Title Effect of modified atmosphere packaging on the quality of fresh-cut fruits

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Abstract

Purpose of the review: This review highlights recent findings regarding the use of modified atmosphere packaging (MAP) to improve the quality aspects of fresh-cut fruits. An overview of studies on some of the technologies used for fruit preservation that are complementary to MAP systems is also provided.

Findings: Hypoxic atmospheres containing moderate CO_2 concentrations (< 20 kPa depending on the fruit) enhance quality preservation of most fresh-cut fruits. Recent studies have explored the effect of different modified atmospheres on the visual appearance, texture and flavour of fresh-cut fruits. Other studies have focused on safety issues and conclude that some of the atmospheres currently used present vulnerability issues because their effect on food-borne pathogens is uncertain. The effects of superatmospheric oxygen concentrations are also still unclear for different fresh-cut produce. Edible coating formulations with antimicrobial or antibrowning properties may help to improve safety and extend the shelf-life of fresh-cut fruits.

Directions for future research: Further studies should assess the influence of MAP and other complementary technologies on microorganisms and on the mechanisms that take part in the physiological senescence of the tissues of different fresh-cut fruits.