INORGANIC CONTAMINANTS IN OCTOPUS AND MULLET SASHIMI AND ESTIMATED WEEKLY INTAKE

Marcelo A. Morgano, Luana C. Rabonato, Raquel F. Milani, Luciana Miyagusku. Food Technology Institute – ITAL, Av Brasil 2880, CP 139, 13070-178 Campinas, São Paulo, Brazil

The evaluation of risks and benefits of the consumption of fish has been particularly controversial. These foodstuffs can be an important source of high-quality proteins, minerals and essential fatty acids, but can contain toxic substances as mercury, cadmium and lead. As a safeguard for human health, regulations establishing maximum permissible levels of inorganic contaminants have been set. The concentrations of As, Cd, Cr, Pb and total Hg were measured in 34 octopus and mullet sashimi samples purchased at restaurants in Campinas, SP, during the year of 2010. Samples were analyzed by inductively coupled plasma optical emission spectrometry after acid digestion carried out in microwave-assisted system using nitric acid and hydrogen peroxide as oxidant. The concentrations ranges (mg/kg of fresh mass) for the elements determined in octopus and mullet sashimi samples were, respectively: As (2,17-14,66; <0,03-1,44); Cd (0,018-0,233; <0,002-0,031); Cr (0,007-0,228; 0,018-0,075); Pb (<0,004-0,250; <0,004-0,405); total Hg (0,019-0,235; 0,002-0,494). In general, octopus sashimi samples presented higher levels of metals and the levels found were above the maximum levels proposed by Brazilian and European legislation. The estimated weekly intake (µg/kg body weight) of As, Cd, Pb, Hg and Cr to derived from the consumption of octopus and mullet sashimi were, respectively: As (35,4 e 3,9); Cd (0,4 e 0,06); Pb (0,4 e 1,0); Hg (0,5 e 0,2) and Cr (0,5 e 0,2). Our findings demonstrated that octopus sashimi can contribute significantly to the ingestion of As and Cd.