

Essential oils as natural antimicrobial agents in postharvest treatments of fruits and vegetables: a review

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Abstract

Increasing consumer concerns about the dangers associated with synthetically produced additives in food processing have led researchers to focus their investigation on eco-friendly materials and natural antimicrobials from animal sources, microorganisms, and plant-based materials. Although fruits and vegetables are an essential element of most people's diets, the perishable nature of these products results in a very limited shelf-life. Postharvest factors such as transportation, environmental factors, and preservation methods further decrease the product quality and storage limits. Thus, it is crucial to choose the correct substance and packaging method to retain product freshness. Minimally processed fruits and vegetables (MPFV) are among the most developing branches of the food industry. One of the practical techniques is essential oils (Eos) as natural preservatives and antimicrobial agents in MPFV. Eos demonstrated compelling against different pathogens such as *Staphylococcus aureus*, *Escherichia coli*, and *Listeria monocytogenes*. This review provides updated information on the use of Eos like Thyme, cinnamon, sage, peppermint, clove, their synergetic effect and applications in minimally processed fruits and vegetables. These essential oils ought to be investigated in the future to inspect their harmfulness and results through in vitro and clinical examinations.