



# EFFECTS OF ALOE VERA COATINGS ON QUALITY CHARACTERISTICS OF ORANGES STORED UNDER COLD STORAGE

By

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## INTRODUCTION

Sweet Orange (*Citrus sinensis* L. Osbeck) is the most commonly grown fruit tree in the world (Morton, 1987)

Citrus fruits are produced all around the world. Its production in selected major producing countries in 2005/2006 was 72.8 million metric tons. Citrus fruit is said to be the first crop in the international trade in terms of values (CIAC, 2002).

Edible coatings are thin layers of edible material applied to the product surface in addition to or as a replacement for natural protective waxy coatings.

They are applied directly on the food surface by dipping, spraying or brushing to create a modified atmosphere.

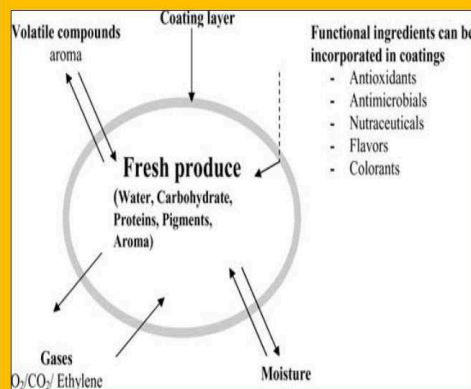
It has been reported that waxing and coating improve shelf life, slows down ripening retards water loss, reduces decay and enhances visual quality (Amarante *et al.* 2001; Jeong *et al.*, 2003; and Mota

## OBJECTIVE

To investigate the effects of Aleovera coatings on quality characteristics of oranges stored under cold condition.

## MATERIAL AND METHODS

- Three hundred and twenty (320) oranges of Valencia variety were stored under cold conditions in the refrigerator for 8 weeks.
- Measured parameters during storage were:
- Total soluble solids, titratable acidity, weight loss, firmness, pH, vitamin C and sugar/ acid ratio.
- Matured leaves of Aloe vera plant was harvested and washed with mild 25% chlorine solution.



## DIPPING OF ORANGES IN ALOE VERA COATINGS

## RESULTS AND DISCUSSIONS

- A decreasing trend was observed in firmness in both treatments during the course of storage with uncoated exhibiting higher loss of firmness
- The final value for firmness for coated oranges was found to be 1781.25 ± 118.30N, while that of uncoated oranges was 1531.25 ± 185.53N.
- The pH was gradually increasing during the course of storage in the two treatments, whereas vitamin C was found to be decreasing in storage.
- Higher mean value of TSS was observed for coated oranges as 9.79 ± 0.40%, while that of uncoated oranges was 9.34 ± 0.02%.
- The mean value of weight loss for coated oranges was 29.20 ± 0.55, while that of uncoated oranges was 53.30 ± 1.17%.
- The final value of TTA of uncoated oranges at the end of storage was found to be 1.14 ± 0.06%, while that of coated oranges was 1.27 ± 0.03%.

## CONCLUSION

Aloe vera coatings delayed ripening of oranges for Eight (8) weeks under cold storage, thereby extending its postharvest life and ensuring food security in Nigeria.