EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Institute for Reference Materials and Measurements
European Union Reference Laboratory for Polycyclic Aromatic Hydrocarbons

Geel, 28.08.2014

Work program of the European Union Reference Laboratory (EURL) for Polycyclic Aromatic Hydrocarbons (PAHs) 2015

1. Organisation of a proficiency test (PT) on PAHs in smoked fish. A PT on the determination of PAHs in smoked fish will be organised in 2015. This PT aims to support the implementation on the upcoming regulation on derogation from new maximum levels for PAHs for traditionally smoked products. The PT will be conducted for the network of NRLs. EU official food control laboratories will get the possibility to participate in the study on a participation fee basis. Special focus will be given to the analysis of the four marker PAHs (benz[*a*]anthracene, benzo[*a*]pyrene, benzo[*b*]fluoranthene, and chrysene) that are defined by EU legislation. A report on the PT will be made available after results have been collected from the NRLs.
   This activity comprises preparation of the test material, packaging, homogeneity, and stability testing of the test material. The homogeneity of the test material will be demonstrated by means of ANOVA of at least 10 randomly selected containers, with a method for which in-house method performance has been established. The stability of the material during the execution of the exercise will be studied as well.

2. Organisation of a PT on PAHs in chocolate and cocoa derived products. This PT will be conducted for the network of NRLs, on request of the EU Member States, in order to evaluate the influence of the fat determination method on the analysis results. The PT will also serve for evaluating the performance of the NRLs over time. EU official food control laboratories will get the possibility to participate in the study on a participation fee basis. Special focus will be given to the analysis of the four marker PAHs that are defined by legislation. The PT will comprise two test materials, one at high fat content level, the other at low fat content level, in order to address the challenges linked to the expression of results on fat basis. A report on the PT will be made available after results have been collected from the NRLs.
   This activity comprises preparation of the test material, packaging, homogeneity, and stability testing of the test material. The homogeneity of the test material will be demonstrated by means of ANOVA of at least 10 randomly selected containers, with a method for which in-house method performance has been established. The stability of the material during the execution of the exercise will be studied as well.

3. Organisation of a workshop with the network of NRLs. The workshop will serve to strengthen the network structure and to identify the needs of the NRLs. The outcome of the PTs and other specific topics concerning the chemical analysis of PAHs will be addressed during the workshop. The workshop will be held at the Institute for

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Reference Materials and Measurements (IRMM). A report on the workshop will be made available.

4. Providing training to NRLs: This activity will comprise a hands-on training relevant for the determination of PAHs in food. The topic of the hands-on training will be discussed with the NRLs during the 2014 workshop (13-14 October 2014). The training will be organised in the EURL premises for staff of the NRLs. The maximum number of invited participants is six. Priority will be given to staff from underperforming NRLs.
   On request, EURL staff will visit NRLs and provide training on analytical methodology for the determination of PAHs in food on the spot.

5. Preparation of test materials for the 2016 PT, upon renewal of the EURL mandate. It is foreseen to focus on the determination of EU priority PAHs in food matrices for which maximum limits are set in Commission Regulation (EU) No 835/2011. The nature of the PT test material will be discussed and agreed with the NRLs during the 2014 workshop (13-14 October 2014) and DG SANCO. However, priority will be given to food matrices recently included in legislation, such as coconut oil.
   For that purpose suitable test materials have to be identified and a pilot study on the preparation of test samples has to be conducted. Since this is expected to be a challenging task, the activity will start already in 2015, after approval by DG SANCO of the work program 2016.

6. Identification of screening methods for the detection of EU marker PAHs in food. This is an important activity identified in the work progamme of the Commission to be performed for the year 2015 on financial contribution to the EURLs (Commission Implementing Decision 2014/C 244/06 of 24 July 2014). As a first step, the EURL PAH will screen available information (scientific literature, web search, company contacts) for candidate methods. The collected information will be compiled in a report, and if already available, presented and discussed at the EURL workshop with the network of NRLs in view of identifying further activities on this topic for the future for the EURL and network of NRLs.
   A meeting will be organised with external experts in order to discuss the potential of candidate screening methods.

7. Providing support to DG SANCO in technical matters concerning analytical methodology for PAH analysis, if requested.

8. Providing support to standardisation bodies such as CEN for the standardisation of analytical methods for the determination of PAHs in food. This will require a regular participation in the meetings of CEN TC 275/WG13 and CEN TC 327/WG1.

9. Representing the EURL and dissemination of information concerning the EURL activities at international conferences such as the AOAC annual symposium.

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10. Organisation of follow-up measures for laboratories that underperformed in proficiency tests. Follow-up measures are in this respect
    - the initiation of a structured root-cause analysis by the NRL,
    - on request, provision of test material for the execution of experiments to revalidate/improve the analysis method applied by the NRL,
    - the evaluation of the effectiveness of corrective action taken by the NRL

11. Extending the knowledge sharing platform: The EURL PAH will extend the electronic platform (CIRCABC) for communication with the NRLs. The aim is to install an open forum, which can be used to disseminate information, but also for discussions both between EURL and NRLs, and between NRLs. Training on the use of the platform will be provided to the NRLs in the frame of the annual workshop.

For information Development of certified reference materials for the determination of PAHs in food: The experience from the organisation of fifteen proficiency tests on the determination of PAHs in food has shown that biased results reported by the participants are frequently connected with erroneous instrument calibration. The reliability of some commercial standard solutions was found questionable, which caused within the analytical community a loss of trust in the gained results. Hence, the IRMM aims to develop a certified reference material (standard solution) of the four regulated marker PAHs, in order to provide official control with a common reference and to restore trust in the analytical data. The development of the certified reference material will take longer than one year. In 2015 neat substances will be acquired and characterised for identity and purity. In 2016 a mixed solution of the four PAHs will be prepared from the neat substances. Funding for this activity will be provided from the institutional budget of JRC-IRMM.

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