

# PHYTOCHEMISTRY OF FRUIT AND VEGETABLES

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**P6 PHYSICAL, CHEMICAL AND SENSORIAL CHANGES OF MINIMALLY PROCESSED APPLE (cv. JONAGORED) DURING REFRIGERATED STORAGE**

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Food manufacturers use a variety of technologies to produce minimally processed fruits. Shelf-life extension can be achieved by the use of several techniques, such as refrigeration associated to modified atmosphere packaging, aseptic packaging, chemical treatment, etc (Ronk et al, 1989).

Minimal processing includes operations (washing, peeling, coring and cutting) that must be performed to provide a totally edible products that needs no further preparation (Howard and Griffin, 1993). Physiological and biochemical changes in such products may occur at a faster rate due to tissue damage. Wounding stimulates respiration rate, induces the ethylene synthesis, the oxidation of phenolics, the enzymatic activity, and the microbiological development, leading to an accelerated quality loss, especially colour and firmness attributes (Kim et al, 1993). Control of wounding and/or its consequences is the major challenge to the postharvest life of minimally processed fruits. Mass marketing of these products will require a new perspective of shelf-life and quality assurance.

The final aim of this study is to develop treatment procedures that will be effective in extending the shelf-life of minimally processed apple. Quality and shelf-life of cut vary depending on cultivar, processing procedure and storage conditions. Besides relatively little information regarding quality changes of cut apple is available in the literature. The evaluation of physical, chemical and sensorial changes of minimally processed apple (cv. Jonagored) stored at 4C in the dark was performed, during 7 days in order to detect the critical quality parameter.

Quality was assessed in terms of physicochemical properties such as weight loss, firmness, colour, phenolic content, soluble solids content, titratable acidity, pH, sugars, and sensorial acceptability.

Colour was found to be the limitant parameter. Cut apple underwent severe surface colour changes in the first hours after minimal processing. In fact, the browning induced by wounding has been referred as the main limiting factor for several minimally processed fruits, because wounding induces phenylalaninamonialyase, polyphenoloxidase and a number of other enzymes which contribute directly or indirectly to browning (Rolle et al, 1987).

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