

Title Using polysaccharide-based edible coatings to enhance quality and antioxidant properties of fresh-cut melon

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Abstract

The effect of alginate, pectin and gellan-based edible coatings on the shelf-life of fresh-cut 'Piel de Sapo' melon was investigated. Gas exchange, antioxidant properties, color, firmness, sensory quality and microbial growth of fresh-cut melon were studied during 15 days at 4 °C. Gellan, pectin and alginate coatings increased the water vapor resistance of fresh-cut melon, thus preventing dehydration. They also had an inhibitory effect on ethylene production although O₂ and CO₂ diffusion through coated melon tissue was not avoided. Calcium chloride used as a crosslinking agent helped to maintain fruit firmness. Edible coatings themselves did not improve microbiological stability of fresh-cut 'Piel de Sapo' melon packaged under passive modified atmosphere. Pectin or alginate could reduce the wounding stress induced in fresh-cut melon, which triggered an accumulation of total phenolic compounds and other compounds with antioxidant properties. In addition, pectin-based coating seemed to best maintain sensory attributes.