

Title Bio-preservation of fresh-cut tomatoes using natural antimicrobials

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Abstract

Effects of several natural volatile compounds such as methyl jasmonate (MJ), ethanol (ETOH), their combination (MJ-ETOH), tea tree oil (TTO) and garlic oil (GO) were evaluated on fresh-cut tomato storage at 5 °C for 15 days. Microbial growth, in-packaged atmosphere, quality attributes (firmness and color) and bioactive compounds (lycopene content, ascorbic acid and phenolic compounds) of fresh-cut tomatoes were determined. The shelf-life based on microbial growth was longer on fresh-cut tomatoes treated with natural volatile compounds than in control fresh-cut tomatoes. Treatment with ETOH combined with MJ was more effective in suppressing microbial proliferation than the individual treatments with each natural volatile compound. The lowest in-packaged atmosphere modification was detected in fresh-cut tomatoes treated by ETOH. In addition, this treatment better maintained firmness and color attributes than those treated with the other antimicrobial compounds. Related to the bioactive compounds, the use of MJ let keep higher content of lycopene, ascorbic acid and phenolic compounds than the other treatments. Thus, the shelf-life of fresh-cut tomatoes could be prolonged by the use of natural antimicrobials, which do not have significant negative effects on health-related compounds.

<http://www.springerlink.com/content/x05rx03615053u42/fulltext.pdf>