

WORK PROGRAMME of EURL for
PESTICIDE RESIDUES IN CEREALS
AND FEEDING STUFF

PERIOD: 2019/2020

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INTRODUCTION

The main purpose of the European Union Reference Laboratory on Pesticide Residues in Cereals and Feedingstuff (EURL-CF) is to ensure the quality of the pesticide residue analysis performed on food and feed in the EU Member States (MSs). This includes the use of multi methods as well as harmonized procedures for quality control and validation of methods used. Most of the activities of the EURL-CF aim to implement 1) valid multi methods for analysing pesticide residues in cereals and feeds, 2) improving and boosting the communication in the EURL/NRL/OfL network, 3) strengthen education and training, 4) address knowledge gaps, and 5) ensure harmonization according to the Commission Implementing Decision EU 2017/660 'concerning a coordinated multiannual control programme of the Union to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin' (latest version).

In addition, the EURL-CF will provide assistance to the MSs to reduce knowledge gaps and increase both analytical performance as well as the analytical scope. Furthermore, the EURL-CF is, together with EURL-FV, EURL-SRM, EURL-AO editor of the guidance document SANTE 11813/2017 on Method Validation and Quality Control Procedures for Pesticide Residues Analysis in Food and Feed (latest version).

The EURL-CF is hosted by the Technical University of Denmark, National Food Institute (DTU Food) as part of one of the activities of the Research Group for Analytical Food Chemistry. The Research Group is involved in all aspect of providing chemical data, which is a crucial part of food trust and transparency for healthy choice by consumers as well as for regulation by authorities and innovation by industry. The ambition in the Research Group for Analytical Food Chemistry is to provide and interpret these crucial data by developing and applying reliable, robust and detailed chemical analysis. Our focus is on trace analysis of small organic compounds in food, feed and biological samples. Our core fundament is high performance mass spectrometry coupled to chromatography, applying MS-MS, accurate mass spectrometry and isotope ratio measurements. Our object will be reached by challenging state-of-the-art mass spectrometry, data processing and sample preparation. Methods for monitoring and metabolomics combine our efforts to:

- Develop cost-efficient, robust and scalable methods for food monitoring and control that are specific and sensitive as well as of value for the official food control.
- Develop screening methods that are comprehensive to discover emerging risk.
- Maintain a metabolomics platform to unravel biological effects and mechanisms of chemicals.
- Co-develop new analytical technologies and strategies.

DTU Food supports the EURL-CF with basic housing as well as administrative support, IT support and basic laboratory necessities. In 2019-2020, DTU Food will, as earlier years, co-finance the overall budget as part of their responsibility as NRLs on pesticide residues. However, the financial system (databases etc.) at the University is not well suited to incorporate different financial sources to the projects. Consequently, the co-finance will not appear in the budget, but in reality still be allocated.

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 36 of Regulation (EU) No 652/2014:

(taking into account Art 147 of (EU) 625/2017)

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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 1.01 Provide NRLs with details and guidance on the methods of laboratory analysis

Objectives: Provide information to NRLs concerning method, PTs and general knowledge sharing.

Description:

1.01.1 Updating the EU RL website and the Circa domain

Maintenance of the common web portal <http://www.eurl-pesticides.eu> for the pesticide EURLs (horizontal task – see description in AWP for EURL-SRM).

The communication platform supports the coordination activities of the EURLs and serves as contact, reference and service points for the National Reference laboratories and official pesticide residue laboratories in Europe. The website for Cereal and Feeding stuff will be maintained in coordination with the other EURLs and the following items will be updated: Presentation of the EURL, information on proficiency test, training courses, workshop, annual work programme, validation data and analytical methods. The website is accessible for everybody. Additional also input to the development of the Datapool, especially the EUPT-Archive

Maintenance of the common CIRCA database (horizontal task – see AWP for EURL-AO). The CIRCA database is only accessible for a limited number of persons, mainly persons employed in NRLs or OfLs. Consequently, information can be uploaded to this platform if it has a more confidential content. It could e.g. be data that could be published in scientific papers. However, the platform can also send emails when new documents are uploaded. Therefore, information put on the open web portal will also be uploaded to the CIRCA platform.

1.01.2 Updating the EURL data pool

Validation results will be up loaded to the data pool and list of NRLs and OfL will maintain in cooperation with the EURL-SRM.

Expected Output: New webpages created or webpages updated

Duration: On-going

Sub-activity1.02 Organisation of proficiency tests and follow-up on the results

Objectives: Checking the analytical performance of the NRLs and OfL contributing to the EU monitoring programme.

Description:

1.02.1 Organisation of EUPT-CF13 on rye kernels

The proficiency test will cover pesticides analysed by multi methods. The target pesticides will include 179 pesticides, as agreed on by the Advisory Group. The rye kernels, which will be used as test item, were produced by a consultant and further spiked in the laboratory. The rye kernels will be homogenized and portions will weighed out into screw-capped polyethylene plastic bottles, sealed, numbered, and stored in a freezer at about -20 °C prior to homogeneity and stability testing. Before shipment of the test items, 20 homogeneity experiments will be performed (double determinations of 10 randomly selected test items). Stability test will be performed on several occasions during the PT period, in total 50 experiments.

It is foreseen that around 150 EU NRLs and EU OfLs will participate in the PT and additionally 10-20 official laboratories from Third Countries. One meeting with the Scientific Group is foreseen. The meeting will probably be held in Spain.

1.02.2 Preparation of test items for proficiency test 2020, EUPT-CF14

If necessary, field spraying of a relevant cereal or feed crop will be performed by a consultant in order to produce test material for EUPT-CF14. The proficiency test will focus on crops agreed upon by the Advisory Group. However, commodities like rice, wheat bran or soya seed could be of interest.

1.02.3 Organisation of EUPT-CF14 in 2020

The proficiency test will cover pesticides analysed by multi methods. The target pesticides will include pesticides, as agreed on by the Advisory Group. The test material will if necessary be produced by a consultant. The test material will be homogenized and portions will weighed out into screw-capped polyethylene plastic bottles, sealed, numbered, and stored in a freezer at about -20 °C prior to homogeneity and stability testing. Before shipment of the test items, 20 homogeneity experiments will be performed (double determinations of 10 randomly selected test items). Stability test will be performed on several occasions during the PT period, in total 50 experiments.

It is foreseen that around 100-150 EU NRLs and EU OfLs will participate in the PT and additionally 10-20 official laboratories from Third Countries, depending on the test material used. One meeting with the Scientific Group is foreseen. The meeting will probably be held in Spain.

1.02.3. EUPT result submission website and tools

A new the database and web tool for the annual proficiency tests (PTs) has been developed during 2018. The web tool has been individually organized for each EURL. Before the PT the organisers (EURLs) will, in coordination with the system programmers, (from the AIT department at the University) set up the database and web tool. Furthermore, it is foreseen that minor improvements of the system will be implemented.

To set up a PT, the EURL must incorporate the dates and deadlines, select the pesticides included in the PT in question from the global pesticide list. If additional or different information from the participants is needed the programmers will adjust the forms for result submission. Before the system is opened for use, the participants who signed up for the PT via the data pool will be uploaded to the system by the programmers and lab codes will be generated. After the deadline for result submission, data is extracted and transferred to the EURLs for further statistical evaluation of the laboratories performance. A guide and/or instructive videos on 1) how the EURLs can manage the system and 2) how the participant must enter their data will be prepared.

Planned EUPTs 2019: EUPT-CF13, FV21, AO14 and SRM14

Expected EUPTs 2020: Five EUPTs.

Maintenance during the PT:

When the EUPTs are running the result submission will be supervised by the AIT department at the University to help and support the participants if required. After deadline for result submission, the data will be extracted from the database for statistical processing. This is done by the individual EURLs.

Expected Output: Each year; Draft report, final report, certificates to the participants, 20-50 kg Test Item with incurred pesticide residues and 20-50 kg of Test Item without pesticide residues per EUPT.

Duration: On-going

Sub-activity 1.03 Method development employing Accurate Mass Spectrometry

Objectives: Further development of screening method using Accurate Mass Spectrometry

Description:

1.03.1 Development and validation of Accurate Mass Spectrometry screening methods for analysis of cereals

The EURL has developed and validated a screening method for pesticides in cereals by LC-QTOF-MS and GC-QTOF-MS during 2012-2017. The method is based on QuEChERS extraction and clean-up, and is to day validated for around 500 pesticides during 2012-2017. In 2018 single standard solutions of all pesticide standards available in the laboratory (approximately 700 compounds) were prepared. All these standards have been analysed on GC-QTOF and for those compounds that are amenable to this technique both the absolute and the relative retention times to a set of marker compounds has been determined and mass spectra have been recorded. Thus the utilization of the single standard solutions, prepared in 2018, has been initiated in order to improve the screening search profiles.

When performing LC-QTOF based screening analysis a targeted search I performed against a personal compounds database and library (PCDL). The performance of the screening analysis therefore depends on the availability and the precision/quality of the data in the PCDL, including not only the accurate mass of the molecular ion but also compound and method specific retention times and compound specific mass spectra. The PCDL provided by the instrument manufacture does not include retention times and only contain spectra for less than half of the compounds included. Further, some of the spectra included in the provided PCDL are of low quality and does not allow for positive identification of findings. Thus improving the data included in the PCDL will improve the performance and reliability of the LC-QTOF based screening method.

In 2019, utilizing the single standard solutions, absolute and relative retention times will be determined using the LC-QTOF based screening method. Spectra will also be recorded. Using the absolute and relative retention times and mass spectra recorded during 2019 the work with adding and optimizing the data on retention times and mass spectra in the PCDL can be initiated.

1.03.2 Increasing method performance of screening method using Accurate Mass Spectrometry and Applicability simultaneous screening and quantitative analyses by GC accurate mass instrumentation

The EURL-CF has purchased a GC-Exactive instrument. GC-Exactive is equipped with Orbitrap technology for high resolution mass spectrometry. The instrument has a mass resolution of 60,000 (at mass 200), which gives high mass accuracy, which generally provide a mass error <1 ppm for almost all GC amenable substances. Thus the performance of this instrument is much better compared to the old GC-QTOF instrument, that has a mass resolution at 15,000 and difficulties achieving mass error <5 ppm which is the identification requirement in SANTE/11813/2017. Furthermore, the Orbitrap technology has the additional advantage that the mass resolution is higher at low masses, which is an advantage when screening for the generally small molecules generated in the GC from e.g. pesticides. Additional, the sensitivity of the GC-Exactive is higher than for the GC-QTOF instrument and finally, the linear and dynamic range of the Orbitrap instrument are also far better. The new instrument is therefore expected to give more opportunities for screening in combination with quantitative analysis. Having this new Orbitrap available makes will allow us to test its applicability for pesticides residue analysis and whether it provide data that can be used for both screening and quantitative purposes.

Thus, in 2019 the database with exact masses of GC-HRMS pesticide fragments, that is created and updated together with EURL-FV, will be updated for approximately 30 pesticides. Using the updated

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database a method for combined screening and quantitative determination of pesticide residues in cereals will be development and sought validated for around 100 pesticides. When selecting compounds to be include in the study the focus will be on pesticides included in the MACP for those that are to be quantified and for those that are only to be identified the focus will be on pesticides not included in the MACP.

1.03.3 Development of a method for quantification of pesticides from marker compounds using Accurate Mass Spectrometry

Based on a demand and wish for including more and more target compounds in the pesticide residue control, but without the need to have the analytical standard available, the EURL-CF performed in 2018 a study were it was examined whether it was possible to semi quantify residues of compounds for which the standard is not available but knowledge on the relative between concentration and response for the compound in question is known as well as the concentration to response relation for a number of marker compounds. The scenario could e.g. be that the standard was not available at the time of analysis but have become available later (retrospective quantification). This semi-quantification was tested using marker compounds, i.e. compounds for which calibration curves are generate in all analytical runs, and then by relating the responses for these marker compounds with the response of a standard of the compound of interest, analysed in another analytical run.

In 2019 and 2020 the work with quantification without standards will be continued with the aim to test the robustness of the approach, e.g. over time and if applied to another instrument (e.g. GC-QTOF vs GC-orbitrap or LC-QTOF vs LC-QQQ) or upon changes in e.g. LC-eluent program and GC oven temperature programme. The relationships between the responses of the marker compounds and the compounds in question may vary depending on the condition of the instrument and/or instrument settings.

Expected Output: Reports uploaded to CIRCA platform
Duration: 2018-2020

Sub- activity 1.04 Studies on possibilities to include pesticides in multimethod for cereals/feeds

Objectives: Studies on possibilities to implement pesticides in multi residue method and gaining knowledge on achievable LOQs

Description: Inclusion of more pesticides in the quantitative LC-MS/MS and GC-MS/MS methods is a constant request. New pesticides are authorised for use in EU, the number of pesticides included in the MACP are generally expanded, the pesticides relevant in regard to Regulation 669/2009 is changing etc. Furthermore, EFSA is in need of lower LOQs to refine their intake calculations and this will be possible due to more sensitive GC-MSMS and LC-MSMS instruments. Consequently, the work on optimising the multi residue method for cereals and feeds will therefore be continued.

1.04.1 Study on the possibility to include new pesticides/metabolites in multimethod for cereals 2019 and 2020

Each year a validation study will be performed using the QuEChERS method or other relevant multi methods for around 20 pesticides. The pesticides chosen will mainly be from the EFSA Progress report MRL review (10/06/2013), MACP, the working document and new authorisations. The final decision on which pesticides to include will be based on last minute information on the most relevant pesticides to cover. However, e.g. the following pesticides would be of interest: Chlordecone, clethodim sulfoxide, clethodim sulfone, endrin ketone, fenpicoxamid and its metabolite X12326349, oxathiapiprolin, mefentrifluconazole, spiromesifen-enol. The study will additionally enable the EURL

to contribute to the Art. 12 process by establishing LOQ for the pesticides in question. The study will include minimum three cereal matrices and be spiked at concentration level at ≥ 0.005 mg/kg. The validation data will be generated, converted in the specific format and uploaded to the common database. This information is important for EFSA and the official laboratories.

1.04.2 Study improve multimethod on fish feed by a newly developed multimethod.

A follow up study will be performed on the validation performed in 2016. Members of your research group have developed a multimethod for difficult matrices which is especially well-suited to fatty matrices. The method is a further development of the QuEChERS method involving heptane as additional solvent. The fat content is extracted to the heptane phase together with the more non-polar pesticides. These pesticides are more robust against influence from clean-up, and allow for stronger clean-up in order to remove fat from the extracts. The methods will be tested on a high fat fish feed (fat content $>20\%$). The pesticides included will primarily be selected from the MACP and Directive 2002/32/EC and the spike will be performed at 3 concentration levels ≥ 0.005 mg/kg.

1.04.3 Study on the possibility to include feed matrix, soya and rape seed, as commodities in a newly developed multimethod.

Soya and rape seeds are frequently used for feeds. They are difficult matrices with high fat content. If the validation in 1.03.2 demonstrates good results, the applicability of the method for analysis of soya and rape seed will be studied. The pesticides included will primarily be from the MACP and Directive 2002/32/EC and the spike will be performed at 3 concentration levels ≥ 0.005 mg/kg.

1.04.4 Study on the possibility to lower LOQ in rice based baby food to 0.001 mg/kg.

A follow up study will be performed on the validation done in 2015. EURL-CF has purchased a more sensitive GC-MSMS instrument and we expect to be able to achieve lower LOQs for some compounds, than in the earlier study, perhaps down to 0.001 mg/kg. The more sensitive instruments may also make it possible to exclude the previously necessary concentration step. EURL-CF will in 2019 receive a new ion source for the GCMSMS instrument that is expected to provide an even better sensitivity, partly because the surface of the ion source has been changed, but especially because it will be possible to use a lower electron voltage to charge the pesticides. Lowering of the voltage will result in less fragmentation in the ion source and thereby also in a higher response for the precursor ion. The derived product ions will then also show higher response resulting in increased sensitivity. This is in particular relevant for some of the more problematic compounds as the chloro organic pesticides (e.g. dieldrin, chlordane and hexachlorbenzene), which are especially prone to fragment in the ion source (maybe into >50 ions). For this type of compounds this feature is highly relevant to implement.

The study will include not only substances that are relevant in the context of COMMISSION DIRECTIVE 2003/13/EC (amending Directive 96/5/ EC on processed cereal-based foods and baby foods for infants and young children), but also pesticides from the BfR list of substances that can be expected to be transferred from feed to milk. However, as starting point chlorpyrifos, emamectin, ethoprophos, fluquinconazole, alpha-cypermethrin, gamma-cyhalothrin) with full residue MRM definitions will be included. Metabolites that can only be analysed by SRM will not be included in this project. As many of the pesticides from DIRECTIVE 2003/13/EC, the BfR list or finding in the European monitoring programmes will be included if already validated in other methods e.g. for cereals and consequently and standards are available in the laboratory.

Expected Output: Reports and updates of the data pool

Duration: 2019-2020

Sub-activity 1.05 Survey of pesticide residues in rice based baby food.

Objectives: Pilot monitoring of pesticide residues in rice based baby food sample in EU

Description: To monitor the pesticide residues in baby food in EU, the EURL-CF will analyse 25 rice based samples collected in different Member States. Either the NRLs will be asked to collect two samples and ship it to the EURL-CF for analysis or the samples will be purchased in stores or on internet. The samples will be analysed by the above described validated multi method.

Expected Output: report

Duration: 2020

Sub-activity 1.06 Development of method for analysis of residues of co-formulants

Objectives: Gain knowledge on occurrence of residues of co-formulants in food and feed

Description:

In 2018 a project was initiated to gain knowledge on the occurrence of residues of co-formulants (additives/adjuvants/co-formulants) in food and feed. Co-formulants are used for the preparation of the pesticide formulations (or added prior to spraying) in order to obtain a product which is practical, safe and efficient to use. Co-formulants aid e.g. the distribution, uptake, stability and efficiency of the active ingredient (a.i.). More than 1500 adjuvants including co-formulants are represented in authorised plant protection products. Many of these are mixtures of several compounds, thus the number of compounds in use as co-formulants is high. In 2019 a study will be initiated at the institute, outside the EURL framework, aiming to generate a list of co-formulants authorised for use with formulations authorised for use nationally. By gathering information on amounts consumed, physical/chemical and toxicological data it will aid the evaluation of which adjuvants are most likely to be of relevance for human and/or animal safety, due to likely occurrence of residues of toxicological relevance. Co-formulants belonging e.g. to the group of solvents of low vapour pressure are not likely to leave residues at the time of neither harvest nor consumption.

To our knowledge studies on whether residues of adjuvants, e.g. surfactants, occur on harvested crops are not available. However the study EURL-CF performed in 2019 show that residues of some of the ingredients in the selected test formulations do occur in detectable levels on treated hay and it is therefore found relevant to continue the work.

In 2020 the EURL-CF will continue the work on studying the occurrence of residues of co-formulants on food/feed. The above mentioned list of co-formulants used nationally, will aid the selection of a number of co-formulants, which are widely used and evaluated likely to leave detectable residues, and analytical methods will be sought developed for these selected co-formulants. Selected samples of food/feed will then be analysed for residues using the developed method. Generally residues are assumed most likely to occur on commodities treated with plant protection products at a time where the eatable parts are already formed and on eatable parts with a large surface area.

Expected Output: Analytical method for commonly used co-formulants and a report describing the employed extraction and analytical method.

Duration: 2019-2020

Sub-activity 1.07 Cooperation with other EURLs

Objectives: Optimize utilization of resources; enhance mutual exchange of knowledge and experience.

Description: To utilize the resources granted to the EURLs on pesticide residues, each EURL has different horizontal task that covers all EURLs. This includes the EURL portal, CIRCA domain, PT result submission database and webpage etc. and the Scientific Group. To coordinate the activities meetings are organized and emails are used. Two coordination meetings are foreseen. The meetings will probably be held in Spain, one of them in continuation of the Scientific Group meeting.

Expected Output: Not measurable, but short minutes from meetings will be written

Duration: 2019-2018

Sub-activity 1.08 Administration and accreditation

Objectives: Fulfilment of administrative duties as well as accreditation requirements.

Description:

1.08.01 Administrative duties such as drafting budget and work programme, as well as compilation of annual technical and financial report, will be performed according to the requirement issued by the Commission.

1.08.2 Maintenance of in-house QA/QC activities in according to ISO 17025 accreditation of all analytical work done within the EURL and ISO 17043 in relation to the proficiency test organized by the EURL. Next audit by the Danish Accreditation Body DANAK will be in May or June 2019.

Expected Output: Budget 2019-20, work programme 2019-20, financial report 2019 and 2020, Technical report 2019 and 2020, and retention of accreditation.

Duration: on-going

100% financed by DTU and not included in the budget

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.*
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- *Art. 94.2.g Providing information on relevant national, Union and international research activities to national reference laboratories.*

Sub-activity 2.01 Providing technical and scientific support to NRLs

Objectives: Service to NRL on request – knowledge sharing.

Description: NRLs occasionally contact the EURL and ask for advice e.g. on purchase of new instrument, analytical problems, mainly via mails

Expected Output: Short report on the number and type of requests from the NRLs

Duration: On

Sub-activity 2.02 Organisation of Joint workshop

Objectives: Enhance the skills of staff from NRLs and OfL involved in pesticide control.

Description: A joint workshop will be organised for the NRLs and OfL for pesticide residues. The workshop will be held in Copenhagen from 25-27 September 2019. Hotel rooms for 150 people are pre-booked and the venue will be at the Technical University (Oticon salen). Participation for eligible members of EU-NRLs for pesticide residues will be free of charge. We intend to invite and reimburse maximum 4 NRL participants from each EU Member State, but only 1 NRL per NRL-function. If an institution has 2 or 3 NRL-functions only 2 NRL participants will be reimbursed and institutions with 4 NRL-functions 3 NRL participant will be reimbursed. OfL will be invited but not reimbursed.

The agenda for the workshop will include results from proficiency test, discussion on coordinated monitoring programme, analytical challenges, accreditation issues and other relevant issues.

Expected Output: Workshop minutes, pdf of oral presentations, evaluation schemes

Duration: 2019

Sub-activity 2.03 Organisation of workshop 2020

Objectives: Enhance the skills of staff from NRLs involved in pesticide control.

Description: A workshop will be organised for the NRLs and OfL for pesticide residues. The workshop will be held in Copenhagen in 2020. Participation for eligible members of EU-NRLs for pesticide residues will be free of charge.

The agenda for the workshop will include results from proficiency test, discussion on coordinated monitoring programme, analytical challenges, accreditation issues and other relevant issues. One expert from each country will be reimbursed.

Expected Output: Workshop minutes, pdf of oral presentations, evaluation schemes

Duration: 2020

Sub-activity 2.04 Organisation of training courses 2019-2020

Objectives: Organisation of training courses

Description: In each of the years, 2019 and 2020, a three days training at the premises of the EURL on basic pesticide residues analyses including sample processing will be organised. The training will include hands on laboratory training on extraction, clean-up and MSMS analyses. Six NRLs will be invited and one participant from each NRL can join the training. The participants will be chosen among the EUPT Category B NRLs.

Expected Output: Pdf of oral presentations and evaluation schemes

Duration: 2019-2020

Sub-activity 2.05 Visits to NRLs

Objectives: Visit to one NRL that underperform in PTs in order to help and support them to overcome the obstacle and problems that they encounter.

Description: One NRL visit each year will be conducted to a laboratory selected in agreement with the COM, where the EUPTs results have been problematic over the last years. The task could be performed in collaboration with other EURLs.

Expected Output: Mission report

Duration: 2018-2019

Sub-activity 2.06 Organisation of webinar

Objectives: To disseminate knowledge on specific subject.

Description: One webinar on demand is intended to disseminate information to the NRLs and official laboratories in a cost effective but still interactive way will be organised. The platform from EURL-FV will be used.

Expected Output: Pdf of oral presentation

Duration: 2019-2020

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

Objectives: Support the Commission on relevant issues.

Description:

3.01.1 Information on LOQs, residue definitions and standards for Art. 12 MRL reviews, new active substances and other substances, when requested by COM.

Coordinate input for the four EURLs, or provide information to EURL-SRM for coordinated input, on achievable LOQs, availability of standards and comments to suggested residue definition in connection with approval of Reasoned Opinion in connection with art. 12 reviews.

3.01.2 Assistance to COM for the EU MACP and the monitoring working document

Comments and input is given concerning the coordinated multiannual control programme in regard to choice of commodities, scope, candidate compounds, availability of standards etc. Contributions will be made on request and in connection with participation in the annual Expert Working group meeting on pesticides monitoring.

3.01.3 Contribution to the revision of the analytical quality control guidelines

Every second year an updated version of the guideline is issued and made available on the EURL website. Whether relevant improvements and adjustments should be made is an ongoing process and the document is discussed among the EURLs as well as with the NRLs/OfL network on various occasions. Suggestions for improvement/adjustments are registered and presented in connection

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with the biennially drafting of the new versions. One scientific group meeting in 2019 will be held in Copenhagen in connection with the EURL/NRL joint workshop.

3.01.4 General technical support to the Commission

On request

Expected Output: Various mails and brief reports

Duration: 2019-2020

Sub-activity 3.02 Collaboration with European and international organisations (EFSA, CEN, ISO, ...) and Third Countries

Objectives: Scientific support to European and international organisations when relevant.

Description:

Comments to EFSA on LOQs, standards and methods at the stage of the draft reasoned opinion. Input will be provided on achievable LOQs, availability of standards and comments to proposed residue definitions in connection with approval of Draft Reasoned Opinion (art. 12 reviews) and other matters.

Expected Output: Various mail and brief report

Duration: 2018

Sub-activity 3.03 Participation in symposiums, workshops and seminars for the dissemination of scientific information.

Objectives: To promote EU and the EURLs(-CF), disseminate information on activities and scientific results as well as to upgrade the knowledge and skill of the EURL staff in order to support the Commission with the latest knowledge.

Description: Participation in the International workshop and symposiums by the staff of the EURL-CF

Latin American Pesticide Residue Workshop (LAPRW2019), Foz do Iguazu, Brazil,
5-8 May, 2019 (2 persons)

RAFA 2019, Prague, Czech Republic, 5-8 November 2019 (1 person)

European Pesticide Residue Workshop (EPRW2020), Granada, Spain, May 2020 (2 persons)

10th International Workshop on Proficiency Testing, UK, 2020 (1 person)

Expected Output: Pdf file of oral and/or poster presentations

Duration: 2019-20

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 Investigation on pesticide stock solutions and pesticide standard mixtures

Objectives: To investigate if the vendors of pesticide standard have interest in making e.g. stock solution of pesticides or tailored pesticide standard mixtures commercially available and the laboratories are interested in buying them

Description: The NRL and OfL have a big work burden allocated to prepare standard mixture from neat standards, because they analyse for so many different pesticides, typically >300. The neat standards must be dissolved to stock solutions at e.g. 1mg/ml and relevant mixtures of compounds then combined for use of e.g. calibration of the instruments. If these mixtures could be purchased this would save a lot of time for the laboratories. However, there are no standardised mixtures and each laboratory use their own mixtures based mainly on tradition in their laboratory. Therefore, the possibility of buying stock solution could be another approach. Then the biggest burden, which is weighting the neat standards, could be eliminated. This approach gives the laboratories access to single standards available for confirmation. However, the first step would be to find out whether the vendors are willing to produce the solutions and how it will affect the price. If the vendors have interest in the project, a questionnaire will be send to the NRLs and OfL laboratories to scrutinize if they are willing to buy solutions instead of neat standards, and then which kind of solutions; stock solution or mixtures, which solvent, which concentrations, the interest and/or possibility to pay extra to avoid the work burden to prepare in the laboratory. The results from the survey will then be handed over to the vendors for them to decide whether they see it as business opportunity they will pursue. However, in the big perspective it would be assumed that weighing a big amount of

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pesticides, e.g. several grammes of pesticides will be easier and more precise, than having all the laboratories to weigh 10-25 mg for each compound they have in there scope.

Expected Output: Report of the result from the questionnaire and the expression of interest from the vendors.

Duration: 2019-2020

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REQUIREMENTS RELATED TO OTHER LEGISLATION

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

Sub-activity 5.1 (*name of Sub-activity*)

Objectives: Description: Expected Output: Duration:
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REMARKS

(if necessary)
