

BENHABILES, M.S., TAZDAIT, D., ABDI, N., LOUNICI, H., DROUICHE, N., GOOSEN, M.F.A., MAMERI, N.

Assessment of coating tomato fruit with shrimp shell chitosan and N,O-carboxymethyl chitosan on postharvest preservation

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ABSTRACT:

The effect of coating tomato fruit (*Lycopersicon esculentum*) with shrimp shell chitosan, a deacetylated form of chitin, and a chitosan derivative, i.e. N,O-carboxymethyl chitosan (NOCC) on postharvest preservation was studied. The effects of various chitosan and NOCC concentrations on fruit ripening behavior, as well as fruit physical and chemical characteristics were evaluated during storage at room temperature (25-30 °C). Coating the fruit with 2 % (w/v) chitosan or NOCC solutions was found to be more effective in extended its storage life than coating with 0.5 % (w/v) solutions. Covered tomatoes were firmer, higher in titratable acidity, and exhibited less red pigmentation than the control uncoated fruits at the end of storage. These results suggest the suitability of chitosan and its derivative NOCC as an alternative means of preserving fresh fruits.