

## EFFECT OF PLANT NATURAL EXTRACT COATINGS ON POST HARVEST QUALITY AND SHELF LIFE OF TOMATO

Simple Kumar\*<sup>1</sup>, Tripti Bhatnagar<sup>2</sup> and Vigya Mishra<sup>3</sup>

<sup>1</sup>Noida International University, Greater Noida, U.P and <sup>2</sup>Codon Biotech Pvt. Ltd, Noida, U.P <sup>3</sup>Amity International Centre For Post Harvest Technology and Cold Chain Management, Amity University, Noida  
Email: simple.bt28@gmail.com

Received-17.09.2016, Revised-27.09.2016

**Abstract:** The aim of this research is to study the application of plant natural extracts Aloe vera and neem for extending the storage period of tomato. The effect of different formulations of Aloe vera and neem based herbal extract coatings on tomatoes stored at refrigerated condition (4°C) was investigated. PLW, Firmness, total soluble solids, sensory characteristics were analyzed at regular intervals during the storage period. Tomatoes in control showed a rapid deterioration with an estimated shelf life period of 18 days. On the contrary, the coatings on tomatoes extended the shelf life up to 36 days. From the results, it was concluded that the use of Aloe vera and neem based plant natural extract coating leads to increased tomato shelf-life.

**Keywords:** *Aloe vera*, Neem extract, Coatings, Shelflife, Tomato

### REFERENCES

- Abirami, L.S.S.** (2009). Efficacy of chitosan and natural plant extracts on the growth of selected fungal pathogens and control of anthracnose disease of papaya. *M.Sc thesis, Sri Sathya Sai University, Prashanthi Nilayam.*
- Adetunji, C.O, Fawole, O.B, Arowora, K.A, Nwaubani, S., Ajayi, E.S, Oloke, J. K, Majolagbe, O.M, Ogundele, B. A, Aina, J.A., Adetunji, J.B.** (2012). "Effects of Edible Coatings from *Aloe Vera* Gel on Quality and Postharvest Physiology of *Ananas Comosus* (L). Fruit During Ambient Storage", *Global Journal of Science Frontier Research*, **12** (5):39-43.
- Arowora, K.A., Williams, J.O., Adetunji, C.O., Fawole, O.B., Afolayan, S.S., Olaleye, O.O., Adetunji, J.B. and Ogundele, B.A** (2013). Effects of Aloe vera Coatings on Quality Characteristics of Oranges Stored Under Cold Storage *Greener Journal of Agricultural Sciences* ;**Vol. 3** (1) pp. 039-047.
- Asghari M, Ahadi L and Riaie S** (2013): Effect of salicylic acid and edible coating based Aloe vera gel treatment on storage life and postharvest quality of grape (*Vitis vinifera* L. cv. Gize Uzum) *Intl J Agri Crop Sci.* **Vol. 5** (23): 2890- 2898.
- Athmaselvi, K.A, P. Sumitha, and B. Revathy** (2013): Development of Aloe vera based edible coating for tomato; *Int. Agrophys.* **27**, 369-375
- Batu, A.** (2004). Determination of acceptable firmness and colour values. *J. Eng.*, **61**, 471-475 of tomatoes.
- Castillo, S. and Serrano, M.** (2005). Novel edible coating based on Aloe vera gel to maintain table grape quality and safety. *J. Agric. Food Chem.*, **53**, 7807-7813.
- Liu, L.H; Zabarar, D; Bennett, L.E; Agues, P. and Woonton, B.W.** (2009). Effects of UV-C, red light and sun light on the carotenoid content and physical qualities of tomatoes during post harvest storage. *Food Chem.*, **115**, 495-500.
- Marpudi, S.L; Abirami, L.S.S; Pushkala, R. and Srividya, N.** (2011). Enhancement of storage life and quality maintenance of papaya fruits using Aloe vera based antimicrobial coating, *Indian Journal of Biotechnology* **Vol. 10**:83-89.
- Martinez-Romero, et al.** (2006). Post harvest cherry quality and safety maintenance by Aloe vera treatment. A new edible coating, *Post harvest Biol Technol*, **39**:93-100
- Mohamadreza Asghari, HojjatKhalili, Yusof Rasm, Mohammad, Arash** (2013). Influence of Postharvest Nitric oxide and Aloe vera Gel Application on Sweet Cheery Quality Indices and Storage Life; *International Journal of Agronomy and Plant Production*. **Vol. 4** (9): 2393-2398.
- Sonti, S.** (2003). Consumer perception and application of edible coatings on fresh-cut fruits and vegetables. *MSc. Thesis, Osmania University, Hyderabad, India.*
- Togrul, H. and Arslan, N.** (2004). Carboxymethyl cellulose from sugar beet pulp cellulose as a hydrophilic polymer in coating of mandarin. *J. Food Eng.*, **62**, 271-279.

\*Corresponding Author