

Determination of the toxic variability of lipophilic biotoxins in marine bivalve and gastropod tissues treated with an industrial canning process

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Resumen

Contamination of shellfish with lipophilic marine biotoxins (LMB), pectenotoxins (PTXs), yessotoxins (YTXs) and okadaic acid (OA) toxin groups in southern Chile is a constant challenge for the development of miticulture considering the high incidence of toxic episodes that tend to occur. This research is focused on using methodologies for assessing the decrease in toxins of natural resources in Chile with high value, without altering the organoleptic properties of the shellfish. The species were processed through steaming (1min at 121 degrees C) and subsequent canning (5min at 121 degrees C). Changes in the profiles of toxins and total toxicity levels of LMB in endemic bivalves and gastropods were determined using liquid chromatography-tandem mass spectrometry (LC-MS/MS). The total reduction of toxicity (approximate to 15%) was not related to the destruction of the toxin, but rather to the loss of LMB on removing the shells and packing media of canned products (**p<0.001). Industrial processing of shellfish reduces LMB contents by up to 15% of the total initial contents, concomitant only with the interconversion of PTX-group toxins into PTX-2sa. In soft bottom-dwelling species with toxicities beyond the standard for safe human consumption (160g OA-eqkg(-1)), toxicity can be reduced to safe levels through industrial preparation procedures.

Palabras clave

Palabras clave de autor: [Lipophilic marine biotoxins](#); [industrial process](#); [okadaic acid group](#); [pectenotoxin group](#); [yessotoxin group](#); [shellfish](#); [LC-MS/MS](#)

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