

Storage quality of fresh-cut apples treated with yerba mate (*Ilex paraguariensis*)

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Abstract

Dipping fresh-cut fruits in antioxidant solutions is a useful method to avoid enzymatic browning. Yerba mate extracts have a high content of antioxidant compounds and could be a natural alternative to control browning and improve the bioactive properties of fresh-cut apples. Therefore, this study aimed to evaluate the performance of an antioxidant solution of yerba mate (1.2%), citric acid (0.9%) and ascorbic acid (1.0%) with water as control, on fresh-cut ‘Granny Smith’ apples during storage at 2 °C (18 days) and 10 °C (15 days) under MAP. Physicochemical characteristics, bioactive properties, sensory attributes, microbial quality as well as the gas composition within the packages were analyzed throughout storage. Samples from both treatments showed a slower quality loss at 2 °C than at 10 °C. The antioxidant solution increased the lag-phase of molds, mesophilic and psychrotrophic microorganisms stored at 2 °C. The phenolic compounds of yerba mate together with ascorbic acid, not only increased the antioxidant capacity of the fresh-cut apples but also reduced the enzymatic browning at both temperatures, increasing the storage time in 2–5 days with an acceptable appearance, when compared to control samples. The antioxidant solution containing yerba mate provided the fresh-cut apples with a higher content of healthy compounds throughout storage at both temperatures.