this oxidative status parameter and that of activity of the superoxide dismutase antioxidant enzyme.