TOPIC: Quality Assurance in Analysis of Food Contaminants

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BIOGRAPHY

Thomas Wenzl studied chemistry at Graz University of Technology. He worked 10 years as an assistant professor at the Institute for Analytical Chemistry and Radiochemistry at the Graz University of Technology. Since 2003, he has been working in the Food Safety and Quality Unit at the JRC's Institute for Reference Materials and Measurements in Geel, Belgium. The focus of his work was set on heat induced food contaminants (acrylamide, furan). Recently he was appointed operating manager of the Community Reference Laboratory for Polycyclic Aromatic Hydrocarbons.

ABSTRACT

Quality Control in Analysis of Food Contaminants

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Quality control makes part of quality assurance which covers both managerial and technical aspects. Fundamental guidance on quality assurance in among others analytical chemistry laboratories is provided by EN ISO/IEC 17025:2005 [1]. In EU official food control laboratories have to be accredited according to this standard and are regularly audited by the competent accreditation body [2]. Hence the quality of routine analyses should be under control.

However different contaminants were detected in the last few years in different types of food which caused urgent demands of analysis data. Accreditation of the respective analysis methods prior to the data generation, which would require an assessment of the data quality by an external body, was mostly not feasible with respect to timing. Hence quality assurance elements in particular quality control measures become elemental.

Quality control consists of "a set of procedures undertaken for the continuous monitoring of operation and the results of measurements in order to decide whether results are reliable enough to be released" [3]. It comprises a set of operations that are linked to each other like a chain. And as usual, the strength of the chain is only as strong as its weakest link.

This presentation focuses on a few links of the chain only and aims to demonstrate on practical examples the importance of a well established quality control system. In particular it will highlight the influence of calibration on the final result. Reasons for potential bias will be pinpointed and measures to control the bias of instrument calibration will be discussed.

[1] International Organization for Standardization (2005), General requirements for the competence of testing and calibration laboratories, EN ISO/IEC 17025:2005.

[2] Regulation (EC) No 882/2004 of the European Parliament and of the Council (2004), on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules, Official Journal of the European Union L 165 of 30 April 2004.

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