

Title Microbial shelf-life extension of chilled Coho salmon (*Oncorhynchus kisutch*) and abalone (*Haliotis rufescens*) by high hydrostatic pressure treatment

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Citation Food Control, Volume 21, Issue 11, November 2010, Pages 1530-1535

Keywords High pressure; Seafood; Shelf-life

Abstract

This study was carried out to evaluate the effect of high hydrostatic pressure (HHP) treatment on microbial behavior and the shelf-life extension of Coho salmon and abalone during chilled storage at 4 °C. For salmon, HHP treatments were applied at 135, 170, and 200 MPa for 30 s, while abalone treatment consisted of 500 MPa for 8 min and 550 MPa for 3 or 5 min. Spoilage bacteria (*Pseudomonas* spp. and hydrogen sulfide-producing bacteria, mainly *Shewanella putrefaciens*), as well as aerobic mesophilic and psychrophilic microorganisms, were enumerated immediately after treatment and throughout subsequent storage at 4 °C. Results have shown that HHP treatment reduced the initial microbial counts of salmon from 3.16 to 2.2 log units, moreover abalone was reduced from 1.3 log to undetectable levels (<10 CFU g⁻¹). HHP-treatment used for salmon were not sufficient to extend their shelf-life. However, the shelf-life of abalone was extended from 30 (control samples) to >65 days irrespective of HHP treatment applied.