

Improving postharvest storage of fresh artichoke bottoms by an edible coating of *Cordia myxa* gum

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Abstract

This study aimed to prolong the shelf life of fresh-cut artichoke (*Cynara scolymus* L.) bottoms under refrigerated conditions (2 °C and 95 % RH) for a period of 9 d. Fresh artichoke bottoms were subjected to an edible coating of *Cordia myxa* gum (Cg) supplemented with or without calcium dichloride (CaCl₂) 1 %, or ascorbic acid (AsA) 1 %. The key postharvest quality parameters which were investigated were weight loss, browning, polyphenol oxidase activity (PPO), firmness, vitamin C, and total phenolic compounds (TPC). Moreover, the microbial load of artichoke bottoms during the storage was also measured which comprised of total aerobic mesophilic and psychrotrophic bacteria, fungi, and *E. coli*.

Results indicated that edible coating with Cg, when supplemented with CaCl₂ or AsA, had a significant positive effect on weight loss, vitamin C, and TPC. Browning and PPO activities were significantly inhibited by Cg supplemented with AsA. The mesophilic and psychrotrophic bacterial count was significantly reduced in the presence of CaCl₂ with or without Cg. For moulds and *E. coli* control, again Cg in combination with CaCl₂ seems to be the most effective treatment. Hence, based on these findings, it can be recommended that postharvest coating Cg supplemented with CaCl₂ could be a new application for delaying browning and extending the shelf-life of artichoke bottoms during refrigerated storage. Further research and development are required in commercial settings to test and scale the application of Cg in fresh-cut artichoke bottom industry.