Investigation on different cooking methods on remainder content of arsenic and mercury concentrations in (*Fenneropenaeus indicus)* shrimp

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Abstract

The present study was done for evaluation of the effects of different cooking methods (boiling, steaming and frying) on arsenic and mercury content of Indian shrimp (*Fenneropenaeus indicus*). Wet digestion method and atomic absorption spectrophotometer was used in order to extract and determine arsenic and mercury residue in experimental samples. The mean recovery rate was 90.6 and 102% for mercury and arsenic, respectively. Mean concentrations of arsenic and mercury in raw shrimp samples was 237.67±27.01 and 115.67±16.86 µg/kg, respectively. The results of this study revealed that arsenic concentration in fried shrimp samples with average of 459.42±63.66 µg/kg was increased which was statistically significant ($P<0.05$). On the other hand, mercury concentration in steamed, poached and fried samples was decreased comparing to the control samples. The results revealed that frying which is one of the most common methods of cooking aquatics in Iran, is not desirable method for consumer health. The result of this study also showed the importance of periodically monitoring the residue levels of mercury and arsenic in seafood.

Keywords: Shrimp, Cooking methods, Heavy metals, Arsenic, Mercury.