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## MODIFIED ATMOSPHERE PACKAGING FOR THE SHELF-LIFE EXTENSION OF CUT-APPLE (C.V.JONAGORED)

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### ABSTRACT

The food industry has been looking for new means of extending the shelf-life of fruits through their preparation and packaging (Myer, 1989). A variety of potential treatments exist to maintain the quality factors of minimally processed fruits, but a treatment to preserve one factor may be detrimental to another (Huxsoll *et al.* 1989). Commonly used technologies to preserve these products are temperature management and controlled atmosphere storage.

The main objective of this research was to use the controlled atmosphere technologie as an alternative or reduction of chemical treatment for extension of the shelf-life of fresh-cut apple.

Quality of untreated cut apple and chemically treated cut apple was evaluated during 10 days at 4°C under normal atmosphere and controlled atmosphere, in terms of physicochemical properties, such as colour; starch content; flavour: pH, soluble solids content, titratable acidity and sugars, texture; microbial contamination, sensorial acceptability. Respiration rate was determined for whole and cut apple at 4° C.

The shelf-life of untreated cut apple was limited after 3 days of storage at 4°C due to surface colour degradation. Controlled atmosphere was not effective in preventing cut apple water loss probably due to a very high gas flow. Atmosphere composition used for controlled atmosphere storage of cut apple (Jonagored) did not present high positive results most likely the carbon dioxide concentration should be increased in order to obtain cut apple with better final quality.

The data obtained will be used in the project of modified atmosphere packages for fresh-cut apple.

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## REFERENCES

Huxsoll, C.C., H.P. Bolin, 1989 Processing and Distribution Alternatives for Minimally Processed Fruits and Vegetables, *Food Technology* (2) 124 - 128.

Myer, R.A., 1989 Packaging Considerations for Minimally Processed Fruits and Vegetables, *Food Technology* (2) 124 - 128.