Title Changes in microbial flora of Pacific oysters (*Crassostrea gigas*) during refrigerated storage and its shelf-life extension by chitosan

Author Rong Cao, Chang-hu Xue and Qi Liu

Citation International Journal of Food Microbiology, Volume 131, Issues 2-3, 31 May 2009, Pages 272-276

Keywords Pacific oyster; Microbial flora; Chitosan; Shelf-life

Abstract

Changes in microbial flora of Pacific oysters (*Crassostrea gigas*) during storage at 5 ± 1 °C were analyzed and the antimicrobial activity of chitosan was studied to identify its potential in shelf-life extension. The dominant microorganisms were found to be *Pseudomonas* (22%) and *Vibrionaceae* (20%) in raw oysters. During storage, proportion of *Pseudomonas* increased significantly and reached 73% at the end of storage, while *Vibrionaceae* preserved a level of approximate 20%. Wide-spectrum antibacterial property of chitosan against the bacteria isolated from oysters was discovered, and chitosan concentration of 5.0 g/L was eventually determined for application in oyster preservation. Based on microbiological analysis, biochemical indices determination and sensory evaluation, shelf-life of oysters stored at 5 ± 1 °C was determined. Data showed that chitosan treatment extended the shelf-life of oysters from 8–9 days to 14–15 days.