

# Chitosan-enriched salicylic acid coatings preserves antioxidant properties and alleviates internal browning of pear fruit under cold storage and supermarket conditions

Aeshna Sinha, P. P. SGill, S. K. Jawandha, Preetinder Kaur and S. K. Grewal

Postharvest Biology and Technology, Volume 182, December 2021, 111721

---

## Abstract

Pear being climacteric in nature undergoes alterations in antioxidant properties during storage due to intense metabolic activities. In an attempt to maintain antioxidants level, pears were treated either with chitosan (CH) coatings alone (CH 1.0 and 2.0 %) or were incorporated with 2.0 mM salicylic acid (SA) and stored for a period of 67 d under cold temperature (0 – 1 °C and 90–95 % RH) and 20 d under supermarket conditions (20–22 °C and 80–85 % RH). Evaluation study for different physico-chemical attributes of pears suggested that the SA loaded CH coatings restricted the climacteric peak and delayed the polyphenol oxidase (PPO) enzyme activity. As compared to control, these composite coatings promoted the preservation of total phenolics content (TPC), ascorbic acid (AsA) and retained higher total antioxidant activities (TAA) in fruit till 67 d of cold storage period and 20 d under supermarket conditions. Furthermore, CH 2.0 % + SA 2.0 mM coatings strictly impeded the development of internal browning (IB) symptoms of pears throughout storage period. Combined coatings of CH plus SA contributed higher efficacy in terms of maintaining the functional properties of fruit as compared to individual coatings of CH or SA dip.