

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

**Time: January-December 2014**

**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 meetings

**Tasks:** Inter-EURL-meetings, 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 meetings 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 Compilation of annual financial and technical reports and evaluation of PI-table for 2013

**Period:** March 2014

**Deliverables:** Reports in March 2014

**Costs:** internal funding (at the request of DG-SANCO)

### A.3 Preparation of work program and PI-table for 2015

**Period:** July/August 2014

**Deliverables:** Work Program in July/August 2014; PI-table in October 2014

**Costs:** internal funding (at the request of DG-SANCO)

### A.4 Cooperation with International Organizations

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

### A.5 EURL Web-Services: upgrading, maintenance, programming (HORIZONTAL task on behalf of and for the benefit of all 4 EURLs)

**Tasks/Period/Deliverables:** see sub-topics below

#### A.5.1 Joint EURL-Website

**Background:** The Joint EURL-Website of the four pesticide EURLs ([www.eurl-pesticides.eu](http://www.eurl-pesticides.eu)) was established by the EURL-SRM as a horizontal task and 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 2014 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. The editor-program,

which was implemented in 2007 to enable the EURLs to maintain their individual web-sites, will be replaced by an up-to-date editor with more functions and better user friendliness.

**Period:** Throughout 2014

**Deliverables:** (a) new version of editor in internal area of website; (b) updated version of the calendar-site; (c) updated links and pages within the joint portal-website and the SRM-website

## A.5.2 EURL DataPool

**Background:** An “EURL DataPool” entailing numerous databases with information of practical interest to the network-laboratories has been installed and expanded within the frame of the previous work programs ([www.eurl-pesticides-datapool.eu](http://www.eurl-pesticides-datapool.eu)). The EURL-DataPool is administered by the EURL-SRM as a horizontal activity and aims to facilitate the conservation of knowledge and to offer COM, EURLs, NRLs and OfLs fast access to valuable information that can be used to assist decision-making and strategic planning. For more background concerning the individual databases see Annex I.

**Tasks / Deliverables:** see table below

**Period:** throughout 2014 [www.eurl-pesticides-datapool.eu](http://www.eurl-pesticides-datapool.eu) and/or [www.eurl-pesticides-test.eu](http://www.eurl-pesticides-test.eu).

List of databases within the EURL-DataPool

Code	Database/Website	Task	Deliverables	Examples where DB is a) used for , b) interlinked with
5.2	EURL DataPool	Transfer of DBs (see below) from <a href="http://www.eurl-pesticides-datapool.eu">www.eurl-pesticides-datapool.eu</a> to <a href="http://www.eurl-pesticides-test.eu">www.eurl-pesticides-test.eu</a> (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 throughout 2014 and beyond	See below
5.2.1	Method Validation DB	See 5.2 plus data collection for various methods (e.g. QuEChERS, QuPPE, QuOil, SweEt) and its import into the DB	Gradual updates/upgrades throughout 2014 and beyond	a) “Art. 12” activities b) Pesticides DB
5.2.2	Analytical Methods DB	See 5.2 plus data collection for various methods and its import into the DB	Gradual updates/upgrades throughout 2014 and beyond	Validation DB
5.2.3	Pesticides DB	See 5.2 and generation + collection of further data on pesticides and import into the DB. This includes recovery data from and exact GC-MS/MS masses to be submitted by the EURL-FV and EURL-CF.	Gradual updates/upgrades throughout 2014 and beyond	a) “Art. 12” activities, b) “Pesticide Priority List”, c) Method Validation DB, d) Stability of Compounds DB
5.2.4	Stability of Compounds DB	Collection of more stability data on pesticides/metabolites and import into DB	Gradual updates/upgrades throughout 2014 and beyond	Pesticides DB
5.2.5	Pesticide Authorizations DB	See 5.2 plus data collection and import into the DB	Gradual updates/upgrades throughout 2014 and beyond	“Pesticide Priority List”,
5.2.6	Commodities DB	See 5.2 plus data collection and import into the DB	Gradual updates/upgrades throughout 2014 and beyond	Validation DB
5.2.7	Lab-Network DB	See 5.2 plus permanent updates of lab-specific information (lab contact data, lab-functions, fields of work, contact persons, instrumentation available, etc.)	- up-to-date email-lists of lab contact persons of all NRLs and OfLs - “List of obliged labs” 2014	Generate lab-contact lists (e.g. for invitations, dissemination of information), Generate “List of obliged labs”
5.2.8	EUPT-Archive DB	Import of EUPT-data (FV15; CF7; AO8; SRM8) 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	Gradual updates/upgrades throughout 2014 and beyond, new online views	Evaluation of long-term PT-performance of labs or countries, “SRM-PinBoard list”
5.2.9	MRL Residue Definitions DB	- Updating of EU and Codex MRL residue definitions; - Updating of conversion factors within DB	Gradual updates/upgrades throughout 2014 and beyond	a) “Art. 12” activities, b) “Pesticide Priority List”, 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 cyanuric acid, melamine, N-Acetylglyphosate, bialaphos. Further research will be done with aim to improve chromatographic behavior for some compounds already in the method or accommodate more compounds 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 method in Website in Q1 2015

### 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 pyridate and its metabolite pyridafol in commodities of plant origin as well as ethoxyquin in commodities of plant and animal origin considering its metabolites as far as they are available.

**Period:** throughout the year

**Deliverables:** Reports in Website in Q1 2015

<sup>1)</sup>**Note/disclaimer:** This activity may be shifted to 2015 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 group 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 (TLA, standard not yet available). 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. Previous experiments by the EURL-SRM have resulted in preliminary methods with too high LOQs.

**Task:** The EURL-SRM will perform further experiments to develop a method allowing the analysis of triazole metabolites at lower LOQs. In case of success several samples will be analyzed to check for residues. A new mass-separation technology based on ion-mobility mechanisms will be implemented.

**Period:** throughout the year

**Deliverables:** Reports in Website in Q3 2014 and follow up Q1 2015

## B.4 Studies on the applicability of qNMR to determine the purity and stability of pesticide standards (pilot study)<sup>1)</sup>

**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 to simplify and speed-up work in the future. NMR technology has experienced major advancements in recent years allowing highly precise and sensitive quantitative analyses. In principle qNMR can be used to determine the impurity profile of a substance, to characterize its composition and to investigate impurities.

**Task:** In a pilot study the EURL-SRM will perform experiments to check the applicability of qNMR to determine the purity and/or stability of neat pesticide standards or stock solutions.

**Period:** throughout the year

**Deliverables:** Reports in Website in Q1 2015

<sup>1)</sup>**Note/disclaimer:** This activity may be shifted to 2015 in case of insufficient budget

## B.5 Experiments to be conducted within the frame of the “Art 12” activity

**Background:** One of the highest priorities of DG-SANCO is the re-evaluation of MRLs and residue definitions within the frame of Art.10 and 12 of Reg. 396/2005. In 2014 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 2014 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 these are in most cases SRM-pesticides 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:** 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.5:

Type of Compounds	Expected number of compounds	Lab activities involved				Sum (Working days)
		NONE	SOME	EXTENSIVE	VERY EXTENSIVE	
<i>Estimated man-days for 10 compounds</i>		0	15	25	40	
requiring NO Lab Activities	15					0
requiring SOME Lab Activities*	10		15			15
requiring EXTENSIVE Lab Activities**	15			37,5		37,5
requiring VERY EXTENSIVE Lab Activities***	10				40	40
<b>SUM</b>						<b>92,5</b>

\* 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 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 EU Proficiency Test SRM 9

**Task:** A proficiency test covering single residue methods (SRM) will be performed. The intention is to use a commodity of animal origin such as Egg-homogenate or Milk as commodity. In this case the PT will be conducted in collaboration with the EURL-AO. Considering all relevant aspects such as the analytical capacity and interest of the NRLs and OfLs as well as any modifications within the EU-coordinated control program and following consultation with DG-SANCO the commodity might have to be changed.

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. Each participant will receive a detailed printed and electronic report summarizing the PT-scope, results, data treatment and additional information of the methods employed by the participants.

Prior, 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 underperforming OfLs within their network.

Certain tasks associated with the EUPT-SRM9 will or may be subcontracted to other parties e.g. purchase and preparation of test material, standards, shipping material and dry ice. Printing and shipping of the final report.

**Period:** H1 of 2014

**Deliverables:** Preliminary report within 4 weeks of PT deadline; Final Report of EUPT by Q1 2015

### C.2 Preparation of a list showing which labs are obliged to participate in EUPTs in 2014 (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 2014 will be published. The pesticide scope of the labs will not be taken into account in this list. This list will be distributed to all NRLs which are responsible to check its correctness/completeness and report any errors. Prior to generating this list the labs will be asked to update their commodity-scope profiles within the EURL-DataPool.

**Period:** Early in 2014

**Deliverables:** "List of labs obliged to participate in pesticide related EUPTs in 2014" in Q1 2014

### C.3 Attend joint meeting to discuss and evaluate EUPT results

**Period:** H2 of 2014

**Deliverables:** Minutes of the meeting by December 2014, Updated version of the General EUPT Protocol by Q4 2014

### C.4 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 as it is reflected 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. In certain cases training courses of NRLs may be indicated for the future to address common sources of errors.

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

**Period:** Throughout the year

**Deliverables:** Updated version of the General EUPT Protocol including the new criteria or separate paper describing the new concept (to be decided). To be published by Q4 2014

## C.5 Update the “SRM-Pinboard” and promote concept of subcontracting 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 of 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, a list of laboratories considered as proficient for the analysis of individual SRM-compounds will be established (“SRM-Pinboard” = Pool of Proficient SRM-Labs). This list will be updated 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 2014

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

## D. Technical and scientific support to DG-SANCO, 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. NRLs, OfLs and third country labs are technically supported through EURL-Web-Portal (A.5.1) and the EURL-Datapool (A.5.2). Further assistance is also provided via personal communication, presentations in conferences, workshops and trainings (see D.2 - D.4). The comprehensive Lab-Network-DB further contributes in strengthening the network (see A.5.2).

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

**Tasks/Period/Deliverables:** See table below:

Code	Task	Activities	When	Deliverables
D.1.1	Support DG-SANCO in drafting the <b>MACP 2015-17</b>	<ul style="list-style-type: none"> <li>- Participate in one or more meetings (e.g. in Brussels);</li> <li>- Collect and evaluate data and prepare a new "Pesticide Priority List";</li> <li>- Read/Revise of documents;</li> <li>- Communicate with DG-SANCO, EFSA and other stakeholders</li> </ul>	As arranged/agreed with or scheduled by DG-SANCO	Prepare/Provide "Pesticide Priority List" opinions assessments, advices and revisions as required
D.1.2	Support EFSA within the frame of the of the <b>Networking Group on Pesticide Monitoring</b>	<ul style="list-style-type: none"> <li>- Participate in one or more meetings (e.g. in Parma);</li> <li>- Read/Revise of documents;</li> <li>- Communicate with DG-SANCO, EFSA and other stakeholders</li> </ul>	As arranged/agreed with or scheduled by EFSA	Prepare/Provide opinions assessments, advices and revisions as required
D.1.3	Support to EFSA and DG-SANCO in activities concerning re-evaluation of pesticide MRLs according to <b>Article 10 and 12 of Reg. 396/2005/EC</b> . The no. of compounds to be evaluated by the EURLs will expectedly include ca. 50 pesticides to be reviewed in 2014 by EFSA plus some additional pesticides the EFSA review of which has been finalized in 2013.	<ul style="list-style-type: none"> <li>- Prepare an expected time schedule and coordinate the division of tasks among the 4 EURLs</li> <li>- Collect/Evaluate existing information from EFSA, DataPool and other sources;</li> <li>- Compile the available data in a summarized form to facilitate decision-making by the other 4 EURLs as regards LOQs and Residue Definitions;</li> <li>- Collect position of 4 EURLs and finalize document with joint position (coordinate among the 4 EURLs in case of disagreements);</li> <li>- Communicate with DG-SANCO, EFSA and other stakeholders</li> </ul>	As arranged/agreed with or scheduled by DG-SANCO and EFSA	Prepare coordinated positions of the 4 EURLs as regards the residue definitions and the LOQs of pesticides proposed by EFSA and DG-SANCO.  Provide opinions assessments, advices and revisions as required
D.1.4	<b>General assistance</b> to DG-SANCO and EFSA	<ul style="list-style-type: none"> <li>- E-mails and oral communications</li> <li>- Missions to Brussels, Parma or elsewhere</li> </ul>	Throughout 2014 as required	Opinions, advices, revisions as required

**Note:** D1.3 does only include non-laboratory activities. Laboratory activities are covered by B.5. 50 compounds will be expectedly addressed in 2014 requiring approx.140 man-days (M/D) as follows: a) Review of RO and other relevant information (100 M/D); b) Collect/extract/compile information necessary for decision-making (25 M/D); c) Coordinate information and discussions between stakeholders, finalize and distribute Excel file with final positions (15 M/D).

### D.2 EURL-SRM Workshop for Pesticide Residues in Food

**Task:** A workshop will be performed in Fellbach. NRLs and OfLs from all MS can attend, with the main objective to facilitate the interaction between them and the EURL-SRM. The workshop will be held during two days, and will entail technical and scientific communications regarding new activities of the EURL-SRM and other developments in the field of pesticide residues analysis.

**Period:** To be decided

**Deliverables:** Financial and Technical Report by March 2015



### D.3 Training event for selected NRLs in Stuttgart

**Task:** After covering 16 NRLs in the last two trainings (2012 and 2013) the remaining 12 NRLs will be invited to attend a training-workshop in Fellbach. The workshop 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. The participants will be asked to cover parts of the costs (e.g. travelling fees). Additional ad-hoc trainings will be conducted as required.

**Period:** *To be decided*

**Deliverables:** Technical and Financial Report and feedback evaluation by March 2015

### D.4 Interaction with NRLs, OfLs and Third country Labs (via E-mails, surveys, etc.)

**Period:** *Throughout the year as required*

**Deliverables:** none

**Costs:** *Interactions with OfLs will not be charged to the EURL-SRM budget (exception EUPT-related interactions that are covered by C.1, C.2 and C.5)*

### D.5 Joint visit of 1 NRL (with EURL-FV)

**Task:** NRL(s) of one selected country will be jointly visited by representatives from the EURL-SRM and FV. The country will be selected in agreement with DG-SANCO giving emphasis on poor EUPT scope, performance and participation over last years as well as on poor cooperation with the EURLs. Croatia as a new EU country will also be considered as a potential destination. 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, and advices will be given to improve performance and expand the scope. The EURL-SRM will send 1 representative to this visit. The country to be visited will be specified at a later stage in consultation with DG-SANCO.

**Period:** *To be decided*

**Deliverables:** Visit report within 6 months of the visit

### D.6 Webinars

**Background:** As a horizontal task the EURL-FV will introduce the possibility to conduct webinars with the aim to disseminate information to NRLs and OfLs in an interactive yet cost effective way.

**Task:** In 2014 the EURL-SRM will organize at least one webinar individually or in collaboration with other EURLs.

**Period:** *To be decided*

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

### D.7 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*

# Annex I

## Background Information to EURL Web-Services (A.5)

The creation of a laboratory Network and the coordination of the information flow within it is one of the main duties of the EURLs. With this in mind, and following consultations with the other EURLs and the DG-SANCO, the EURL-SRM has developed the Internet-based **EURL-Web-Service** to facilitate the collection and timely dissemination of information, increase transparency and strengthen the Network between EURLs, NRLs and OfLs. The needs and expectations of the various OfLs were collected by conducting a survey in 2011 with the aim to use those insights in the construction of the EURL-Web-Service.

The **EURL-Web-Service** mainly consists of the following:

- 1) a password protected **Document Management and Communication Module** based on the **CIRCA** system, which is directed only to the members core-network (OfLs from EU, EFTA, EU-candidate states);
- 2) an **EURL-Web-Portal** (<http://www.eurl-pesticides.eu>) containing, among others, basic introductory information about the EURLs, news and announcements, as well as valuable links including those to the **individual EURL-websites** that are managed by each EURL separately; and
- 3) a gradually expandable **“EURL DataPool”** containing various databases with information of practical use for the pesticide residue analysts of the network labs.

## Background Information to Method Validation DB (A.5.2.1)

With method validation being compulsory for accreditation purposes, numerous validation experiments are being performed by various laboratories to evaluate analytical procedures and to check if the specified criteria are met. The **“EURL-Method Validation Database”** has been developed to allow a systematic collection of this great amount of data produced in intra- and inter-laboratory validation experiments. Online search tools allowing customized filtering and sorting of data give laboratories the possibility to better assess the suitability of analytical methods for the analysis of various pesticide-commodity combinations. To standardize data submission and thus facilitate data processing, a Microsoft Excel file was developed and can be downloaded from the website. Data submitted in this format can easily be imported into the database.

The potential of this website has been recognized by EFSA which is using the recovery data from the Method Validation Database since 2009 in order to establish LOQs for the reviewed active substances.

The number of recoveries for the individual analytical methods stored in the database are shown below (status August 2013):

Analytical Method	N° of recoveries
QuEChERS (citrate)	248 000
QuOil	16 000
ChemElut	18 000
S19	3 600
SweEt	2 000
QuPPE	1 000

## Background Information to Analytical Methods DB (A.5.2.2):

With the creation of the method validation database (5.2.1) the laboratories were provided with the ability to store the results of their method validation experiments in a common pool. Important for the labs is furthermore the availability of data concerning the methodology of single- and multi-residue procedures. Such data are stored in the **“Analytical Methods**

**Database**” providing reference to the source of information as well as links to online documents (e.g. the list of methods collected by the FAO/IAEA). Inter-linkage with the method validation database and the pesticides database is foreseen where applicable.

#### **Background Information to Pesticides DB (A.5.2.3):**

Pesticide residue analysts have to deal with a vast number of different pesticides and metabolites. A differentiated and detailed knowledge of the properties of the different pesticides is necessary for understanding and predicting their behavior during analysis and thus essential when it comes to making the right decisions in method development, method validation and everyday analysis situations. With each pesticide behaving differently it is difficult for the analysts to maintain an overview of the situation. Several sources of information about the properties of pesticides already exist in literature as well as in the Internet, however their practical usefulness for the analysts is limited. A main problem is that existing information is dispersed among countless sources. This not only makes it extremely difficult to retrieve, but it also does not support the formation of a global overview, which is essential for strategic planning.

The **“Pesticides DB”** aims at providing pesticide residue analysts with valuable pesticide related information within a single platform in order to help them save time and assist them in the design of more efficient analytical strategies.

In addition to the information collected from various sources the database also contains useful experimental information generated by applying appropriate tests to systematically study the behavior of pesticides during the various critical stages of analysis such as extraction/partitioning, cleanup, storage of extracts and standards, chromatography and detection.

The laboratory tests should be such to enable the identification of potential sources responsible for losses of the individual pesticides such as unfavorable partitioning and adsorption phenomena, as well as the exposure to certain conditions (e.g. extreme pH-values, temperature, light, air, enzymes etc.). Information necessary for the chromatographic analysis and detection of pesticides such as mass spectra, chromatographic behavior information, and detection sensitivities achieved with various commonly used instruments will also be generated and collected. Pesticide recovery tests using common multiresidue procedures are also part of this scheme. The relevant data is collected from various laboratories and stored in the **“Method Validation DB”** (5.2.1).

The data collected should ultimately allow to classify pesticides into categories (profiling) and to select representative pesticides based on scientifically sound evaluations. The selection of representative pesticides is important when it comes to simplifying validation procedures. The data generated should furthermore help to classify the pesticides in multi- and single-residue compounds and to pinpoint the potentially critical points in analysis.

#### **Background Information to Stability of Compounds DB (A.5.2.4)**

A significant source of errors in pesticide residue analysis is the degradation of standards in stock solutions, working solutions (e.g. in pesticide mixtures), as well as in sample extracts. Quality Control protocols always require from laboratories to take the necessary measures in order to ensure that this source of errors remains insignificant. Numerous tests have to be performed every year to ensure that the standards employed in analysis are within the acceptable concentration range as required by the AQC-protocol. However, due to the high costs and lots of labor involved here, many laboratories are unable to conduct these controls at the degree required. A common database, where information about the stability of pesticides can be stored, is thus of high value and will help to exploit the existing synergy potentials in this area.

### **Background Information to Pesticide Authorizations DB (A.5.2.5)**

Targeted risk-based approaches are essential for an efficient pesticide residue control. Within the aim of improving the scope of the coordinated control plan for pesticides the EURL-SRM has developed the "Pesticide Priority List" that is constructed based on a points system. Various aspects indicating the relevance of pesticides are taken into account, such as toxicology, residue findings in food samples as well as the pesticide use and misuse potential in agriculture. As data on the real usage of individual pesticides in the various cultures are very difficult to retrieve, information concerning the registration/authorization of pesticides for use in specific cultures in certain countries can serve as an alternative. Of interest are not only authorization data from EU-MS but also data from other countries exporting goods to EU countries.

The collected data can serve various purposes e.g.: 1) for the calculations of the "Pesticide Priority List" of the EURLs (pesticide authorizations is one of the factors considered); 2) to identify pesticide misuse cases (by comparing the residue findings with the data in the authorization DB); 3) to localize pesticides with misuse potential in the EU (mainly pesticides that are not authorized in the EU but used in other countries with similar climatic conditions and cultures); 4) to localize pesticide/commodity combinations of high risk (e.g. pesticides of high toxicity that are authorized in third countries to treat certain crops which are imported in the EU).

### **Background Information to Commodity DB (A.5.2.6)**

Pesticide residue analysts have to deal with a vast number of different commodities. With each commodity having a different influence on analysis it is difficult for the analysts to maintain an overview of the situation. A differentiated and detailed knowledge of the properties of the different commodities is paramount for the understanding of their behavior during analysis and can help the analyst to make the right decisions in method development, method validation and routine analysis.

The **Commodity DB** allows the systematic collection of commodity-related information that is useful for pesticide residue analysts. In addition to the information collected from various sources the intention is that the database should also contain experimentally generated information to elucidate the behavior of the various commodities and their components during the various stages of pesticide residue analysis and their influence on analysis. These experiments may entail the measurement of the matrix load in the extracts before and after cleanup, the influence of matrix on pesticide degradation, the responsiveness of matrix components to various common cleanup approaches, and the study of interferences in measurement including matrix effects.

The data collected should ultimately allow to predict the potential influence of commodities on the analysis of pesticides and furthermore give the possibility to classify the commodities into categories (profiling), thus allowing the selection of representative commodities based on a scientifically sound evaluations. The selection of representative commodities is important when it comes to rationalize validation procedures. Having all (the collected and generated) information in a single platform will help residue analysts to obtain a more global overview of the various commodity types and help them in strategic decision-making and solving of analytical problems.

In combination with the Pesticide DB, this database is intended to form a highly valuable tool for pesticide residue analysts providing them with a convenient and efficient access to information needed for proper decision-making.

**Background Information to Lab-Network-DB (A.5.2.7)**

A “**Lab-Network-Database**” with information about all laboratories within the EURL-NRL-Official Lab Network was constructed. The database entails lab-specific information such as addresses, lab-functions, fields of work, contact persons, available instrumentation, interest for collaborations, commodity scope, pesticide scope etc.. Laboratories and its registered members (contact persons) are able to submit and update their profiles online. The cumbersome task of data updating is thus delegated to the NRLs and OfLs. The database should further allow customized offline and online searches to quickly select/filter specific laboratories having common functions or profiles (e.g. NRLs or official laboratories dealing with the same commodities or pesticides etc.). A further aim of this database is to facilitate the communication between lab-members and strengthen the laboratory network.

**Background Information to EUPT-Archive DB (A.5.2.8)**

Among the duties of the EURLs is to assist OfLs in their efforts to improve their analytical performance. Proficiency tests (EUPTs) are one of the most important tools of monitoring and pushing this process. Currently 3-5 EUPTs are performed annually by the 4 EURLs dealing with pesticides with lots of data being generated every year. The long-term performance evaluation of laboratories (over many years) is hampered by the vast amount of data and the changing lab codes from PT to PT.

The **EUPT-Archive** DB was constructed to allow a systematic archiving of the EUPT-data of all EURLs in order to enable the evaluation of the overall performance of official laboratories and countries throughout EUPTs and/or years. The database further allows the storage of additional PT-related information such as a) the explanations given by official laboratories for their non-participation in EUPTs, b) the explanations for the non-analysis of certain pesticides within the EUPT-scope and c) the information given by the labs as regards the investigations in case of underperformance and the corrective measures taken.

Appropriate data export tools with filters and sorting options are planned to be installed to allow customized EUPT-, laboratory- or pesticide-specific searches on-line. Using appropriate filters the EURLs and the COM should be able to easily obtain answers and conclusions. The access of the laboratories to their own EUPT-data via their own profile site should help them get an overview of their long-term performance and allow them to demonstrate their performance and the associated corrective measures during audits and inspections in a well-documented manner.

**Background Information to MRL Residue Definitions DB (A.5.2.9)**

MRL residue definitions are of core relevance to pesticide residue analysts. This information is also presented in several generated tables. Having all information at a glance is convenient for the user and saves time. For updating the residue definitions the data is extracted from the DG-SANCO MRL-database and semi-automatically imported to the DataPool. The date of data export from the MRL-database is indicated and a disclaimer further indicates that the information is of no legal validity. The database also contains the conversion factors to allow the calculation of the respective sum of components as stated in the residue definition.