



## **TITLE: Assessment of the potential health risks associated with six trace elements in halieutic products from the Mauritanian Atlantic coast.**

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### **ABSTRACT**

Halieutic products are consumed widely and literature showed that they may be a major source of human exposure to various environmental contaminants such as trace elements. Mauritanian Atlantic coast is an importing fishing area, our study focused on the determination of six trace elements (Cd; Hg; Pb; Cu; Fe and Zn) in the muscle of most consumed and worldwide-commercialized halieutic products (*Sardinella aurita*; *Sardinella maderensis*; *Trachurus trachurus*; *Dentex angolensis*; *Mugil cephalus* and *Octopus vulgaris*). Samples were collected from two sites with important anthropogenic activities (Nouakchott and Nouadhibou coast). The presence of cadmium, lead, copper, iron and zinc was proceeded using ICP-OES technique, while the determination of mercury was carried out with a Direct Mercury Analyzer. Results showed that lead was not detected in samples from Nouakchott coast; however, it was detected in two from five samples of *O. vulgaris* species collected from the Nouadhibou coast. Cd; Hg and Pb concentrations in all species were under the maximum residue level fixed by the European Commission regulation.

The highest mean content of cadmium was detected in *O. vulgaris* and for mercury in *S. maderensis*. The highest mean value of copper was obtained with *M. cephalus* whereas the highest of iron and zinc were found with *S. aurita* and *T. trachurus* respectively. To evaluate the potential health risks linked to the consumption of the studied species; the Target Hazard Quotient (THQ) and the Hazard Index (HI) were used. Results showed that *S. aurita*; *S. maderensis*; *T. trachurus* and *D. angolensis* have THQ and HI values that are under the tolerated limit. Results of the current study indicate that the examined halieutic product have accepted concentrations of non-essential trace elements. As regards the estimation of potential health risks, calculation showed no risk related to the consumption of the studied species for children and adults.



## BIOGRAPHY

Hana Youssef Learoussy has completed her PhD in Quality Control and Food Safety at the age of 30 in 2022 from Sid Mohamed Ben Abdellah University, Morocco. She is a Teacher-Researcher at the Faculty of Sciences and Technology at the Nouakchott University. She has published 06 articles during and after PhD studies. She has over nine years' experiences in Quality Assurance and the implementation of the quality management system in different organizations.

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