

Title Calcium salts and heat treatment for quality retention of fresh-cut ‘Galia’ melon
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Abstract

‘Galia’ melon is one of the most common cv produced in Spain destined for fresh consumption and/or for the fresh-cut processing industry. Nevertheless, fresh-cut melon is very susceptible to softening during storage, even under chilling and modified atmosphere packaging. This softening process is related to Ca levels in fruit tissue. After preparing trapezoidal shaped sections of ‘Galia’ melons, the pieces were dipped for 1 min a 60 °C in Ca chloride, citrate, lactate, ascorbate, tartrate, silicate, propionate or acetate using a Ca concentration equivalent to 0.4% (0.15 g g^{-1}) pure Ca chloride, combined with $50 \text{ mg L}^{-1} \text{ H}_2\text{O}_2$ for controlling microbial growth. Dipping in sterile distilled water (without Ca salt) at 60 °C for 1 min was used as a control treatment. Firmness, pectin methylesterase and polygalacturonase activity, Ca content, microbial growth, respiration rate, and sensory evaluation, were evaluated throughout 10 days of storage at 5 °C under a passive modified atmosphere reaching 4.5 kPa O_2 and 14.7 kPa CO_2 . At the end of shelf life, Ca ascorbate, chloride and lactate provided melon pieces with a lower respiration rate, increased tissue total Ca content, and maintained a good firmness. In addition, those Ca salts reduced microbial growth. Sensory parameters, such as flavor perception, were kept above the upper limits for marketability. A considerable loss of flavor was found in all treatments except with Ca chlorine, lactate and ascorbate, the only treatments found acceptable from the consumer point of view.