

Effects of washing pre-treatment on mercury concentration in fish tissue.

ABSTRACT

The objective of this study was to examine the effect of washing pre-treatment on mercury concentration in fish fillet. Response surface methodology was used to investigate the influence of three variables, pH (1-6.5), NaCl (0-1% w/v) and exposure time (5-30 min) by using a three-factor central composite design. The aim was to obtain the best possible combination of these variables in order to reduce mercury in fish fillet. The experimental data were adequately fitted into a second-order polynomial model with multiple regression coefficients (R^2) of 0.961. The results indicated that the reduction of mercury in fish flesh significantly depends on the pH of the solution used. The overall optimal condition resulting in the maximum mercury reduction in fish fillet was obtained at a combined level pH of 2.79, NaCl of 0.5% and exposure time of 13.5 min. The optimized protocol produced a solution that can reduce mercury from raw fish fillet up to 81%.

Keyword: Atomic absorption spectrometry (AAS); Heavy metals–mercury; Fish.