

Title Shelf life modelling of frozen shrimp at variable temperature conditions
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Abstract

The objective of this study was to investigate the effect of variable storage conditions on shelf life and quality characteristics of frozen shrimp. Colour change measured both instrumentally and visually was modelled by apparent zero order equations and showed high dependence on temperature. TVB-N and TMA values increased with storage time and were modelled with apparent first order equations. Taste and overall acceptability scores of frozen shrimp had high correlation with TVB-N and TMA values. The temperature dependence of quality deterioration was adequately modelled by the Arrhenius equation and activation energy ranged from 118 to 156 kJ/mol for the different indices measured. The developed models were validated in fluctuating time–temperature conditions in order to establish their applicability in the real cold chain.