Planned Work Programme for 2015

Explanatory remark

This planned work programme reflects the tasks of EURLs as fixed in REGULATION (EC) No 882/2004. Furthermore, SANCO/10932/2014 Rev.1 ANNEX defines four operational objectives for the work of the EU Reference Laboratories in 2015. In the following planned work programme for 2015, the fulfilment of these objectives is indicated for each topic (directly under title of each topic). Then, the above mentioned SANCO document describes activities to be funded specifically for each EURL. Also the fulfilment of this activity is indicated. Finally, at the meeting of COM and EURL directors on 4 July, it was decided to establish three EURL Director's Working Groups, among them on development and evaluation of NRL workshops and training programmes (WG 1-NRLs). The director of the EURL for Dioxins and PCBs was asked to head this working group. Therefore, also these activities are included in the planned work programme for 2015.

1. General tasks of EURL

Covering the operational objectives:

- ✓ **To ensure the availability of scientific and technical assistance provided by the EU-RLs,**
- ✓ **To ensure a sound and efficient management of EU-RL funding cycle.**

1.1. **Technical and scientific support to the Commission**.

1.2. Compilation of the **Technical and Financial Report for 2014** by 31 March, 2015.

1.3. Compilation of the **planned activities, estimated budget and performance indicators for 2016** by 1 September 2015.

1.4. Participation in annual co-ordinating meetings and general management activities of the **Commission** (e.g. meetings between COM and directors of EURLs for EURLs).

1.5. Participation in annual co-ordinating meetings and general management activities of other **EURLs for residues**, as far as necessary.

1.6. **Maintenance of contacts to National Reference Laboratories** (NRLs) and build-up of contacts to possibly newly selected NRLs. The tasks of the EURL and NRLs is to cover dioxins, dioxin-like PCBs and indicator PCBs in food and feed and in particular analytical issues related to both confirmatory and screening methods. However, the structure and capabilities of NRLs differ from Member State to Member

State requiring a more complex system of linking the NRLs with the EURL/NRL network. Therefore, the EURL compiled a list with all NRLs and contact points in this field and keeps this list updated. The list includes contact data and information about analytical capabilities.

1.7. In cooperation with the competent NRLs, **maintenance of contacts to Official Laboratories (OFLs)** and build-up of contacts to newly selected OFLs in cooperation with NRLs, for inclusion of OFLs in proficiency tests (PTs).

1.8. **Documentation services** (updating of the CIRCA platform/publicly accessible EURL-website on regular basis with focus on disseminating information to NRLs. Constant monitoring of analytical methodology and EU legislation).

1.9. **Cooperation with international organizations**, in particular EFSA, CEN, WHO and UNEP (also for harmonization of requirements in the field of POPs analysis), where necessary.

1.10. Participation and presentation of EURL activities at most important international **conferences** in the relevant area.

2. Development and validation of analytical methodology

Covering:

- **the <u>operational objectives</u>**
  - ✓ **To ensure the development and use of high quality analytical methods across the EU-RL framework**
  - ✓ **To maintain appropriate level of proficiency testing ensuring efficiency of control analysis methods**
- **the <u>specific activity</u> for the EURL for dioxins and PCBs**

2.1. Performance of **two proficiency tests (PT) for determination of dioxins and PCBs in food and/or feed** for further improvement of analytical methods with regard to correct determination of PCDD/Fs and PCBs by screening or confirmatory methods (see 3.3).

2.2. Development of **extraction methods and/or criteria** for extraction of fat and analytes of interest for a possible harmonization of extraction methods and fat determination.

2.3. In combination with the these extraction methods the EURL will continue the evaluation of **automated, semi-automated and manual clean-up procedures** using a fully automated system, combinations of automated clean-up steps and manual steps for further improvement of the complete methods for PCDD/F and PCB analysis.

2.4. Development/evaluation **GC/MS-MS confirmatory methods** for control of EU-regulated levels **in food and feed** for sum TEQ of dioxins, furans and dioxin-like **with focus also on the reliability of analysis of dioxins and dioxin-like PCBs in feed at levels lower than the maximum level by GC-MS/MS** (in comparison with GC-HRMS).

2.5. Development/evaluation and application of analytical methods for determination of PCDD/Fs and PCBs in **animal blood**, evaluation of correspondence between blood and animal tissue (meat, fat).

2.6. Continuation of the development and application of suitable methods for the inclusion of **polybrominated dibenzo-p-dioxins and dibenzofurans (PBDD/Fs)** in the scope of the analysis of different food and feed matrices for PCDD/Fs and PCBs as a permanent task of the EURL.

2.7. **Assistance of NRLs for the application of Recommendation 2014/118/EU** (including brominated flame retardants in the EU monitoring programme) as requested from the Commission.

2.8. **Development, optimization and validation of bioanalytical methods:** Screening methods for **checking of EU-regulated food matrices for compliance with MLs and ALs** (permanent task). Focus will be on extraction and clean-up steps, assay-performance and statistical evaluation of bioanalytical results. When PCDD/F-BEQs and DL-PCB-BEQs are measured separately, the cell response is measured on **H4L1.1 rat** hepatoma cells (available from BioDetection Systems, NL, or from University of California Davis, USA), and/or on highly sensitive 20 DRE **H4L7.5 rat** hepatoma cells (available from University of California Davis, USA). For sum-BEQ as target parameter, H4L1.1 rat hepatoma cells are used as detection system due to their extremely low background response susceptibility.

2.9. Optimization/development and validation of **new bioanalytical methods for screening of EU-regulated feed matrices** (permanent task).

2.10. Newly validated methods for screening of food and feed will be applied to confirmed routine samples to enlarge the already existing **QC-data base** ultimately leading to **performance re-evaluation**.

2.11. An **Ultra-turrax dispersion** technique developed by EU-RL and implemented for fast extraction of lipids and dioxin-like compounds will further be extended to additional matrices of interest within the scope of bioanalytical methods.

2.12. **Evaluation of discrepancies between bioanalytical and GC/HRMS results**: Bioanalytical screening methods are a suitable tool for detection of novel emerging risks, in particular the presence of brominated dioxins and furans e.g. as result of application of brominated flame retardants. However, it must be stressed that the bioanalytical screening result has to be well validated, so as not to promote any un-

confirmed (by confirmatory HRMS) elevated result as arising from a novel contaminant. There are a number of factors which can cause apparently elevated results. These factors have to be carefully controlled. If a carefully validated BEQ-result is significantly above TEQ-results of confirmatory methods, only a complex forensic examination can identify the source of the contamination. In addition to particularly elevated levels in case of contamination incidents, the dioxin burden might be underestimated systematically, as a Swedish study shows which found levels of PBDDs and PBDFs in human adipose tissue samples contributing up to 15% of the total amount of TEQ (Ericson Jogsten et al [2010], *Chemosphere* 78: 113 – 120). Therefore, a study will be initiated and performed by the EURL (as doctoral thesis in cooperation with the University of Hohenheim, Germany) which combines the two established pillars of dioxin analysis: Results of well validated bioanalytical screening will be compared with results of confirmatory methods which then will comprise not only PCDD/F and dl-PCBs but also PBrDD/F (see 2.6) and possible other dioxin-like compounds. If particularly high BEQ-levels are found which do not correspond to WHO-PCDD/F-PCB-TEQ levels, comprehensive detective work is planned to detect the source (novel risk).

3. Quality assurance and quality control

Covering:

- **the <u>operational objectives</u>**
  - ✓ **To maintain appropriate level of proficiency testing ensuring efficiency of control analysis methods**
  - ✓ **To ensure the availability of scientific and technical assistance provided by the EU-RLs**
- **the <u>specific activity</u> for the EURL for dioxins and PCBs**

3.1. Performance of **QA/QC activities** for the carrying out of the EURL tasks/activities, as required by ISO 17025 and 17043 accreditation, for both parts of the EURL (confirmatory and bioanalytical screening methods).

3.2. Organisation of **two interlaboratory studies (proficiency test, PT)** on determination of dioxins, furans, dioxin-like PCBs and marker PCBs in **food and / or feed** (see 2.1). The PT will be addressed to NRLs with confirmatory methods (based on GC/HRMS, GC/MS or GC/ECD, depending on the analyte) and screening methods. Results will be discussed and conclusions be drawn at two EURL/NRL workshops organized in the first respectively second half of 2015. The PT in feed will focus also on the reliability of analysis of dioxins and dioxin-like PCBs in feed at levels lower than the maximum level by GC-MS/MS (in comparison with GC-HRMS).

4. Technical and scientific support to Member States and the Commission, inclusive arbitration and training activities

Covering the <u>operational objectives:</u>

- ✓ **To ensure the development and use of high quality analytical methods across the EU-RL framework**
- ✓ **To ensure the availability of scientific and technical assistance provided by the EU-RLs**

4.1. **Analytical support** to the Commission and to NRLs of Member States and Candidate Countries

4.2. **Training course** for NRLs

4.3. For specific tasks, working groups might be formed to address specific needs with regard to physical-chemical or bioanalytical aspects, e.g. regulation, development of physical-chemical screening methods, validation schemes, or practical guidelines on validation.

4.4. In May 2012, a **core working group on Measurement Uncertainty (MU)** was formed which will contribute to the harmonization of the application of MU. The work of this core working group will be continued in 2015; results will be communicated to the NRL network for discussion and reflection.

4.5. **Mission** to NRLs and dissemination of scientific information if necessary

4.6. Individual **follow-up and assistance to NRLs** of which the analytical results from the interlaboratory study are not satisfactory

4.7. **Analyses of official samples on request** (submitted by EU Member States in case of dispute between Member States or in case of analytical problems with a responsible NRL)

4.8. Build-up of **congener pattern data base** for PCDD/Fs and PCBs in cooperation with NRLs.

4.9. Organisation of **two annual workshops** and discussion of interlaboratory studies in both fields food and feed for dioxins, dioxin-like PCBs and indicator PCBs (see 2.1 and 3.3) for NRLs using confirmatory methods (based on GC/HRMS, GC/MS or GC/ECD, depending on the analyte) and / or bioassay screening methods with follow-up for underperforming NRLs. The workshop concept will be based on organization (at least) of one workshop per year at the EURL in Freiburg and allow the organization of the second workshop at one of the NRLs.

4.10. Establishment and leadership of the **EURL Directors' Working Group on development and evaluation of NRL workshops and training programmes**, including organization of a workshop.