

# Effect of Modified Atmosphere Packaging on Physico-Chemical Characteristics of Orange Segments

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## ABSTRACT

Fresh and sorted orange fruits were sanitized, dried, peeled and segmented. The segments (150 g) were packed under 5% O<sub>2</sub> + 10% CO<sub>2</sub> + 85% N<sub>2</sub> gas composition in different packaging materials like Low Density Poly Ethylene (LDPE, 60 µm), Polypropylene (PP, 32 µm) and Poly Vinyl Chloride (PVC, 20 µm) and stored at 5°C. The physico-chemical characteristics were monitored at an interval of 4 days for a storage period of 20 days. The results showed that oxygen concentration gradually decreased but the carbon dioxide concentration gradually increased and reached a steady state concentration in all treatments during the storage. The TSS, titratable acidity, ascorbic acid and color (L\* and a\*/b\* value) of orange segments packed in LDPE covers decreased during storage period of 20 days. Less change was observed in physiological loss in weight (PLW) of samples stored in LDPE covers. The increase in firmness and pH was less in samples stored in LDPE covers during storage period. Study revealed that the quality orange segments was good when packed in LDPE covers and stored at 5°C with a shelf life of 20 days where as the shelf life of control samples was only 4 days.

**Key words :** Modified atmosphere packaging, Orange segments, Packaging materials, Physico-chemical characteristics, Storage.