Title Quality changes on minimally processed purslane baby leaves growth under floating trays system

Author Stephanie Rodríguez-Hidalgo, Francisco Artés-Hernández, Perla Gómez, Juan Antonio Fernández and Francisco Artés

Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey. 256 pages.

Keyword Minimally; fresh-cut; purslane baby leave

Abstract

Minimally processed or fresh-cut vegetables have strongly increased their market share all over Europe. The purslane (*Portu oleracea* L.), an annual crop with fresh succulent leaves, is often consumed in salads and used as a medicinal plant for hundreds of years due to their high contain in biologically active compounds. The innovative cultivation under the floating trays system allows to obtain clean, safe and high quality raw material. In addition, it is relatively cheap and easy to implement at commercial level, and can be considered as an efficient system to produce leafy vegetables. As far as we know, there are very scarce studies about the postharvest quality changes of minimally processed baby leaves grown under this cultivation system. The aim of this work was to study the sensory and microbial quality changes as well as the evolution of the total antioxidant capacity during shelf life. Purslane was grown in floating trays with two different aeration systems (continuous and control). After harvest, the raw material was pre-washed with tap water at 5°C and subsequently, it was 2 min washed and disinfected by immersion in a solution at 5°C with 100 ppm ClONa at pH 6.5. As control, a tap water washing at 5°C was done. Then, the purslane was spin dried to eliminate water excess. All operations were performed at 5 °C. The final product was packed under passive modified atmosphere packaging in polypropylene baskets sealed on the top with a bi-oriented polypropylene and stored up to 10 days at 5°C. The steady estate of the internal atmosphere within all baskets was reached after 7 days being of 11-13 kPa O_2 and 8-10 kPa CO_2. The total antioxidant capacity decreased from 10-20% in all treatments regarding the initial values (13-11 mg ascorbic aq kg^{-1} fw). The initial mesophilic counts were 2 - 3 log cfu g^{-1}, and after 10 days at 5°C it remained below the limits established for safety consumption, but without differences among treatments. As a main conclusion, floating trays was found to be a good system for the cultivation of purslane for this kind of industry due to the low total initial microbial load, which can avoid or reduce the use of disinfectants, while keeping overall quality.