

Title Green tea extract as a natural antioxidant to extend the shelf-life of fresh-cut lettuce
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Abstract

Green tea extract (GT) was evaluated as a preservative treatment for fresh-cut lettuce. Different quality markers, e.g. respiration, browning, ascorbic acid and carotenoid content were evaluated. GT concentration (0.25, 0.5 and 1 g 100 mL⁻¹) and temperature (20 °C and 50 °C) were tested. Optimal GT treatment (0.25 g 100 mL⁻¹ at 20 °C) was compared with chlorine (120 ppm at 20 °C). High GT concentrations (0.5 g 100 mL⁻¹ and 1.0 g 100 mL⁻¹) maintained better prevent ascorbic acid and carotenoid loss than 0.25 g 100 mL⁻¹ GT and chlorine. GT increased browning of samples, probably due to the content of polyphenols of the treatment; the use of heat-shock reduced this negative effect. GT and heat-shock combined also showed negative effects, reducing the antioxidant content (ascorbic acid and carotenoids). No significant differences were observed between chlorine and optimal GT (0.25 g 100 mL⁻¹ at 20 °C) in browning appearance and sensory properties. GT better kept the antioxidant activity of the samples than chlorine.