



**WORK PROGRAMME
OF THE
EUROPEAN UNION REFERENCE LABORATORY FOR
CHEMICAL ELEMENTS IN FOOD OF ANIMAL ORIGIN
AT THE
ISTITUTO SUPERIORE DI SANITÀ
ROME, ITALY**

LEGAL FUNCTIONS AND DUTIES

The functions and duties of the European Union Reference Laboratory, formerly named Community Reference Laboratory, are described in Article 32 of Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 (Official Journal of the European Union L 165, 30.04.2004, corrected and republished in the Official Journal of the European Union L 191, 28.05.2004).

1. OBJECTIVES FOR THE PERIOD 01 JANUARY 2012 - 31 DECEMBER 2012

A. General tasks

Article 32, paragraph 1 (e)

B. Development and validation of analytical methods

Article 32, paragraph 1 (a, c)

C. Quality Assurance and Quality Control, including the organisation of proficiency tests and the development of test material.

Article 32, paragraph 1 (b)

D. Technical and scientific support to NRLs and Third countries

Article 32, paragraph 1 (a, d, e, f)

2. WORKING PLAN FOR THE PERIOD 01 JANUARY 2012 - 31 DECEMBER 2012

A. General Tasks

Article 32, paragraph 1 (e)

1. Meeting of all EU-RLs

The EU-RL CEFAO is willing to participate in any coordination meeting of the EURLs that may be organised.

2. Technical and scientific support to the Commission and co-operation with international organisations

An evaluation of the National Residues Control Plans of the EU Member States will be performed. The assessment of adequacy of methods adopted by each of the Member States will entail giving specific suggestions, when necessary.

Upon request, technical and scientific support will be provided to the European Commission and its related Institutes.

3. Compilation of annual reports

The reports on the activities carried out for the relevant contract period will be regularly issued (e.g. final report, interim report, report on PT, financial reports, workshop report, report on NRLs visits).

4. Documentation services, interchange of information

In the EU-RL CEFAO website, the EU-legislation, the list of the Official Methods and new relevant documents will be updated. In the Restricted Area the NRLs may gain access to the reports of the PTs, the z-scores Control Charts, reports of the workshops, and, finally, consult the Handbook of Analytical Methods of the NRLs. As for this last document, the reviewed analytical methods and/or new methods adopted by NRLs are yearly updated. The EU-RL CEFAO will request NRLs to provide this information.

Information on EU legislation and analytical support will be given to NRLs and to Official Laboratories of Third Countries upon their request.

B. Development and Validation of Analytical Methods

Article 32, paragraph 1 (a, c)

5. Analytical methods

5.1 Maintenance of analytical methods

This is an ongoing activity that may also include the updating/revision of accredited methods; it also comprises the additional validation necessary for the use of the "flexible scope".

5.2 Development of analytical methods

Throughout the years, the scheme of the PTs, aimed at improving the performance of the NRLs in the analyses on the matrices considered in the NRCPs, produced good results and now these methods can be considered adequate on the whole. Therefore, it can be profitable to propose more complex matrices to the network by means of an **interlaboratory validation**.

A method was developed by the EURL using the ICP-MS for the determination of lead on dairy products in order to offer an alternative method to the ISO/TS 6733 IDF/RM133 (Milk and milk products – Determination of lead content – Graphite furnace atomic absorption spectrometric method). In the study of the

EURL, the method took cadmium into consideration, as well. Moreover an experimental thorough examination of the "ISO/TS 6733" is ongoing in order to provide the NRLs with details to improve the performance of the method and to facilitate its application since, as reported in Annex-A of standard, the results of the study were not satisfying.

All this considered, a collaborative trial for an interlaboratory validation within the network of the NRLs will be helpful for the Labs.

Since the NRLs mainly use ICP-MS or ETA-AAS, two procedures relevant to the two measurement principles will be provided. The sample treatment foresees a microwave digestion for the method using ICP-MS as technique of measurement. For methods based on ETA-AAS a dry-ashing procedure for sample treatment will be proposed; nevertheless it could be necessary to develop a microwave digestion followed by a treatment for the acid content reduction if some NRLs cannot use the dry-ashing.

Samples with different analytes concentration will be used. Some of them will have measurable concentrations so that the exercise is profitable. To this end, from a previous study, the EURL set up the procedure producing spiked samples fit for purpose. Some of them will be used together with *ad hoc* prepared samples (natural cheese and low-level spiked cheese).

Being cheese a complex transformed food, an evaluation of the main characteristics of the material is ongoing in order to provide the NRLs a comparison with similar products on the market. Moreover a full assessment of the homogeneity of all products will be carried out.

The NRLs will be provided with the details of the sample treatment and the instrumental determination for both methods. Moreover the Labs will be requested to verify and document the presence of specific interferences relevant to each technique used. Although a substantial work will be requested from both the EURL and the NRLs, this proposal offers the chance to check and to overcome any difficulty deriving from a complex matrix.

The ongoing study on **inorganic arsenic speciation** will be continued focusing on the separation and quantification of arsenic based on HG-AAS technique that is the principle of measurement applicable by Labs not equipped with ICP-MS. The objective is to propose a future interlaboratory validation on this issue.

C. Quality Assurance and Quality Control, including the organisation and implementation of proficiency tests

Article 32, paragraph 1 (b)

6. Maintenance of the QA/QC system

The activities as accredited laboratory and accredited PT provider will be regularly run. In order to monitor and document the Quality Control, the EU-RL CEFAO will apply for some commercial PT, besides the ones already carried out within its own organisation. The choice and number of PTs will depend on the availability and pertinence of analytes and matrices offered by commercial PT providers.

According to Reg. (EC) No 765/2008 of the European Parliament (art. 4 and 39) the transition to the national accreditation body will be performed before the expiration date of the accreditation certificate.

All this includes no extra costs.

7. Proficiency test

Besides the interlaboratory comparison (5.2), devoted to a method validation, a PT based on liquid milk has been planned. This matrix was analyzed in 2010 with a good overall result and then several vials were provided for the internal scopes of the laboratories, nevertheless, in 2012 it is advisable to provide the NRLs with an external PT to monitor their proficiency on this matrix. The analytes will be arsenic, cadmium and lead.

As for the preparation, the sample will be prepared in the EU-RL CEFAO laboratory and the elements concentration will be adjusted pursuing specific objectives. The sterilization of the milk will be subcontracted to a qualified supplier.

The performance of the participants will be assessed by the z-scores approach using the $\sigma_{p\text{EURL}}$ but, in order to allow a comparison with the performances obtained in commercial programmes, the scores using the $\sigma_{p\text{Horwitz}}$ will be supplied as well.

The NRLs will be requested to use their methods as routinely applied. The participants are also recommended to give details on their sample preparation and measurement parameters in the "Results Form" especially designed for this purpose. The compliance statement of the sample to the ML set in the 1881/2006 for Lead will also be requested.

A "Preliminary Report", containing a summary statistics, the results and the z-scores, will be published in the Restricted Area of the website, approximately within 40 days from the deadline of the round. The "Final report" including several issues (e.g. rationale of the round, appropriate statistics, homogeneity and stability data, comments) will be sent to the participants in paper form and will replace the preliminary Report in the website. NRLs will be informed on the issuing of these reports via e-mail.

The Final report is also sent to the European Commission and also to the NRLs that did not participate in that round.

8. Production of materials for PTs

Previous activities led to obtain a procedure suitable for the production of a cheese with a sufficient homogeneity. To complete the products to be used in the interlaboratory validation trial, another sample, containing a concentration lower than that already produced, and a blank cheese will be prepared.

For As-inorganic speciation, that could be proposed in a future interlaboratory trial, it is of the utmost importance to have an appropriate material. Therefore, the search of a sample of mussels at measurable concentration of inorganic-As will be continued coupled with the study of procedures for the production of suitable material to be used in PTs.

D. Technical and Scientific Support to NRLs and Third Countries

Article 32, section 1 (a, d, e, f)

9. Analytical support and training

As follow-up, the analytical performance of the NRLs is monitored through the control charts of z-scores assigned in the EURL-PTs; the charts could be confidentially discussed together with the interested parties, when necessary.

When an underperformance is noticed in a PT, the laboratory will be individually contacted. Samples, *ad hoc* prepared, will be provided, when appropriate.

Analytical support by means of advice or *ad-hoc* training courses will be given to the Official Laboratories of Candidate Member States and Third Countries, upon request. The EURL accepted the request of collaboration in a program for EU officials in the framework of the "Better Training for Safer Food" DG-SANCO initiative, starting in April/May 2012.

Official analyses will be performed, if necessary.

10. Provision of reference materials

In the framework of the round on milk, a higher number of test items will be produced so that the NRLs will receive not only the sample for the round, but also several test items that they can use for their own scopes.

The surplus of the reference materials produced for the previous PTs will be available for the NRLs upon request.

11. Visits to NRLs and international mission for scientific information

Visits to some NRLs are set on the basis of individual needs evidenced either from the results of a proficiency test or from the evaluation of the Control charts, therefore, the choice for 2012 will be based on the results of the current PT.

12. Organisation of the workshop.

A workshop will be organised. The possible issues can be:- Outcome of the interlaboratory validation. - Evaluation of the 2012 PT. - Details of analytical methods derived from the analysis of the "Results Form". - Some control charts will be examined. - Specific topics will be proposed depending on the needs of the participants.