

Title The influence of chitosan glazing on the quality of skinless pink salmon (*Oncorhynchus gorbuscha*) fillets during frozen storage

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Abstract

Chitosan (CH1, 1% w/w solution) was used for producing chitosan film and used for glazing skinless pink salmon fillets. The rheological properties of chitosan solution, and mechanical properties and gas (oxygen, carbon dioxide and nitrogen) permeability of the chitosan film were evaluated. The effect of chitosan (CH1, 1% w/w solution) glazing on the quality of skinless pink salmon fillets after eight months frozen storage was determined. The rheological study showed that CH1 exhibited pseudoplastic and viscoelastic characteristics. The glass transition temperature (T_g) for the chitosan film was observed at 80.23 °C. The oxygen, carbon dioxide, nitrogen and water vapor permeabilities of the chitosan film were 5.34×10^{-2} (cm³/m day atm), 0.17 (cm³/m day atm), 0.03 (cm³/m day atm), and 2.92×10^{-10} (g water m/m² Pa s), respectively. Fillets glazed with CH1 solution exhibited significantly ($p < 0.05$) higher yield and thaw yield than the lactic acid-glazed (LA) and distilled water-glazed (DW) fillets, although these fillets all had similar moisture content after thawing. Chitosan, DW, and LA glazing delayed lipid oxidation in skinless pink salmon fillets after eight months frozen storage.