

Title Cinnamon and nisin in alginate–calcium coating maintain quality of fresh northern snakehead fish fillets

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Abstract

Cinnamon (*Cinnamomum zeylanicum*) and nisin in alginate–calcium coating were used to maintain quality of northern snakehead fish fillets at refrigeration temperature (4 ± 1 °C). Northern snakehead fish fillets were left untreated (CK), or were treated with alginate–calcium coating (Y0), alginate–calcium coating incorporating $10 \mu\text{L mL}^{-1}$ cinnamon (Y1), alginate–calcium coating incorporating 2000 IU mL^{-1} nisin and $150 \mu\text{g mL}^{-1}$ ethylene diamine tetraacetic acid (EDTA) (Y2), or alginate–calcium coating incorporating $10 \mu\text{L mL}^{-1}$ cinnamon and 2000 IU mL^{-1} nisin and $150 \mu\text{g mL}^{-1}$ EDTA (Y3). Y1 and Y3 had better effects on inhibiting bacterial growth and maintaining values of pH, total volatile base nitrogen (TVB-N) and thiobarbituric acid (TBA) of northern snakehead fish than CK, Y0 and Y2. Lightness (L^*) values of fish fillets of all treatments were higher than CK. Cinnamon in alginate–calcium coating treatments could efficiently maintain quality of northern snakehead fish fillets during storage, but colors of fish fillets of Y1 and Y3 were evidently changed due to the color of cinnamon.