

WORK PROGRAM
FOR THE
EU REFERENCE LABORATORY
FOR PESTICIDE RESIDUES REQUIRING
SINGLE RESIDUE METHODS

Time: January-December 2015

LEGAL FUNCTIONS AND DUTIES

The functions and duties of the EU Reference Laboratory are described in Article 32 of the EC Regulation No 882/2004.

Contents:

- A. General tasks**
- B. Development and validation of analytical methods**
- C. Quality assurance and quality control including the organisation and implementation of proficiency tests**
- D. Technical and scientific support to NRLs, OfLs and third country labs**

A. General Tasks

A.1 EURL coordination

Tasks: Inter-EURL-meetings (eligible as missions), in some cases in presence of DG-SANCO representatives, will be carried out with the aim to discuss, plan, coordinate or evaluate EURL-activities such as the preparation of work programs, EUPTs or web-applications. In certain cases online-meetings or tele-conferences will be carried out. Date and place of these events will be decided later.

Period: To be decided later following consultations with the other EURLs and/or DG-SANCO.

Deliverables: Minutes of meetings prepared by one of the participating EURLs

A.2 Preparation of annual (financial, technical and PI ex-post) reports for 2014, Preparation of and negotiations for fixing the work program and PI ex-ante table for 2016

Period: March 2015 and July-December 2015

Deliverables: Reports, Work Program in August 2015; PI-table as requested

A.3 Cooperation with International Organizations

Tasks: Cooperation with Int. organizations such as EFSA, the Codex Committee on Pesticide Residues (CCPR), CEN, FAO/IAEA will continue as necessities arise. If requested by DG-SANCO, documents will be revised or missions to attend meetings will be conducted.

A.4 Joint EURL-Website: upgrading, maintenance, programming (HORIZONTAL task for the benefit of all 4 EURLs)

Tasks/Period/Deliverables: see below

Background: Following an agreement between the COM and the other 3 EURLs on pesticides the EURL-SRM has introduced a Joint EURL-Website for the four pesticide EURLs (www.eurl-pesticides.eu). The Joint EURL-Website aims to facilitate the dissemination of information to NRLs and OfLs in an efficient, timely and transparent way. It consists of a joint portal-website that is administered by the EURL-SRM as well as by 4 individual websites that are administered by the 4 respective EURLs.

Tasks: In 2015 the joint portal-website and the individual web-sites of the EURLs will be further upgraded, gradually filled with new information and existing links, overview-sites as well as documents will be updated. Missing features will be gradually implemented considering the needs and suggestions by DG-SANCO, the 4 EURLs and the lab-Network.

Period: Throughout 2015

Deliverables: (a) updated links and pages within the joint portal-website and the SRM-website; (b) updated version of the calendar-site; (c) a user-friendly and flexible "Display Time"-function for the Pinboard- and Announcement-area allowing the administrators to choose the date of display and removal of an entry; (d) publicly available lists or maps of the individual NRL-

networks of each EURL (preferably presented at the EURL DataPool-site but linked from the Joint EURL-Website).

A.5 EURL-DataPool Service

Background: Following an agreement between the COM and the 4 EURLs, the EURL-SRM has installed an “**EURL-DataPool Service**” entailing numerous interlinked databases with information of practical interest to the network-laboratories (www.eurl-pesticides-datapool.eu). The EURL-DataPool is administered by the EURL-SRM as a horizontal activity and aims to store information about the entire network of laboratories working in the area of pesticides, to illustrate, and at the same time, strengthen the laboratory network, to facilitate the conservation of knowledge about pesticides, and to offer COM, EFSA, EURLs, NRLs and OfLs fast access to valuable information that can be used to assist decision-making and strategic planning. Special focus is being placed on the generation, collection and evaluation of experimentally-obtained data generated by various laboratories including the EURLs (e.g. MS/MS-transitions; validation data, stability data of compounds).

Tasks / Deliverables: see table below;

Period: throughout 2015 at www.eurl-pesticides-datapool.eu and/or www.eurl-pesticides-test.eu

List of databases within the EURL-DataPool-Service

| Database/Website | Task | Deliverables | Examples where DB is used for/interlinked with |
|-----------------------------|--|---|--|
| EURL-DataPool | Transfer of DBs (see below) from www.eurl-pesticides-datapool.eu to www.eurl-pesticides-test.eu (based on the state-of-the-art .NET 4.0-Framework). This activity involves extensive redesign and programming of databases and web-applications. | Gradual upgrades and updates throughout 2015 and beyond | See below |
| Method Validation DB | Data collection on experimental details and recovery rates achieved from various labs using various methods (e.g. QuEChERS, QuPPE, QuOil, SweEt) and its import into the DB. This includes data submitted by EURL-SRM, -FV, -CF and -AO. | Gradual updates/upgrades throughout 2015 and beyond | a) “Art. 12” activities, b) Pesticides DB, c) Pesticide Ranking List (PeRL) |
| Analytical Methods DB | Data collection on various methods and its import into the DB (needed in the background for Stability DB, Method Validation DB) | Gradual updates/upgrades throughout 2015 and beyond | Method Validation DB |
| Pesticides DB | Generation or collection of further data for the characterization of pesticides (e.g. GC-, LC-amenability, analytical behavior, GC-MS-spectra, GC-MS/MS-transitions; exact masses, solubility in acetonitrile) and import into the DB. This includes the creation of new entries for pesticides and metabolites not yet in the DB. | Gradual updates/upgrades throughout 2015 and beyond | a) “Art. 12” activities, b) Pesticide Ranking List (PeRL), c) Method Validation DB, d) Stability of Compounds DB |
| Stability of Compounds DB | Collection of more stability data on pesticides/metabolites and import into DB | Gradual updates/upgrades throughout 2015 and beyond | Pesticides DB |
| Pesticide Authorizations DB | Data collection and updating as well as import into the DB of information about the authorization of pesticides in the EU and some third countries | Gradual updates/upgrades throughout 2015 and beyond | Pesticide Ranking List (PeRL) |
| Commodities DB | Data collection on commodities and import into the DB | Gradual updates/upgrades throughout 2015 and beyond | Validation DB |

| Database/Website | Task | Deliverables | Examples where DB is used for/interlinked with |
|----------------------------|---|---|--|
| Lab-Network DB | Permanent updating of lab-specific information (lab contact data, lab-functions, fields of work, email-addresses of contact persons, instrumentation available, tasks within the frame of official controls (import controls, scope, etc.) | - up-to-date email-lists of lab contact persons of all NRLs and OfLs - <u>only for EURL-members</u> : lab-list reflecting the individual EURL-lab-network; - <u>only for NRL-members</u> : lab-list reflecting the individual NRL-lab-network for each country - export-function (csv-format) of network-related data (e.g. lab-functions; emails of contact persons) - "List of obliged labs" for participation in EUPTs in 2015 | Convenient compilation of customized lab-contact lists (e.g. for invitations to EURL-activities such as EUPTs, Surveys, for the dissemination of information). Compilation of the "List of obliged labs" for participation in EUPTs |
| EUPT-Archive DB | Import of EUPT-data (FV16; CF8; AO9; SRM9) into the DB; design and programming of new online views for EURLs and NRLs allowing them to view the EUPT results of the labs within their network. Evaluations, that are necessary for the planning of future PTs or the establishment of general evaluation rules, will be discussed and elaborated in close cooperation with the other 3 EURLs and 3 external experts. | Gradual updates/upgrades throughout 2015 and beyond, new online views | Evaluation of long-term PT-performance of labs or countries, "SRM-PinBoard list" |
| MRL Residue Definitions DB | - Updating of EU and Codex MRL residue definitions; - Updating of conversion factors within DB | Gradual updates/upgrades throughout 2015 and beyond | a) "Art. 12" activities, b) Pesticide Ranking List (PeRL), c) Pesticides DB |

B. Development and Validation of Analytical Methods

B.1 Quick Polar Pesticides Method (QuPpe Method)

Background: The EURL-SRM has developed a method for the simultaneous analysis of several highly polar pesticides not amenable to multiresidue procedures. The method, which is employed by various OfLs involves a common extraction followed by LC-MS/MS analysis.

Task: Further method development activities will be conducted with the aim to expand, where possible, the scope of the method by additional highly polar pesticides and metabolites such as e.g. Bromide, Bromate, Propamocarb-N-desmethyl, Propamocarb-N-oxide. Main focus will be to find ways to improve chromatographic behavior for some compounds already in the method or to accommodate as many compounds as possible within the same LC-runs. Alternative LC-separation approaches will be tested. Activities to pursue CEN method standardization will continue.

Period: throughout the year

Deliverables: Updated version of the QuPpe method in the Website in H1 2016

B.2 Solutions for pesticides requiring modified MRMs

Background: Several pesticides and legally relevant metabolites are known to pose problems in analysis and are thus considered "difficult" or non-amenable to multiresidue methods. In many cases analysis is possible following certain modifications of traditional multiresidue methods. Such modifications may entail adjustment of pH or addition of chemicals to prevent degradation or improve extractability, temperature control, special measurement conditions or cleavage reactions to release conjugates etc..

Task: Studies will be conducted to improve the analysis of captan, folpet, dichlofluanid, tolylfluanid and dicofol in commodities of plant origin (in the light of the new residue definitions

including the metabolites) as well as of ethoxyquin in commodities of animal origin considering its metabolites as far as they are available.

Period: throughout the year

Deliverables: Reports in Website in Q1 2016

¹⁾ **Note/disclaimer:** This activity may be shifted to 2016 in case of insufficient budget

B.3 Studies on the analysis of triazole metabolites in fruits and vegetables

Background: Triazole-pesticides are one of the largest groups of pesticides entailing more than 30 compounds. These pesticides have in common that they can metabolize to the following 1,2,4-triazole derivatives :1,2,4-triazole (T), triazole alanine (TA), triazolyl acetic acid (TAA) and triazolyl lactic acid. These metabolites are of high interest for risk assessment and EFSA repeatedly requested their inclusion in the EU-multiannual Control Program (MACP). Their analysis is however extremely difficult due to their high polarity and the very low molecular weight.

Task: The EURL-SRM has established a sensitive method based on ion-mobility mechanisms in 2014. In 2015 further samples will be analyzed to check for residues, especially for the newly introduced triazolyl lactic acid.

Period: throughout the year

Deliverables: Reports in Website in Q3 2015 and follow up H1 2016

B.4 Further studies on the analysis of selected volatile pesticides in F&V by QuMFu1)

Background: Various highly volatile pesticides are employed in agriculture and crop storage as fumigants. Such pesticides are typically non-amenable to multiresidue methods and they are thus rarely analyzed by official control laboratories. Simple methodologies are thus required. In 2013 and 2014 the EURL-SRM has established a method for phosphine by applying Headspace-GC-MSD and a quick multi-method for fumigants (QuMFu) for the simultaneous analysis of 15 different fumigants in cereals and dried fruits by applying GC-MS/MS (see EURL-Portal-website for reports).

Task: The EURL-SRM will conduct experiments to check the influence of sample processing on fumigant losses and if an up-scaling of the QuMFu method is necessary when applied to fruits and vegetables (e.g. increase of the sample weight from 10 g to 50 g). The resulting method will then be validated for fruits and vegetables. Priority will be given to commodities which are included in the EU coordinated control program (e.g. bananas), several fruits and vegetable samples will be analyzed by the developed method.

Period: throughout the year

Deliverables: Reports in Website in 2016

¹⁾ **Note/disclaimer:** This activity may be shifted to 2016 in case of budget cuts

B.5 Testing the stability of pesticides in stock solutions by quantitative NMR (qNMR)

Background: Checking the purity and stability of neat standards and stock solutions is time consuming and expensive. There is a need to investigate alternatives to the current approaches (mass spectrometry techniques) to simplify and speed-up work in the future. NMR technology has experienced major advancements in recent years and can be applied for purity assessment of neat standards and used to characterize their compositions. Quantitative proton NMR

(qNMR) has been gaining popularity e.g. in quantitative drug analysis and quality control as it produces qualitative and quantitative information simultaneously. One major advantage is that the reference standard does not need to be the identical material, but just one universal standard unrelated to the target analyte. This considerably reduces the costs and logistic efforts of a pesticide laboratory. Additionally, qNMR has been reported to be highly precise and accurate, thus reducing the number of replicate measurements required. The non-destructive nature of this technique makes it possible that the same samples are kept for measurements over the course of several years, e.g. in flame sealed NMR tubes.

Task: The EURL-SRM will perform experiments by qNMR to check the purity and/or stability of stock solutions (solvent: acetonitrile) over a time course of 5 years for 50 pesticides. The qNMR-measurements will be performed at least twice a year.

Period: throughout the year

Deliverables: Results of the stability experiments will be published throughout the duration of the experiment in the Stability Database of EURL DataPool.

B.6 Experiments to be conducted within the frame of the “Art 12”

Background: One of the highest priorities of DG-SANCO is the re-evaluation of MRLs and residue definitions within the frame of Art. 12 / Reg. 396/2005. In 2015 the EURLs will be frequently consulted to evaluate pesticides under review in order to express their views as regards LOQs and residue definitions. Circa 50 pesticides will be expectedly reviewed in 2015 by EFSA. In cases where analytical data is not sufficient or not available it has to be generated as far as practicable. **Where residue definitions contain metabolites, they often require SRM-methods, thus falling within the responsibility of the EURL-SRM.**

Where no standards of pesticides or metabolites are available, they have to be requested from pesticide companies.

Task: Based on the experiences acquired in Art. 12 evaluations from 2013 and 2014 H1 metabolites of pesticides, which are part of residue definitions are in many cases SRM-compounds. The EURL-SRM will order missing analytical standards of pesticides and metabolites and conduct experiments to check their analytical behavior, the MRM amenability and the chromatographic behavior, perform basic validation experiments and determine the achievable LOQs always taking into account the proposed residue definition and the capabilities of OfLs.

Estimated man-days for activity B.6:

| Type of compound | Expected No. of compounds | Lab activities involved | | | | Sum (Working days) |
|--|---------------------------|-------------------------|------|-----------|----------------|--------------------|
| | | NONE | SOME | EXTENSIVE | VERY EXTENSIVE | |
| <i>Estimated man-days for 10 compounds</i> | | 0 | 15 | 25 | 80 | |
| requiring NO Lab Activities | 25 | | | | | 0 |
| requiring SOME Lab Activities* | 10 | | 15 | | | 15 |
| requiring EXTENSIVE Lab Activities** | 10 | | | 25 | | 25 |
| requiring VERY EXTENSIVE Lab Activities*** | 5 | | | | 40 | 40 |
| | | | | | SUM | 80 |

* e.g. for analytes requiring minor modifications of MRM-methods with few matrix groups being involved

** e.g. for analytes requiring minor modifications of MRM-methods with many matrix groups being involved OR non-MRM-amenable analytes (parent or metabolites) with few matrix groups being involved

*** e.g. for challenging non-MRM-amenable analytes (parent or metabolites), with many matrix groups being involved

Period: throughout the year

Deliverables: Reports to EFSA and/or DG-SANCO within the time frames agreed

C. QA/QC (Quality Assurance and Quality Control)

C.1 QA/QC

Task: Jointly with the other EURLs the EURL-SRM will, assist the Commission by revising the Document N° SANCO/12571/2013 der EU, implemented by 01/01/2014

Period: Q1-Q3 in 2015

Deliverables: revised document

C.2 Preparation of a list showing which labs are obliged to participate in EUPTs in 2015 (horizontal task for the benefit of all 4 EURLs)

Task: based on the information provided by the NRLs, concerning the commodity scope covered by each lab within its network a comprehensive list of all labs obliged to participate in pesticide-related EUPTs in 2015 will be published. Prior to generating this list the NRLs will be asked to update the commodity-scope profiles of the labs within their network and the EURL-DataPool will be updated accordingly. This list will be distributed to all NRLs which are responsible to check its correctness/completeness and report any errors. The pesticide scope of the labs will not be taken into account in this list. Labs not participating in an EUPT, due to limitations in the pesticide scope will have to give explanations during the registration period of the respective EUPT.

Period: Early in 2015

Deliverables: "List of labs obliged to participate in pesticide related EUPTs in 2015" in Q1 2015

C.3 EU Proficiency Test SRM 10 (in cooperation with EURL-CF)

Task: A proficiency test covering single residue methods (SRM) will be performed. The intention is to use a commodity of plant origin that is also relevant as feed. Maize has been chosen as commodity, and this PT will be conducted in collaboration with the EURL-CF. In case of Ad-hoc needs to focus on a different commodity, the commodity might have to be changed following consultation with DG-SANCO.

All relevant documents and instructions will be distributed to the participants through the EURL website. Participant registration and data collection will be conducted using an online tool provided by the EURL-CF. Each participant will receive a detailed report summarizing the PT-scope, results, data treatment and additional information of the methods employed by the participants.

Prior to, during and after the EUPT, the EURL-SRM will furthermore address any PT-related requests of participating labs. Underperforming NRLs will be directly assisted and at request provided with information regarding OfLs within their network.

Certain tasks associated with the EUPT-SRM10 will or may be subcontracted to other parties e.g. purchase and preparation of test material, standards, shipping material and dry ice.

Period: H1 of 2015

Deliverables: Preliminary report within 4 weeks of PT deadline; Final Report of EUPT by H1 2016

C.4 Attend joint meeting to discuss and evaluate EUPT results, Establish criteria to assess PT-underperformance and overall PT-performance (horizontal activity)

Background: EUPTs are a very valuable tool to assess the performance of laboratories in pesticide residue analysis. In the case of individual PT-results underperformance is well defined by the absolute z-score. When looking at multiple results generated within one PT or throughout many PTs, suitable underperformance criteria are yet to be set, considering both analytical results and scope. In case of underperformance corrective and follow-up actions are indicated.

Task: In cooperation with the other three EURLs the criteria to evaluate whether a laboratory was underperforming in EUPTs will be further revised.

Period: H2 of 2015

Deliverables: Minutes of the meeting by December 2015 by one of the EURLs (to be decided), Updated version of the General EUPT Protocol including the new criteria or separate paper describing the new concept (to be decided). To be published if and as soon as agreement has been reached.

C.6 Update the “SRM-Pinboard” and promote concept of sub-contracting analyses within the Lab-Network

Background: Within the frame of official controls, SRM analytes are less frequently analyzed compared to MRM analytes. OfLs often complain that limitations in the available resources prevent them from establishing suitable methods for the analysis of SRM-analytes or applying such methods in case they are established. Lab-cooperation and subcontracting of analyses will help to reduce the overall number of labs, that will have to establish or apply SRMs thus improving overall efficiency and frequency of analysis of SRM compounds.

Task: Following the established performance criteria, the list of laboratories considered as proficient for the analysis of individual SRM-compounds will be updated (“SRM-Pinboard” = Pool of Proficient SRM-Labs) as soon as new PT results become officially available or whenever a lab wishes to enter the list or change its status. The updated list will be published in the EURL-portal.

Period: H2 of 2015

Deliverables: Updated list to be published within EURL-portal, whenever changes are requested

D. Technical and scientific support to DG-SANCO, EFSA, NRLs, OfLs and third country labs

The technical support to DG-SANCO and to EFSA (on behalf of DG-SANCO) is of high priority to the EURL-SRM and is among others accomplished through e-mail communication, participation in meetings, revision of documents, and drafting of opinions. Upon invitation EURL-SRM staff may participate in various meetings organized by COM or EFSA. NRLs, OfLs and third country labs are technically supported through EURL-Web-Portal and the EURL-DataPool (A.2). Further assistance is also provided via personal communication, presentations in

conferences, workshops and trainings (see D.2). The comprehensive Lab-Network-DB further contributes in strengthening the network (see A.2).

D.1 Technical and scientific support to DG-SANCO and EFSA

Tasks/Period/Deliverables: See table below:

| Task | Activities | When | Deliverables |
|---|--|---|--|
| Support DG-SANCO in drafting the MACP 2015-17 | <ul style="list-style-type: none"> - Participate in meetings (e.g. in Brussels); - Collect and evaluate data and prepare a new "Pesticide Priority List"; - Read/Revise documents; - Communicate with DG-SANCO, EFSA and other stakeholders | As arranged/agreed with or scheduled by DG-SANCO | Prepare/Provide "Pesticide Priority List" opinions, assessments, advices and revisions as required |
| Support EFSA within the frame of the of the Networking Group on Pesticide Monitoring | <ul style="list-style-type: none"> - Participate in one or more meetings (e.g. in Parma); - Read/Revise documents; - Communicate with DG-SANCO, EFSA and other stakeholders | As arranged/agreed with or scheduled by EFSA | Prepare/Provide opinions, assessments, advices and revisions as required |
| Support to EFSA and DG-SANCO in activities concerning re-evaluation of pesticide MRLs according to Article 10 and 12 of Reg. 396/2005/EC* . 50 compounds will have to be expectedly evaluated by the EURLs in 2015 on behalf of EFSA, plus some additional pesticides on behalf of DG-SANCO. | <ul style="list-style-type: none"> - Prepare an expected time schedule and coordinate the division of tasks among the 4 EURLs - Collect/Evaluate existing information from EFSA, DataPool and other sources; - Compile the available data in a summarized form to facilitate decision-making by the other 4 EURLs as regards LOQs and residue definitions; - Collect the positions of the 4 EURLs and finalize document with joint position (coordinate among the 4 EURLs in case of disagreements); - Communicate with DG-SANCO, EFSA and other stakeholders | As arranged/agreed with or scheduled by DG-SANCO and EFSA | <p>Prepare coordinated positions of the 4 EURLs as regards the residue definitions and the LOQs of pesticides proposed by EFSA and DG-SANCO.</p> <p>Provide opinions, assessments, advices and revisions as required</p> |
| General assistance to DG-SANCO and EFSA | <ul style="list-style-type: none"> - E-mails and oral communications - Missions to Brussels, Parma or elsewhere | Throughout 2015 as required | Opinions, advices, revisions as required |

***Note:** This task does not include non-laboratory activities. These are covered by B.2.

D.2 Joint EURL Workshop for Pesticide Residues in Food and Feed

Task: A joint workshop (FV, CF, AO and SRM) will take place in Stuttgart in the second half of 2015. NRLs from all MS will be invited to attend, with the main objective to facilitate the interaction between them and the EURL-FV, -CF, -AO and -SRM. The workshop will be held during two days, and will entail technical and scientific communications regarding new activities of the EURLs and other developments in the field of pesticide residues analysis. The EURL-SRM will take over the full organization and administration of the workshop.

Period: Q3 2015

Deliverables: Financial and Technical Report by March 2016

D.3 Trainings

Task: 8 NRLs will be invited to attend a training in Fellbach. The training will cover technical aspects as regards the analysis of SRM-pesticides and exchange of experiences. Special needs and problems of the laboratories selected to participate will be considered in the design of the training program. Additional ad-hoc trainings will be conducted as required.

Period: *To be decided*

Deliverables: Technical and Financial Report

D.4 Visit of 1 NRL

Task: The NRL-SRM of one selected country will be visited by representatives from the EURL-SRM. The country will be selected in agreement with DG-SANCO giving emphasis on poor EUPT scope, performance or participation over last years as well as on poor cooperation with the EURL.

Prior to the inspection a detailed study of the EUPT results during the last years as well as the current analytical scope of all OfLs will be carried out. During the visit the possible reasons for bad PT-performance will be discussed, where applicable and advices will be given to improve performance and expand the scope.

Period: *To be decided*

Deliverables: Visit report within 6 months of the visit

D.5 Webinars and Tutorials

Background: Webinars and Video-Tutorials provide the possibility to disseminate information to NRLs and OfLs in a cost effective way.

Task: In 2015 the EURL-SRM will organize/publish at least one webinar or one video-tutorial either individually or in collaboration with other EURLs.

Period: *To be decided*

Deliverables: A feedback report will be prepared after each webinar.

D.6 Analysis of official samples, counter analysis (if required)

The EURL will ask DG-SANCO for approval of any activity this concerning and request for additional eligible budget, if required.

Task: Sample analyses if required and only after consultation with DG-SANCO

Period: *unpredictable*

Deliverables: *unpredictable*