WORK PROGRAMME of EURL for

MYCOTOXINS & PLANT TOXINS

PERIOD: 1/1/2023 – 31/12/2024

Version 2
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CONTACT DETAILS

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SUMMARY

INTRODUCTION

Legal functions and duties

The functions and duties of the EU Reference Laboratory are described in Article 94 of Regulation (EC) No 2017/625 of the European Parliament and of the Council of 7 April 2017 (Official Journal of the European Union L 95/I, 7.04.2017, pp 1-141) and its amendments.

The general objective of the Commission for the period 2023-2024 is "to contribute to a high level of protection for consumers and the environment while favouring competitiveness and the creation of jobs[1]". This general objective is elaborated in four operation objectives which are the foundation of the EURL work programme for 2023-2024.

The EURL mycotoxins & plant toxins work programme is divided in 4 parts, linked to the five operation objectives (last objective not applicable). For each operational objective individual tasks have been formulated which are described in more detail for the year 2023.

Structure work programme EURL mycotoxins & plant toxins based on Regulation (EU) 625/2017 article 94.

[1] Commission implementing decision of 24.7.2015 on the adoption of the work programme of the Commission for the years 2015 and 2016 and on the financing of the Union contribution to the European Union Reference Laboratories

Regulation (EU) 625/2017 Art 94(2):
European Union reference laboratories designated in accordance with Article 93(1) shall be responsible for the following tasks insofar as they are included in the reference laboratories' annual or multiannual work programmes that have been established in conformity with the objectives and priorities of the relevant work programmes adopted by the Commission in accordance with Article 16 of Regulation (EU) No 2021/690:
(taking into account Art 147 of (EU) 625/2017)

1 TO ENSURE AVAILABILITY AND USE OF HIGH QUALITY METHODS AND TO ENSURE HIGH QUALITY PERFORMANCE BY NRLs.

Please, provided activities related to Regulation (EU) 2017/625:
(Number of Sub-activity boxes can be adjusted by EURL)

- *Art. 94.2.a* ***Providing national reference laboratories with details and guidance on the methods of laboratory analysis, testing or diagnosis, including reference methods.***
- *Art. 94.2.b* ***Providing reference materials to national reference laboratories***
- *Art. 94.2.c* ***Coordinating the application by the national reference laboratories and, if necessary, by other official laboratories of the methods referred to in point (a), in particular, by organising regular inter-laboratory comparative testing or proficiency tests and by ensuring appropriate follow-up of such comparative testing or proficiency tests in accordance, where available, with internationally accepted protocols, and informing the Commission and the Member States of the results and follow-up to the inter-laboratory comparative testing or proficiency tests.***
- *Art. 94.2.l* ***Where relevant for their area of competence, cooperate among themselves and with the Commission, as appropriate, to develop methods of analysis, testing or diagnosis of high standards.***

Sub-activity 1.1 ***Providing national reference laboratories with details and guidance on the methods of laboratory analysis, testing or diagnosis, including reference methods (a)***

Sub-activity 1.1.1 *Updating the information on methods for the EURL mycotoxins & plant toxins website*

Objectives:	The EURL mycotoxins and plant toxins (MP) website is designed and shaped to accommodate relevant information on analytical methods to the NRLs.
Description:	Results from the method development will be made available in the EURLMP_method format.
Expected Output:	EURLMP_method(s) of the developed analytical method(s) are online available.
Duration:	2023-2024

Sub-activity 1.1.2 *Collaboration other EURLs*

Objectives:	Collaboration EURLs on contaminants.
Description:	To make use of existing experiences and tools as well as exploit synergy potentials a team was formed in 2019 with the EURL for metals and nitrogenous compounds (EURL-MN), the EURL for processing contaminants (EURL-PC) and the EURL for halogenated persistent organic pollutants in food and feed (EURL-POPs). A list of subjects that need mutual attention is determined and priorities are defined.
Expected Output:	- One meeting per year with the commission, video meeting(s) if necessary; - Documents on various issues a.o. number of significant digits, uncertainty will be shared when available.
Duration:	2023-2024

Sub-activity 1.1.3 AQC group EURL-NRLs mycotoxins & plant toxins

Objectives:	Review relevant issues to ensure quality of analysis at the NRLs
Description:	The working group analytical quality assurance (AQC) of the EURL mycotoxins & plant toxins will be consulted when necessary. This group consists of maximum 4 representatives from NRLs and will discuss the items related to quality. E.g. performance characteristics, validation, LOQ, LOD etc.
Expected Output:	To be determined.
Duration:	2023-2024

Sub-activity 1.2 ***Follow up on requests from NRLs for reference materials (b)***

Objectives:	Providing NRLs with materials upon request.
Description:	EURL mycotoxins and plant toxins can distribute to NRLs left-over material from PTs or from collaborative testing as long as supply lasts and without a guarantee on the quality and analyte content of the materials.
Expected Output:	Shipment of samples to NRLs if requested
Duration:	2023-2024

Sub-activity 1.3 ***Organisation of proficiency tests and follow-up of the results (c)***

Sub-activity 1.3.1 *Organisation of PTs*

Objectives:	Organisation of 5 PTs in the period 2023-2024 for routine methods. Suggestions for PTs will be collected during the annual EURL workshops in 2023 and 2024.	
Description:	2023: EURLPT-MP10	Aflatoxins and ochratoxin A
	2023: EURLPT-MP11	Hydrocyanic acid
	Suggested for 2024 (to be confirmed at workshop 2023)	
	2024: EURLPT-MP12	*Ochratoxin A in meat (food of animal origin)*
	2024: EURLPT-MP13	*Enniatins and beauvericin*
	2024: EURLPT-MP14	*Cannabinoids*
Expected Output:	5 PT reports	
Duration:	2023-2024	

Sub-activity 1.3.2 *Follow-up and communication of the PT results*

Objectives:	Implementation of the follow-up protocol of the EU DG SANTÉ for proficiency testing[2].
Description:	There will be a follow-up on the performance of each NRL in the organised PTs. Also, each PT will be evaluated by the participants. The results of the PTs as well as upcoming PTs will be discussed in the annual EURL workshop.
Expected Output:	- Follow-up report of each PT - Evaluation report of each PT - Presentation at annual EURL workshop
Duration:	2023-2024

Sub-activity 1.4 Development and validation of analytical methods (I)

Sub-activity 1.4.1 *Method development and extension*

Objectives:	To develop and investigate new methods and the scope of the analytical methods. This may involve: new mycotoxins or plant toxins, extension with new matrices or additional compounds, lowering LOQs (triggered by e.g. EFSA opinions), investigate the potential and usefulness of new technologies. Subjects 1.4.1a to 1.4.1d will be covered in 2023. Subjects for 2024 will be determined in September 2023 in consultation with the representatives of the European Commission and the Netherlands Food and Consumer Product Safety Authority (NVWA).
Description:	**1.4.1a Method for ochratoxin A (OTA) in kidneys and survey of OTA in cured meat products** Ochratoxin A (OTA) is produced by fungi during the field period of grains but can also be produced during transport and storage. OTA is fat-soluble and can therefore transfer from feed to farm animals where it accumulates in organs, muscle tissue and blood. In several EU Member States, the level of OTA in kidney tissues is used as an indication of contamination of muscle and organ tissue. Maximum Limits for OTA in kidney tissue are set in several Member States. To provide NRLs with an analytical method, the method for analysis of OTA in cured meat products, as developed in 2022, will be adapted and validated in 2023 for kidney tissue. In 2022, during the development and validation of the method for cured meat products, it was found that dry ham was regularly contaminated with OTA. In 2023, therefore the method will be used for a survey on the OTA contamination of cured meat products originating from Dutch supermarkets. The survey will comprise approximately 40 cured meat products. 2023: M1-M6 Method development and validation for quantification of OTA in kidney M7-M9 Survey of OTA in cured meat products M9-M12 Reporting and writing EURLMP_method **1.4.1b. Glycoalkaloids in potato products** Following the EFSA opinion on glycoalkaloids (GA) in potatoes [1], in 2022 a method was developed and validated for the analysis of GA in raw and boiled table

2 https://eurlcefas.org/media/4149/protocol_for_management_of_underperformance_in_comparative_testing_and_or_lack_of_collaboration_of_national_reference_laboratories.pdf

potatoes. In 2022, the European Commission issued a recommendation for monitoring GA in potatoes and derived products (Recommendation (EU) 2022/561). In 2023 the method will therefore be adapted to also allow the analysis of industrially processed potato products such as refrigerated potato products, frozen fries and other frozen potato products, instant mashed potatoes, and potato crisps. The method will be applied in a limited survey comprising approximately 40 samples of potato products available on the Dutch market.

[1] EFSA Journal 2020;18(8):6222. doi: 10.2903/j.efsa.2020.6222.

2023 M1-M6 Method development and validation for GA in processed potato products (validation report and WFSR SOP)
M7-M9 Survey on GA in processed potato products
M9-M10 Reporting and writing EURLMP_method

1.4.1c. Distribution of co-harvested plant parts in laboratory samples

Introducing Maximum Limits (MLs) for plant toxins in food has highlighted the issue of homogeneity of the contamination in laboratory samples [2, 3]. Most urgent is to determine the distribution of co-harvested plant parts, as for pyrrolizidine alkaloids (PA) and tropane alkaloids (TA) in cumin seed and oregano. The sampling of a batch of cumin by the competent authority yields several kilograms of laboratory sample, from which a sub-sample is taken for analysis. In consultation with the NVWA, in 2022 a project was started on investigating the distribution of plant parts containing PA in cumin seed laboratory samples. In 2023, this research will be continued and extended with oregano.

[2] Regulation (EC) No. 1881/2006 and amendments.
[3] Regulation (EC) No. 401/2006 and amendments.

2023 M1-M12 Results on the distribution of contamination of PA in cumin seed and oregano.

1.4.1d Enniatins and beauvericin in grains

Enniatins (ENN) A, A1, B, B1 and beauvericin (BEAU) are produced by *Fusarium* moulds during the field period. ENN and BEAU are therefore found in the raw material grains (wheat, barley, oats) and the foodstuffs produced thereof. ENN and BEAU are also found in dried fruits, oilseeds and coffee. EFSA advised in their opinion in 2014 to use an analytical method based on LC-MS/MS for the analysis of ENN and BEAU. It was also recommended to organize proficiency testing (PT) [4]. In 2016, the EURL mycotoxins organized a PT that included several regulated mycotoxins and also the non-regulated ENN and BEAU [5]. Eleven of the 55 participating NRLs presented results for all four ENN and BEAU. The key-density plots for ENN A1 and BEAU (Annex 7 of the report [5]) clearly show a shoulder, caused by the wide variety in z-scores. This might be due to the various analytical methods used by the participants. In 2023, therefore the analytical methods used in the PT will be reviewed by WFSR and the results may possibly explain the differences in PT results. Based on the method evaluation, the WFSR method will be adapted and validated. The improved method will be applied for a small survey of about 40 samples.

[4] EFSA Journal 12(8):2902, 2014: p. pp. 174. doi:10.2903/j.efsa.2014.3802.
[5] Goncalves et al. 2017, JRC108384; EUR28790 AND; doi:10.2760/52884.

2023 M1-3 Evaluation of PT results [5]
M4-8 Method development and validation
M9-10 Survey comprising approximately 40 samples
M11-M12 Reporting and writing EURLMP_method

2 TO PROVIDE SCIENTIFIC AND TECHNICAL ASSISTANCE TO NRLs

Please, provided activities related to Regulation (EU) 2017/625:
(Number of Sub-activity boxes can be adjusted by EURL)

- *Art. 94.2.d* ***Coordinating practical arrangements necessary to apply new methods of laboratory analysis, testing or diagnosis, and informing national reference laboratories of advances in this field.***
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- *Art. 94.2.e* ***Conducting training courses for staff from national reference laboratories and, if needed, from other official laboratories, as well as of experts from third countries.***
-
- *Art. 94.2.g* ***Providing information on relevant national, Union and international research activities to national reference laboratories.***

Sub-activity 2.1 ***Practical arrangements to apply methods, and inform NRLs (d)***

Sub-activity 2.1.1 *Website development and maintenance*

Objectives:	Provide information to NRLs necessary to apply new methods.
Description:	The EURL mycotoxins & plant toxins website will be maintained with continued efforts to further implement its use within the NRL/OL network. EURL PT and scientific reports will be published on the website. Developments with respect to legislation will be monitored and updated.
Expected Output:	- Regular update of information on the EURL website. - Relevant EU legislation on mycotoxins and plant toxins available on website.
Duration:	2023-2024

Sub-activity 2.1.2 *Knowledge development*

Objectives:	Stay up-to-date with legislation and analytical developments in the area of mycotoxins and plant toxins.
Description:	Developments with respect to analytical methodology, (EU) legislation and the results of relevant scientific studies are monitored. Issues of interest for NRLs will be communicated via the annual EURL workshop and the EURL website.
Expected Output:	Presentation on latest developments in a relevant area of analysis of mycotoxins or plant toxins during annual EURL workshops.
Duration:	2023-2024

Sub-activity 2.1.3 *Updating and publication of the list of NRLs*

Objectives:	To have an updated list of NRLs in the competence field of the EURL.
Description:	Update, verify and publish the list of NRLs on the website regularly.
Expected Output:	Up-to-date list of NRLs on mycotoxins and plant toxins in food and feed.
Duration:	2023 M1 2024 M1

Sub-activity 2.1.4 *Providing analytical assistance to NRLs*

Objectives:	Assist NRLs with confirmatory analysis in case of technical problems for arbitrary purposes.
Description:	Analyse samples from NRLs for confirmation when there are technical problems or for arbitrary purposes in case of a dispute.
Expected Output:	Analysis results.
Duration:	2023-2024

Sub-activity 2.2 ***Training courses for staff (e)***

Objectives:	NRL scientists are trained at EURL (WFSR) on an analytical method or in the area of method validation and quality assurance.
Description:	Hands-on training: General procedure is to organise 2 hands-on training sessions per year (2-3 days) at WFSR for max. 8 representatives of NRLs on the analysis of mycotoxins and plant toxins. As of January 2023, one hands-on training per two years will be organised for mycotoxins or plant toxins in food of animal origin, when requested. The topics for the hands-on trainings for 2023 and 2024 will be determined during the annual Workshop in 2022 and 2023. 2023: EURLTR-MP08 Pyrrolizidine alkaloids, 17 and 18 April 2023: EURLTR-MP09 Multi-mycotoxins, June 2023: EURLTR-MP10 Ochratoxin A in meat, November (food of animal origin) *Suggested for 2024 (to be confirmed at workshop 2023)* *2024: EURLTR-MP11 THC(A), aim is April 2024.* *2024: EURLTR-MP12 Ergot alkaloids, aim is September 2024.*
Expected Output:	Five hands-on training sessions at WFSR
Duration:	2023 Three hands-on training sessions at WFSR 2024 Two hands-on training sessions at WFSR

Sub-activity 2.3 ***Information to relevant national, Union and international research activities to NRLs (g)***

Sub-activity 2.3.1 *Organisation of workshop*

Objectives:	To inform NRLs on new methods, legislation, discuss work programmes and PTs.	
Description:	One representative of each member state and a selected number of representatives of third countries (one person per country) meet, usually in the Netherlands, for information exchange, to discuss new topics in the area of mycotoxins and plant toxins and to define the research, PT and training subjects for next year. Duration is 2 days (noon day 1 to early afternoon day 2). It will be organised in person and on-line.	
Expected Output:	Presentations and meeting report.	
Duration:	2023 October 3 and 4	hybrid
	2024 October XX	hybrid (exact dates to be determined)

Sub-activity 2.3.2 *Missions to NRLs*

Objectives:	Missions to NRLs in member states on request.
Description:	Missions will be undertaken to specific NRLs on the basis of their individual needs, e.g. in order to discuss and evaluate the results of a PT or for analytical support. A visit will only be scheduled after consultation with the Commission.
Expected Output:	Visit report
Duration:	On request

3 TO PROVIDE SCIENTIFIC AND TECHNICAL ASSISTANCE TO THE EUROPEAN COMMISSION AND OTHER ORGANISATIONS

Please, provided activities related to Regulation (EU) 2017/625:
(Number of Sub-activity boxes can be adjusted by EURL)

- *Art. 94.2.f* ***Providing scientific and technical assistance to the Commission within the scope of their mission.***

- *Art. 94.2.h* ***Collaborating within the scope of their mission with laboratories in third countries and with the European Food Safety Authority (EFSA), the European Medicines Agency (EMA) and the European Centre for Disease Prevention and Control (ECDC).***

- *Art. 94.2.i* ***Assisting actively in the diagnosis of outbreaks in Member States of foodborne, zoonotic or animal diseases, or of pests of plants, by carrying out confirmatory diagnosis, characterisation and taxonomic or epizootic studies on pathogen isolates or pest specimens.***

Sub-activity 3.01 ***Technical and scientific assistance to the Commission (f)***

Sub-activity 3.1.1 *Advise on performance characteristics*

Objectives:	Advise the Commission on performance characteristics on mycotoxins and plant toxins in food and feed.
Description:	With the EURLs on contaminants (1.1.2) and the EURLMP-AQC group (1.1.3), a draft guideline will be prepared on the interpretation of the performance requirements for analysis of contaminants (including mycotoxins & plant toxins) in food and feed. This guideline will be discussed with the Commission after which the guideline will be finalised.
Expected Output:	- Meeting of EURLs on contaminants and EURLMP-AQC group. - Discussion on the guidelines on performance characteristics of mycotoxin and plant toxins in food and feed with the Commission.
-	- Finalise the guidelines and publish on EURLMP website
Duration:	2023

Sub-activity 3.1.2 *Technical and scientific support to the Commission*

Objectives:	Technical and scientific support to the Commission.
Description:	Technical and scientific advice on analytical methods in relation to upcoming legislation will be provided to the Commission when requested. This includes attending 6 meetings of the Commission Working Group on Agricultural Contaminants and one EC mycotoxin workshop meeting per year.
Expected Output:	Formal and informal advice upon request, attending the meetings.
Duration:	2023-2024

Sub-activity 3.2 ***Collaboration with laboratories in third countries, European and international organisations (h)***

Sub-activity 3.2.1 *Collaboration with third countries, European and international organisations*

Objectives:	Collaboration with European and international organisations.
Description:	No actions foreseen in 2023 and 2024.
Expected Output:	Not relevant
Duration:	Not foreseen

Sub-activity 3.2.2 *Participation in symposia workshops and seminars*

Objectives:	Dissemination of scientific results.
Description:	2023 Mycotoxin Workshop; ISOPP. 2024 Mycotoxin Workshop; RAFA
Expected Output:	Report, presentations and posters
Duration:	2023-2024

Sub-activity 3.3 ***To ensure a sound and efficient management of the EURL funding cycle (i)***

Sub-activity 3.3.1 *EURL management*

Objectives:	Manage the EURL for mycotoxins & plant toxins
Description:	Management of the EURL comprises on time reporting of the scientific results according to the work programme and within the budget. Discuss scientific, planning or budget issues and amendments with the Commission a soon as they arise.
Expected Output:	On time and within budget delivery of results according to work programme.
Duration:	2023-2024

Sub-activity 3.3.2 *EURL Work programme*

Objectives:	Update the annual EURL work programme for 2024; Design the EURL work programme for the period 2025-2026.
Description:	Wishes and questions from NRLs and the Commission in the area of analysis will be inventoried during the annual workshop in October 2023. The subjects will be discussed with the Commission and a work programme with corresponding budget forecast will be compiled to update the working programme for 2024. The work programme and budget forecast for the period 2025-2026 will be designed in October 2024 in consultation with the NRLs and the Commission.
Expected Output:	Additional topics for working programme 2024 Work programme and budget forecast for the period 2025-2026 submitted on time.
Duration:	2023 M10 Update working programme 2024 2024 M10 Working programme 2025-2026

Sub-activity 3.3.3 *EURL report and cost statement*

Objectives:	Prepare report and cost statement for the period 2021-2022 Prepare interim report and interim cost statement for 2023
Description:	Compilation of the results of the annual work programme and budget for the period 2021-2022 and interim for 2023.
Expected output:	EURL final scientific report and cost statement for the period 2021-2022 and interim report and cost statement for 2023 in time.
Duration:	2023 M2 Final report and final cost statement period 2021-2022 2024 M2 Interim report and cost statement for 2023

4 REAGENTS AND REFERENCE COLLECTIONS

Please, provided activities related to Regulation (EU) 2017/625:
(Number of Sub-activity boxes can be adjusted by EURL)

- *Art. 94.2.*j ***Coordinating or performing tests for the verification of the quality of reagents and lots of reagents used for the diagnosis of foodborne, zoonotic or animal diseases and pests of plants.***

- *Art. 94.2.k* ***Where relevant for their area of competence, establishing and maintaining:***
  - ***i. reference collections of pests of plants and/or reference strains of pathogenic agents;***
  - ***ii. reference collections of materials intended to come into contact with food used to calibrate analytical equipment and provide samples thereof to national reference laboratories;***
  - ***iii. up-to-date lists of available reference substances and reagents and of manufacturers and suppliers of such substances and reagents.***

Sub-activity 4.01 ***Up-to-date lists of available reference substances and reagents and of manufacturers and suppliers of such substances and reagents (kiii)***

Objectives:	Provide NRLs with an up-to-date list of reference materials and analytical standards, that are commercially available or have been acquired by the EURL.
Description:	The inventory with details on reference materials and analytical standards available from the EURL and from commercial providers will be updated. An update will be made of the list of available CEN methods on mycotoxins and plant toxins and will be placed on the website. An update will be made of the list of available training courses in the field of mycotoxins and plant toxins analysis and will be placed on the website.
Expected Output:	Updated tables with commercially available reference materials and analytical standards on the EURL mycotoxins & plant toxins in food and feed website.
Duration:	2023 M3 2024 M3

5 REQUIREMENTS RELATED TO OTHER LEGISLATION

Please specify applicable legislation:
(Number of Sub-activity boxes can be adjusted)

REMARKS