

Title Extension of storage and quality maintenance of 'Rocha' and 'Packham's Triumph' pears using modified atmosphere packaging (*Bag-It-Fresh*)

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Abstract

'Rocha' and 'Packham's Triumph' pears were harvested in January 2011 when the fruit in the orchard reached flesh firmness values of 67.6 and 74.7 N, respectively. Fruits were packed in linear low density polyethylene (100 μ m, Bag-it-Fresh, B.I.F. 1500, Magna Chemical Canada Inc.). Packed and non-packed fruits were stored for 180 days in cold room at $0 \pm 1^\circ\text{C}$ and $90 \pm 5\%$ RH. Pears were evaluated on flesh firmness, soluble solids, weight loss and epidermis color after 30, 60, 90, 120, 150 and 180 days of cold storage and after five days at room temperature ($20 \pm 1^\circ\text{C}$). Acceptability sensorial test was performed five days after removing fruit from the cold storage. Modified atmosphere packed (MAP) 'Rocha' pears showed flesh firmness values of 60.3 N after 180 days of cold storage while non -packed pears showed 46.9 N. At the same time, MAP 'Packham's' pears had firmness values of 61.0 N whereas the nonpacked ones showed 37.8 N. MAP pears from both varieties kept by 180 days in a cold storage had lower soluble solids than non-packed fruits. *Bag-it-Fresh* reduced weight loss by 7.4 times in 'Rocha' and 10.5 times in 'Packham's' pears after 180 days in cold storage. MAP 'Packham's' pears had an increase on 1 % in weight loss when fruit were removed to room temperature whereas non-packed pears had 2.8 %. Non-packed pears from both varieties had more noticeable changes in the epidermis color (from green to yellow), and they were intensified after being removed to room temperature. The greatest acceptability values were attributed to MAP fruits after 150 days of cold storage. Nonpacked pears from both varieties became inappropriate for consumption five days after the longer period of cold storage (180 days). *Bag-it-Fresh* extends the storage of 'Rocha' and 'Packham's Triumph' pears by a month, reduces substantially the weight loss and keeps the sensorial quality of fruits for long periods of cold storage.