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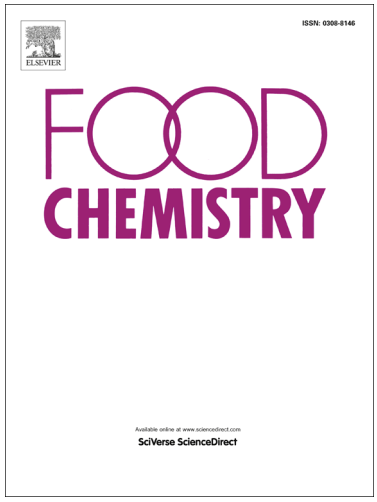

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Joaquín Gómez-Estaca, Ailén Alemán, M. Elvira López-Caballero, Gyselle Chrystina Baccan, Pilar Montero, M. Carmen Gómez-Guillén

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Bioaccessibility and antimicrobial properties of a shrimp demineralization extract blended with chitosan as wrapping material in ready-to-eat raw salmon

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ABSTRACT

A shrimp extract (SME) obtained from the mild-acid demineralization treatment of shrimp shells to produce chitosan was collected. It was mainly composed of fat (≈73%), protein (≈19%), and ash (≈9%) and contained considerable amounts of calcium (≈1.9 g/100 g), astaxanthin (≈30 mg/100 g) and unsaturated fatty acids (≈27% MUFA, ≈39% PUFA). The SME was used in combination with chitosan for wrapping raw salmon to produce a ready-to-eat product enriched in calcium. No significant changes in hardness were found, as compared to the unwrapped salmon. Estimated intakes of bioaccessible calcium increased significantly by 3.6-fold, whereas intake of bioaccessible fat was reduced by 15%. SFA were the main fatty acid group reduced (≈80%), whereas MUFA and PUFA were only reduced by ≈20% each. Total viable counts, pseudomonads, enterobacteria, and specific fish spoilers were reduced by 2–4 log CFU/g in wrapped sample during the chilled storage period (19 days).

Keywords

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