

Title Effect of packaging film and initial oxygen concentration on quality maintenance of shredded green onion

Author Ji Gang Kim, Kevin F. Yaptenco, and Jae Wook Lee

Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

Keywords fresh-cut; green onion; packaging film; initial oxygen concentration

Abstract

The effect of the interaction between packaging film and the initial headspace O₂ on quality of fresh-cut green onion has not been reported. Green onion was shredded, washed, dried and packaged using 50 mm PE, 80 mm Ny/PE, and 35 mm micro perforated P-Plus film (35 P-Plus), with initial headspaces of 3, 10, and 21 kPa O₂ or packages were vacuum packaged. Packages were hermetically sealed and stored at 5°C for up to 14 days. Initial gas flushing (3, 10, 21 kPa of O₂) did not affect gas composition significantly and quality in three film packages. Vacuum packaged samples had higher CO₂ concentrations and off-odor scores compared to other initial oxygen treatments in all packaging film. With 50 PE, which was estimated as an optimum packaging film for shredded green onion, samples in non-vacuum packages reached equilibrium CO₂ level after four days. Samples packaged in 35 P-Plus kept good quality for 10 days as well as those in 50 PE-packages. Though 35 P-Plus had more than 10 kPa O₂ from day 2, no yellowing was found until the end of storage. In general, off-odor of 35 P-Plus packages was less than in 50 PE packages. Samples packaged in 80 Ny/PE, which is a common packaging method for shredded green onion in Korea, had higher CO₂ concentration, electrolyte leakage, yellowness, and off-odor than other films. 50 PE or 35 P-Plus could be a package film that is an alternative to 80 Ny/PE film when packaging fresh-cut green onion.