Risk ranking of emerging contaminants in fish and seafood

Vandermeersch Griet[1], German Cano-Sancho[2], Karen Bekaert[1], Antonio Marques[3], and Johan Robbens[1]

[1] Chemical Monitoring and Product Technology, Institute for Agricultural and Fisheries Research (ILVO), Ankerstraat 1, B-8400 Oostende, Belgium
E-mail: griet.vandermeersch@ilvo.vlaanderen.be

[2] Laboratory of Toxicology and Environmental Health, School of Medicine, Rovirai Virgili University (URV), Reus, Spain

[3] Portuguese Institute of Sea and Athmosphere (IPMA), Lisboa, Portugal

The growing awareness of food safety and food quality goes hand in hand with an increased demand for information on the hazard/risk of emerging contaminants (endocrine disruptors, brominated flame retardants, pharmaceuticals and personal care products, toxic elements,...) from consumers, food industry and authorities. Therefore, there is a need to assess food safety issues related to harmful contaminants in seafood and to set prioritization frameworks for food safety screening in order to obtain cost-effective use of resources. In this study, the hazard of emerging compounds in seafood was prioritized according to their PBT properties (persistence, bioaccumulation, toxicity), as well as to their concentration levels in seafood. A hazard index was estimated for each compound by means of an artificial neural network approach known as Self-Organizing-Maps. The outcome of this framework identified the priority contaminants and should help policy-makers and scientific panels to design screening programs and to take the appropriate measures.