

Title Effect of ripeness on the shelf-life of fresh-cut melon preserved by modified atmosphere packaging

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Abstract

Fresh-cut 'Piel de Sapo' melon was processed at different ripeness stages and stored under modified atmosphere packaging for 35 days at 5 °C. Raw material firmness and soluble solids content ranged from 6.5 to 3.9 N and 11.1 to 14.3 °Brix, respectively. The effects of a 2.5 kPa O₂+7 kPa CO₂ packaging atmosphere and a dip of 1% ascorbic acid and 0.5% calcium chloride on physiology, microbiological stability as well as color and firmness were evaluated. An intermediate stage of ripeness at processing was the most suitable to extend the shelf-life of fresh-cut 'Piel de Sapo' melon. Green-mature fresh-cut melon reduced CO₂ accumulation and ethanol production. In addition, a treatment with ascorbic acid and calcium chloride in combination with modified atmosphere packaging, contributed to a greater extension of the shelf-life of fresh-cut melon than that reported for fruits stored under non-modified atmosphere, slowing down the growth of microbial populations, maintaining the original color and reducing softness. Thus, the shelf-life of green-mature fresh-cut 'Piel de Sapo' melon dipped in an ascorbic acid and calcium chloride solution and packaged under modified atmosphere was about 10 days.