

5th International Conference and Exhibition on Analytical & Bioanalytical Techniques

August 18-20, 2014 DoubleTree by Hilton Beijing, China

Arsenic compounds in foodstuffs - recent developments in speciation analysis for improved risk assessment

Jens J Sloth

Technical University of Denmark, Denmark

The European legislation on trace elements concerning food and feed safety is based on total element concentrations expressed as maximum levels. However, information on the total content of an element does not always provide adequate information for evaluation of e.g., bioavailability and toxicity. These parameters may vary quite significantly depending on how the element is bound, i.e. its speciation, defined as the distribution of an element amongst defined chemical species in a system. The most important practical application of elemental speciation is in the area of toxicology and with the help of more detailed toxicological knowledge on the individual chemical elemental species should lead to more specific legislation. The present lecture will use arsenic as an illustrative example, where inorganic arsenic is considered much more toxic than organic bound and analytical methods for selective determination of inorganic arsenic are required in order to perform a correct risk assessment of dietary exposure. The importance of this topic has recently been emphasized in international risk evaluation, which has demonstrated that the dietary intake in certain population groups may reach levels of concern. The lecture will provide the current status on the developments in arsenic speciation analysis with focus on methods for specific determination of inorganic arsenic in foodstuffs and feedingstuffs. The lecture will furthermore address the expected future developments within this emerging scientific area.

Biography

Jens J Sloth is a senior scientist in analytical chemistry at the National Food Institute of the Technical University in Denmark (DTU Food). He has more than 15 years' experience in analytical chemistry with emphasis on trace element analysis and speciation analysis using coupled techniques like HPLC/GC-ICPMS. His research focuses primarily on the development and application of analytical methods for studies of trace elements and their compounds in food and other biological materials.

jjsl@food.dtu.dk