Title Colour and pigment changes during modified atmosphere packaging storage of fruits and vegetables

Author Tanweer Alam and G.K. Goyal

Citation Stewart Postharvest Review, Volume 2, Number 5, October 2006, pp. 1-9(9)

Keyword Modified atmosphere packaging; active packaging; controlled atmosphere; barrier films; oxygen; carbon dioxide; nitrogen; vacuum packaging

Abstract

Purpose of review: Modified atmosphere packaging (MAP) is a novel method of packaging and preservation that does not involve the addition chemical preservatives. This article presents an overview of changes in colour and pigments that occur during MAP storage of fruits and vegetables.

Findings: The primary objective of packaging is to protect its contents from microbial contamination and various external sources (eg, O_2, water vapour and light) that can cause quality deterioration. Newer packaging technologies such as MAP and active packaging do more than just provide protection from outside influences. MAP is becoming increasingly popular as, by changing the levels of gas that surround the product, this technique enables significant improvements in shelf-life by reducing physiological changes, respiration rates, oxidative deterioration and microbial growth. Efforts have been made in this article to review a broad spectrum of studies with respect to the use of CO_2 flushing in MAP as novel preservation technique.

Direction for future research: MAP of fruits and vegetables has been shown to have the potential benefits of retention of colour and pigments in fruits and vegetables. There is an urgent need to develop simple generic rules/guidelines for optimising MAP conditions to control the colour and pigment changes in fruits and vegetables.