

**EUROPEAN UNION PROFICIENCY TEST FOR
PESTICIDES IN FRUITS AND VEGETABLES
SCREENING METHODS 03
(EUPT-FV-SM-03)
2011**

Pesticide Residues in Mandarin Homogenate

Final Report

Organiser:

Dr. Amadeo R. Fernández-Alba

Co-Head of EURL-FV

University of Almería, Edificio Químicas CITE I, Ctra. Sacramento s/n
04120 Almería, SPAIN

Phone: +34 950015034; Fax: +34 950015645

E-mail: amadeo@ual.es

www.eurl-pesticides.eu

Organising team at the University of Almería:

Dr. Milagros Mezcua, Senior Chemist.

Dr. Paula Medina, Chemist.

Mr. Octavio Malato, Chemist.

Ms. Noelia Belmonte, Chemist.

Ms. María Ángeles Martínez Uroz, Chemist.

Ms. María del Mar Gómez Ramos, Chemist.

Ms. Ana Lozano, Chemist.

University of Almería

University of Almería

University of Almería

University of Almería

University of Almería

University of Almería

University of Almería

Scientific Committee:

Dr. Antonio Valverde, Senior Chemist (QCG).

Mr. Stewart Reynolds, Senior Chemist (QCG).

Dr. Carmelo Rodríguez, Senior Chemist (SG).

Dr. Sonja Masselter (AG)

Dr. André de Kok, Senior Chemist (AG).

Dr. Tuija Pihlström, Senior Chemist (AG).

Dr. Hans Mol, Senior Chemist (AG)

Dr. Magnus Jezussek, Senior Chemist (AG).

Dr. Darinka Stajnbaher, Senior Chemist (AG).

Dr. Miguel Gamón, Senior Chemist (AG).

Dr. Michlangelo Anastasiades, Senior Chemist (AG).

Dr. Mette Erecius Poulsen, Senior Chemist (AG).

Mr. Ralf Lippold, Senior Chemist (AG)

University of Almería, Spain.

The Food and Environment Research
Agency, York, United Kingdom.

University of Almería, Spain.

AGES GmbH, Competence Center for
Residues of Plant Protection Products,
Innsbruck, Austria.

Food and Consumer Product Safety
Authority (VWA), Amsterdam, The
Netherlands.

National Food Administration,
Uppsala, Sweden.

RIKILT, Wageningen, The Netherlands.

Bavarian Health and Food Safety
Authority, Erlangen, Germany.

Institute of Public Health, Maribor,
Slovenia.

Co-Head of EURL-FV. Generalitat
Valenciana, Spain.

CVUA Stuttgart, Fellbach, Germany.

National Food Institute, Soeborg,
Denmark.

CVUA, Freiburg, Germany

QCG: Quality Control Group

SG: Statistical Group

AG: Advisory Group

CONTENTS

1. INTRODUCTION.	3
2. TEST MATERIALS.	4
2.1 Test material.	
2.2 Analytical methods.	
2.3 Prior analysis of the spiked mandarin test material.	
2.4 Distribution of test material and protocol to participants.	
3. STATISTICAL METHODS.	9
3.1 Type of Results Reported.	
4. RESULTS.	10
4.1 Summary of reported results.	
4.2 Concentration levels.	
4.3 Assessment of laboratory performance.	
5. CONCLUSIONS.	17
6. SUGGESTIONS FOR FUTURE WORK.	18
7. REFERENCES.	19
8. ACKNOWLEDGEMENTS.	20
APPENDIX 1. Results.	21
APPENDIX 2. Graphical Representations.	23
APPENDIX 3. Methods used by participants for detecting pesticides.	27
ANNEX 1. Protocol, Instructions and Forms.	88
ANNEX 2. List of laboratories that participate in EUPT-FV-SM-03.	97

EUROPEAN UNION PROFICIENCY TEST FOR PESTICIDES IN FRUITS AND VEGETABLES

SCREENING METHODS 03

2011

BACKGROUND

According to Article 28 of Regulation 396/2005/EC of the European Parliament and European Council regarding maximum residue levels for pesticides in, or on, food and feed of plant and animal origin¹: all laboratories analysing samples for the official control of pesticide residues shall participate in the European Union Proficiency Tests (EUPTs) for pesticide residues, facilitated by the Commission. These proficiency tests are carried out on an annual basis in order to ensure the quality, accuracy and comparability of the residue data reported by EU Member States to the European Commission, as well as by other Member States within the framework of coordinated and national monitoring and surveillance programmes.

Regulation (EC) No 882/2004² lays down the general tasks, duties and requirements for European Union Reference Laboratories (EURLs) for Food, Feed and Animal Health. Among these tasks is the provision for independently-organised comparative tests. This year, for the third time, the EURL for pesticides in Fruit and Vegetables at the University of Almería, Spain³ organised a proficiency test on qualitative screening methods for pesticides in vegetable/fruit commodities. This test was organised because many laboratories are now using screening methods on routine samples allowing a significant increase in their analytical scope.

Participation in this PT remains on a voluntary basis. Besides this, official laboratories have a significant number of mandatory PTs annually as the EURL-FV already organises the PT for quantitative multi-residue pesticide analysis (EUPT-FV13), organised over the same time period. Nevertheless, all FV-NRLs and FV-Official laboratories involved in the determination of pesticide residues in fruit and vegetables for the EU-coordinated monitoring programme, or for their own national programmes, were invited to take part.

This report will be presented to the European Commission Standing Committee for Animal Health and the Food Chain. Furthermore, DG-SANCO has full access to all EUPT data including the individual lab-codes/lab-name keys.

¹ Regulation (EC) No 396/2005, published in OJ of the EU L70 of 16.03.2005, as last amended by Regulation 839/2008 published in OJ of the EU L234 of 30.08.2008.

² Regulation (EC) No 882/2004 of the European Parliament and of the Council on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules. Published in OJ of the EU L191 of 28.05.2004

³ Commission Regulation (EC) No 776/2006 of 23 May 2006 - amending Annex VII of Regulation (EC) No 882/2004 of the European Parliament and of the Council as regards Community Reference Laboratories.

1. INTRODUCTION

Now in this third year, consolidation of inter-laboratory tests for pesticide screening methods among laboratories seems to be assured; even being requested by those laboratories not performing routine analysis on fruit and vegetables. Responding to this demand, the EURL-FV has decided to continue with their operation. The support given by DG SANCO for these methods has greatly assisted laboratory acceptance by allowing laboratories to conduct screening methods on the EU-Coordinated Multiannual Programme samples.

Over recent years, it has been found that many laboratories not only used a full-scan approach to perform screening but that some also employed modern tandem-mass spectrometers, even if their sensitivity has to be reduced.

Mass spectrometry plays an essential role in the everyday work carried out by laboratories. Technological improvements in modern MS systems offer new possibilities for greatly increasing the scope of MRM analysis. Whereas full-scan measurements are theoretically the best approach for MS screening, developments in targeted measurements also offer the potential for a substantially increased scope of analysis. Another reason for conducting this proficiency test on screening methods is to gather information from laboratories as to the type of software they use for processing data: whether laboratories are using commercial software and databases or whether they are internally constructed and search manually. This type of test provides an overview of such information as well as valuable insight into the possible need for further software development in the near future.

The aim of the EURL-FV is for laboratories to be able to use mass-spectrometry-based screening methods routinely, following validation. This is in line with the Document No. SANCO/10684/2009 - Method validation and quality control procedures for pesticide residues analysis in food and feed.

Only qualitative information was requested for those pesticides detected. It was decided, as in previous PTs, not to provide the laboratories with a Target Pesticide List so that their capability in detecting whatever pesticides were present was also evaluated.

Regulation (EC) No 882/2004 lays down the general tasks, duties and requirements for EURLs in Food, Feed and Animal Health. Among these tasks is the provision for independently-organised comparative tests. The EURL for pesticides in Fruit and Vegetables at the University of Almería, Spain, has organised the proficiency test on qualitative screening methods for pesticides in fruit/vegetable commodities. This EUPT-FV-SM03 is aimed at all National Reference Laboratories (**NRLs**) and all Official Laboratories (**Ofls**) for fruits and vegetables in EU Member States. Laboratories outside this EURL/NRL/Ofl-Network were also able to participate on a case-by-case basis, following consultation with DG SANCO.

2. TEST MATERIALS

2.1 Test material

This proficiency test is based on pesticide residue detection in mandarins. The mandarins used in this study were grown in Valencia, Spain.

The pesticides used to treat the mandarins were spiked with a mixture of standard solutions on a post-harvest treatment. The mandarins were then frozen (using liquid nitrogen), chopped, homogenised and sub-sampled into polyethylene bottles that had previously been coded. The bottles containing the test material were stored frozen (at approximately -20°C) prior to shipment to participants.

Ten of these bottles were randomly chosen and analysed to check the presence of the spiked pesticides.

Two bottles, again randomly chosen, were analysed over a period of time to confirm the stability of the pesticides in the test material (a week prior to the sample delivery and a few days after the deadline for receipt of the participants' results. There was an extra analysis during this period, in which the test material underwent the same conditions as the sample shipment for 48h in order to check if there had been any degradation of any of the pesticides during sample delivery.

The pesticides used to spike the mandarin test material were decided upon by the Quality Control Group. It was decided that a target pesticide list would not be provided to participants. The pesticides selected to treat the test material for this EUPT-FV-SM03 were chosen taking into account the following considerations:

- Pesticides that were not included in the EU-Coordinated Multiannual Control Programme for 2010 (Regulation (EC) 915/2010).
- Pesticides that had particularly acute toxicity and/or had low ARfD values.

Table 2.1 shows the 26 pesticides used to spike the mandarin sample.

Table 2.1. The spiked pesticides used.

Spiked Pesticides			
Alachlor	Fenamidone	Ofurace	Quinalphos
Atrazine	Flucythrinate	O-Phenylphenol	Sulfotep
Benalaxyl	Fonofos	Phorate	Terbufos
Carbophenothion	Forchlorfenuron	Prometryn	Terbutylazine
Chinomethionat	Mecarbam	Propoxur	Tolfenpyrad
Chlozolinate	Mevinphos	Prothiophos	
Etrimfos	Nuarimol	Pyridaphenthion	

Blank material without spiked pesticides was also prepared and shipped for confirmation purposes.

2.2 Analytical methods

The two analytical methods described briefly below were used by the Organiser for the homogeneity and stability tests performed by the EURL-FV. These were:

- GC method [1]: gas chromatography/mass spectrometry (GC-q-MS) using electron impact (EI) ionisation and full-scan acquisition.
- LC method [2]: LC-TOF-MS using electrospray ionisation and operating in the positive and negative ion mode.

2.3 Prior analysis of the spiked mandarin test material

The Organiser's homogeneity and stability tests associated with 'quantitative' PTs were conducted with other acceptance criterion than classical EUPT-FVs. Hence the PT test material was analysed in order to detect the presence of the spiked pesticides consistently confirmed to be above the Organiser's LOD.

For a test aiming to confirm the homogeneity of the test material sent, ten spiked test materials were randomly chosen from those stored in the freezer and analysed in duplicate so as to check for the presence of the pesticides.

The injection sequence of the 10 analyses by GC and LC were determined from a table of randomly-generated numbers. Relative standard deviation (RSD) of these 20 analyses needed to be below or at a 15% to consider the material as homogeneous.

Table 2.3.1 shows the summary of these tests, together with the average concentration values for each of the pesticides used to treat the sample and the RSDs.

Table 2.3.1 Homogeneity tests

Test material No.	006 a	006 b	012 a	012 b	035 a	035 b	041 a	041 b	061 a	061 b	085 a	085 b	089 a	089 b	093 a	093 b	104 a	104 b	110 a	110 b	A. Cc (µg/kg)	RSD (%)
Alachlor	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	109.3	5.4
Atrazine	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	292.2	4.0
Benalaxyl	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	135.0	9.7
Carbophenothion	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	367.8	5.5
Chinomethionat	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	120.8	6.5
Chlozolinate	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	222.0	10.9
Etrimfos	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	146.1	6.9
Fenamidone	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	320.9	12.2
Flucythrinate	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	752.8	6.2
Fonofos	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	302.3	14.4
Forchlorfenuron	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	264.2	4.5
Mecarbam	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	412.5	9.7
Mevinphos	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	283.4	10.0
Nuarimol	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	379.3	3.7
Ofurace	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	95.1	5.2
o-Phenylphenol	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	218.9	14.8
Phorate	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	265.2	7.8
Prometryn	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	695.5	2.3
Propoxur	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	194.8	3.6
Prothiophos	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	191.0	8.2
Pyridaphenthion	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	207.3	8.8
Quinalphos	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	205.6	8.4
Sulfotep	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	242.6	12.6
Terbufos	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	328.5	8.3
Terbuthylazine	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	396.4	4.0
Tolfenpyrad	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	38.9	15.0

D: Detected A. Cc: Average Concentration RSD: Relative Standard Deviation

Further analyses to test for stability were performed following varying time lapses. On each occasion, a test material stored in the freezer at -20°C was randomly chosen and analysed.

The three occasions were:

- Day 1: one week before the sample shipment on 17th January 2011.
- Day 2: on 26th January 2011 after reproducing the sample shipment conditions.
- Day 3: soon after the deadline for reporting results on 28th January 2011.

For all the analyses, the two analytical methods described briefly above (in section 2.2) were used.

Table 2.3.2 Stability tests performed.

Stability tests						
Test material Number	015 Day 1	015 Day 1	042 Day 2	042 Day 2	071 Day 3	071 Day 3
Alachlor	D	D	D	D	D	D
Atrazine	D	D	D	D	D	D
Benalaxyl	D	D	D	D	D	D
Carbophenothion	D	D	D	D	D	D
Chinomethionat	D	D	D	D	D	D
Chlozolate	D	D	D	D	D	D
Etrimfos	D	D	D	D	D	D
Fenamidone	D	D	D	D	D	D
Flucythrinate	D	D	D	D	D	D
Fonofos	D	D	D	D	D	D
Forchlorfenuron	D	D	D	D	D	D
Mecarbam	D	D	D	D	D	D
Mevinphos	D	D	D	D	D	D
Nuarimol	D	D	D	D	D	D
Ofurace	D	D	D	D	D	D
o-Phenylphenol	D	D	D	D	D	D
Phorate	D	D	D	D	D	D
Prometryn	D	D	D	D	D	D
Propoxur	D	D	D	D	D	D
Prothiophos	D	D	D	D	D	D
Pyridaphenthion	D	D	D	D	D	D
Quinalphos	D	D	D	D	D	D
Sulfotep	D	D	D	D	D	D
Terbufos	D	D	D	D	D	D
Terbutylazine	D	D	D	D	D	D
Tolfenpyrad	D	D	D	D	D	D

D: Detected

All the pesticides used to spike the samples demonstrated sufficient stability even after reproducing the 48h delivery conditions. All were detected on each occasion.

2.4 Distribution of test materials and protocol to participants

Approximately 300 g of treated mandarin homogenate together with another 300 g of 'blank' mandarin homogenate were shipped to participants on 24th January 2011. The deadline for results submission to the Organiser was 72 hours after receipt of the test material. Participants were asked to report all the pesticides that they detected.

Laboratories were asked to screen the test materials using the wide-scope screening methods they would normally apply, or anticipate applying, for official monitoring purposes. This typically involves full-scan techniques like GC-MS (full-scan quadrupole, ion trap, ToF) and/or LC-TOF-MS

and Orbitrap. However, extended targeted methods using LC tandem MS (triple quadrupole, Q-trap, Q-TOF) or GC-MS/MS could also be used.

Before shipment, the laboratories received full instructions (Annex 1) for the receipt and analysis of the spiked test material although they were encouraged to use their own screening methods. These instructions, laid out as the Protocol, were uploaded onto the EUPT-FV-SM03 web page, designed especially for this Proficiency Test. This information was also sent by e-mail to all participant laboratories. The Application Form was uploaded onto this same web site together with Form 0 (Sample Receipt) and Form 1 (Results). These allowed the evaluation of the mass-spectrometric screening methods that each of the participants used.

3. STATISTICAL METHODS

3.1 Type of results reported

The results evaluation is concerned with the results themselves matching the pesticides the Organiser used to treat the sample: or otherwise stating a 'not-reported pesticide' or 'other reported pesticide' from those used to treat the sample. After receiving the results, the Organiser may consider further evaluation highlighted by important information received.

3.1.1 Other Reported Pesticides

These will be considered as those results showing the apparent presence of pesticides which were: (i) not used in the test material treatment, or (ii) not detected by the Organiser, even after repeated analyses. However, if a number of participants detect the same additional pesticide(s), then a decision as to whether, or not, this should be considered an 'Other Reported Pesticide' result will be made on a case-by-case basis.

Organiser Note:

- Not all screening methods immediately provide sufficient information to allow full identification. In such cases, when they detect a pesticide in real life, laboratories normally do a follow-up confirmatory analysis; using, for example, LC-MS/MS and based on two transitions. In future PTs of this nature, there will be a need to distinguish between suspect or tentative detections and full identification.

3.1.2 Not-Reported Pesticides

These will be considered as any pesticides present in the sample but not reported by the lab even though the Organiser had used it to spike the test material and it was detected by the majority of participants.

4. RESULTS

4.1 Summary of reported results

Fifty-two laboratories agreed to participate in this third proficiency test on screening methods. Forty-six laboratories submitted results. All results reported by the participants are given in Appendix 1. Graphical representations of the results reported are shown in Appendix 2. Details of the screening methods used are provided in Appendix 3. The laboratories that agreed to participate are listed in Annex 2.

A summary of the results reported by pesticide and by laboratory can be seen in Table 4.1.

Table 4.1 Summary of Results Reported.

Pesticide	No. of Reported	% of Reported*	No. of Not Reported	% of Not Reported*
Alachlor	38	83%	8	17%
Atrazine	41	89%	5	11%
Benalaxyl	43	93%	3	7%
Carbophenothion	34	74%	12	26%
Chinomethionat	29	63%	17	37%
Chlzolinate	35	76%	11	24%
Etrimfos	40	87%	6	13%
Fenamidone	32	70%	14	30%
Flucythrinate	39	85%	7	15%
Fonofos	39	85%	7	15%
Forchlorfenuron	11	24%	35	76%
Mecarbam	43	93%	3	7%
Mevinphos	42	91%	4	9%
Nuarimol	38	83%	8	17%
Ofurace	23	50%	23	50%
o-Phenylphenol	40	87%	6	13%
Phorate	37	80%	9	20%
Prometryn	41	89%	5	11%
Propoxur	38	83%	8	17%
Prothiophos	40	87%	6	13%
Pyridaphenthion	32	70%	14	30%
Quinalphos	43	93%	3	7%
Sulfotep	41	89%	5	11%
Terbufos	38	83%	8	17%
Terbutylazine	43	93%	3	7%
Tolfenpyrad	13	28%	33	72%

* The % of laboratories is calculated based on the total number of laboratories submitting results (46).

4.1.1 Other Reported Pesticides

Many laboratories reported additional pesticides to those spiked in the test material. These reported pesticides are presented in Table 4.2.

Table 4.2. 'Other reported pesticides' in the test material given by laboratories.

LABORATORY CODE	REPORTED PESTICIDE	LABORATORY CODE	REPORTED PESTICIDE
Lab003	Phenthoate	Lab035	Aldimorph
	Trietazina		Butralin
Lab008	Ametryn		Fenazaquin
	Tralkoxydim		Fluacrypyrim
Lab011	Clomazone	Fluazifop butyl	
	Ditalimfos	Lab040	Tribenuron methyl
	Esprocarb	Lab045	Imazalil
	Fensulfotion sulfone	Lab046	Dimethomorph
	Merphos	Lab047	Terbutryn
	Metolachlor	Lab051	Bromophos ethyl
	Tralkoxydim	Lab053	Alpha Cypermetrin
Triazamate	Bitertanol		
Lab013	Phoxim		Clomazone
Lab020	Pyridaben		Dichlofenthion
	Thiabendazole		Methfuroxan
Lab022	Ametryn		Metoxychlor
Lab023	Alpha Cypermetrin		Propachlor
Lab030	Fluquinconazole		Pymetrazine
	Flutriafol		Pyridaben
	Imazalil		Sebuthylazine
	Triadimefon	Siduron	
Lab033	Naphthalene		

There were three pesticides reported by some laboratories and detected in repeated analyses by the Organiser. These were chlorpyrifos, propazine and simazine. The laboratories that reported them are shown in Table 4.3.

Table 4.3 Pesticides detected by laboratories and the Organiser, other than those spiked

LABORATORY CODE	REPORTED PESTICIDE	LABORATORY CODE	REPORTED PESTICIDE
Lab011	Chlorpyrifos ethyl	Lab032	Chlorpyrifos ethyl
Lab012	Chlorpyrifos ethyl		Propazine
Lab013	Propazine		Simazine
Lab016	Propazine	Lab039	Chlorpyrifos ethyl
	Simazine		Propazine
Lab022	Propazine	Lab040	Chlorpyrifos ethyl
	Simazine	Lab046	Propazine

LABORATORY CODE	REPORTED PESTICIDE	LABORATORY CODE	REPORTED PESTICIDE
Lab023	Chlorpyrifos ethyl		Simazine
	Propazine	Lab047	Chlorpyrifos ethyl
Lab025	Chlorpyrifos ethyl	Lab051	Chlorpyrifos ethyl

4.1.2 Not-Reported Pesticides

In Table 4.1, the number and percentage of laboratories not reporting each of the pesticides used to spike the sample can be seen. The individual results for each laboratory are given in Appendix 1. Graphical representations can be seen in Appendix 2.

4.2 Concentration levels.

Twenty-six pesticides were used to spike the mandarin test material at different levels, in the range between 50 and 1000 ppb. This EUPT was focused only on detection capabilities; therefore no quantitative data were requested.

4.3 Assessment of laboratory performance.

No z-score values (nor any other statistical calculations) have been carried out for laboratories to assess their performance as no numerical results were reported by the participants. However, classification has been considered important, based on the number of detected results each laboratory reported and also which methods they used.

Table 4.4 classifies the laboratories according to the number of spiked pesticides reported.

Table 4.4 Classification of laboratories according to the number of spiked pesticides reported.

Laboratory Code	Reported	Other Detected Pesticides	
		Confirmed by the Organiser	Not confirmed by the Organiser
4	26	-	-
5*	26	-	-
11*	26	1	8
22	26	2	1
13	25	1	1
18	25	-	-
25	25	1	0
28*	25	-	-
32	25	3	0
33	25	-	1
46	25	2	1
1	24	-	-
8	24	-	2
17	24	-	-
34*	24	-	-

Laboratory Code	Reported	Other Detected Pesticides	
		Confirmed by the Organiser	Not confirmed by the Organiser
50	24	-	-
51*	24	1	1
10	23	-	-
16	23	2	0
21	23	-	-
12*	22	1	0
14	22	-	-
26	22	-	-
39	22	2	0
41*	22	-	-
52	22	-	-
40	21	1	1
53*	21	-	11
45	20	-	1
6*	19	-	-
15	19	-	-
19	19	-	-
23	19	2	1
35*	18	-	5
42*	18	-	-
44*	18	-	-
9	17	-	-
30*	16	-	4
37*	16	-	-
20	15	-	2
3	14	-	2
47*	13	1	1
24*	12	-	-
29	9	-	-
49	3	-	-
36	2	-	-

* National Reference Laboratories for Fruit and Vegetables from the EU participating in this test.

The methods used by the laboratories, the chromatographic techniques, detectors, instrumentation, etc... are detailed in Appendix 3. In Table 4.4, there is a summary of the chromatographic techniques used for each pesticide, and a graphical representation is shown in Appendix 2.

Table 4.4 Chromatographic techniques used to determine each pesticide in the test material

Pesticide	Total no. of Reported Pesticides	Total % of Reported Pesticides	GC	LC
Benalaxyl	43	93%	25	18
Mecarbam	43	93%	20	23
Quinalphos	43	93%	32	11
Terbutylazine	43	93%	22	21
Mevinphos	42	91%	28	14
Atrazine	41	89%	19	22
Prometryn	41	89%	26	15
Sulfotep	41	89%	30	11
Etrifos	40	87%	29	11
o-Phenylphenol	40	87%	39	1
Prothiophos	40	87%	36	4
Flucythrinate	39	85%	34	5
Fonofos	39	85%	28	11
Alachlor	38	83%	24	14
Nuarimol	38	83%	25	13
Propoxur	38	83%	14	24
Terbufos	38	83%	23	15
Phorate	37	80%	27	10
Chlzolinate	35	76%	35	0
Carbophenothion	34	74%	29	5
Fenamidone	32	70%	9	23
Pyridaphenthion	32	70%	18	14
Chinomethionat	29	63%	27	2
Ofurace	23	50%	8	15
Tolfenpyrad	13	28%	6	7
Forchlorfenuron	11	24%	0	11

In Table 4.4, it can be observed that 72% of the overall results (857 out of 1,196) for the pesticides present in the sample are reported at or above 70%; and that 61% of the overall results are at or above 80%. In Appendix 2, graphical representations of the coloured-bar techniques used can be seen.

Table 4.5 shows the number and percentage of the pesticides used by the Organiser to spike the sample which were reported by each laboratory. National Reference Laboratories are marked with an asterisk sign.

Table 4.5. Number and Percentage of Pesticides Present Reported by Laboratory

Laboratory Code	Number of Pesticides Present Reported	% of Pesticides Present Reported
1	24	92
2*	No Results Reported	
3	14	54
4	26	100
5*	26	100
6*	19	73
7	No Results Reported	
8	24	92
9	17	65
10	23	88
11*	26	100
12*	22	85
13	25	96
14	22	85
15	19	73
16	23	88
17	24	92
18	25	96
19	19	73
20	15	58
21	23	88
22	26	100
23	19	73
24*	12	46
25	25	96
26	22	85
27	No Results Reported	
28*	25	96
29	9	35
30*	16	62
31	No Results Reported	
32	25	96
33	25	96
34*	24	92
35*	18	69
36	2	8
37*	16	62
38	No Results Reported	
39	22	85
40	21	81
41*	22	85
42*	18	69

Laboratory Code	Number of Pesticides Present Reported	% of Pesticides Present Reported
43	No Results Reported	
44*	18	69
45	20	77
46	25	96
47*	13	50
49	3	12
50	24	92
51*	24	92
52	22	85
53*	21	81

* National Reference Laboratories for Fruit and Vegetables from the EU participating in this test.

5. CONCLUSIONS

Fifty-two laboratories applied to participate in this test and forty-six laboratories submitted results. Seventeen of the laboratories which applied were National Reference Laboratories for Fruits and Vegetables (marked with an asterisk on the graphs and tables) representing nineteen Member States. In addition to these, 2 EFTA countries (Norway and Switzerland) and two non-EU/EFTA countries (Egypt and Turkey) participated in this European Union Proficiency Test.

Most laboratories analysed the test material using methods based on both gas and liquid chromatography, combined with mass spectrometric detection. In the case of GC-MS analysis, full-scan acquisition, with associated target-library software (covering a large number of pesticides) was used by the majority of the laboratories. In the case of LC-MS analysis, targeted acquisition methods using triple quadrupole instruments were the most widely used.

Four of the 46 laboratories were able to detect all 26 pesticides in the spiked mandarin test material. Only 4 laboratories failed to detect below 50% of the pesticides present.

Seventy-one percent of the laboratories that reported results were able to find more than 70% of the pesticides used to spike the sample whereas last year (EUPT-FV-SM02) only 50% managed to do so. This gives an idea of the scale of improvement possible for laboratories using these types of methods.

Sixteen participants reported forty different pesticides which were not used to spike the mandarins. Whether this should be judged as poor performance, or not, depends on how each participant would act on these positive findings in routine analysis. If the detected pesticide were reported as positive with no further identifying confirmation, then the result would be a false positive and hence erroneous monitoring data would be reported. If the detected pesticide is regarded simply as 'suspect' or 'indicatively present', leading to additional analysis to confirm identity before reporting the result, then those pesticides indicated as 'other reported pesticides' in this report are not really an issue.

This third interlaboratory test on wide-scope screening methods showed that such an approach can substantially expand the scope of pesticide residue analysis. This is especially useful for pesticides not frequently found in food and feed, or not monitored by the laboratories because they are not part of the EU-Coordinated Programme. The use of screening methods can greatly increase the chance of detecting less commonly found pesticides. However, the test also revealed that improvements in scope (both in number and the choice of pesticides included) and verification of the screening methods performance (i.e. validation) are necessary to improve reliability of such methods.

6. SUGGESTIONS FOR FUTURE WORK

The Organiser and the Scientific Committee consider that screening methods have provided additional value to the current quantitative multiresidue methods routinely used for monitoring purposes. The results of this third test are most encouraging, but also indicate the need for continued evaluation of screening methods. Therefore, further proficiency tests will be organised to provide support to those laboratories using screening methods in order to extend their use and improve their reliability. These methods will be used more and more as screens/filters, to make routine laboratory work easier and faster. The need for screening method validation has been recognised and guidelines for such validation have been prepared and included in the updated SANCO document: "Method validation and quality control procedures for pesticide residue analysis in food and feed" (SANCO/12495/2011).

Next year, pear matrix test material will be used. If laboratories have a particular interest for specific matrices, they should inform the EURL-FV and their suggestions will be evaluated. The timing for the test material delivery will be February 2012; and 72 hours will be allowed for results submission (given that this should be time enough to undertake screening methods). There will not be a target list, as was the case in this test.

7. REFERENCES

1. Malato O., Lozano, A., Mezcua M., Agüera, A., and Fernandez-Alba A. R. Benefits and pitfalls of the application of screening methods for the analysis of pesticide residues in fruits and vegetables. *Journal of Chromatography A*, 2011, 1218(42), 7615-7626.
2. Mezcua M., Malato O., Martinez-Uroz M. A., Lozano, A., Agüera, A., and Fernandez-Alba A. R. Evaluation of Relevant Time-of-Flight-MS Parameters Used in HPLC/MS Full-Scan Screening Methods for Pesticides Residues. *Journal of AOAC Int.*, 2011, 94 (6), 1674-1684.
3. Mezcua M., Martinez-Uroz M. A., Wylie P. L. and Fernandez-Alba A.R. Simultaneous screening and target analytical approach by GC-q-MS for pesticide residues in fruits and vegetables. *Journal of AOAC Int.*, 2009, 92 (6).
4. Mezcua M., Malato O., Garcia-Reyes J. F., Molina-Diaz A., and Fernandez-Alba A. R. Accurate-Mass Databases for Comprehensive Screening of Pesticide Residues in Food by Fast Liquid Chromatography Time-of-Flight Mass Spectrometry. *Anal. Chem.* 2009, 81, 913-929.
5. Method Validation and Quality Control Procedures for Pesticide Residues Analysis in Food and Feed, European Commission, Document No. SANCO/10684/2009.
6. ISO/IEC 17043:2010 Conformity assessment - General requirements for proficiency testing.

8. ACKNOWLEDGEMENTS

The Organiser is grateful to the European Commission for funding this 3rd European Proficiency Test for Screening Methods in Fruit and Vegetables.

The Organiser wishes to thank the members of the Scientific Committee for their invaluable and knowledgeable advice.

The Organiser wishes to give a special thank-you to Almeria University for the use of their facilities.

APPENDIX 1. Results

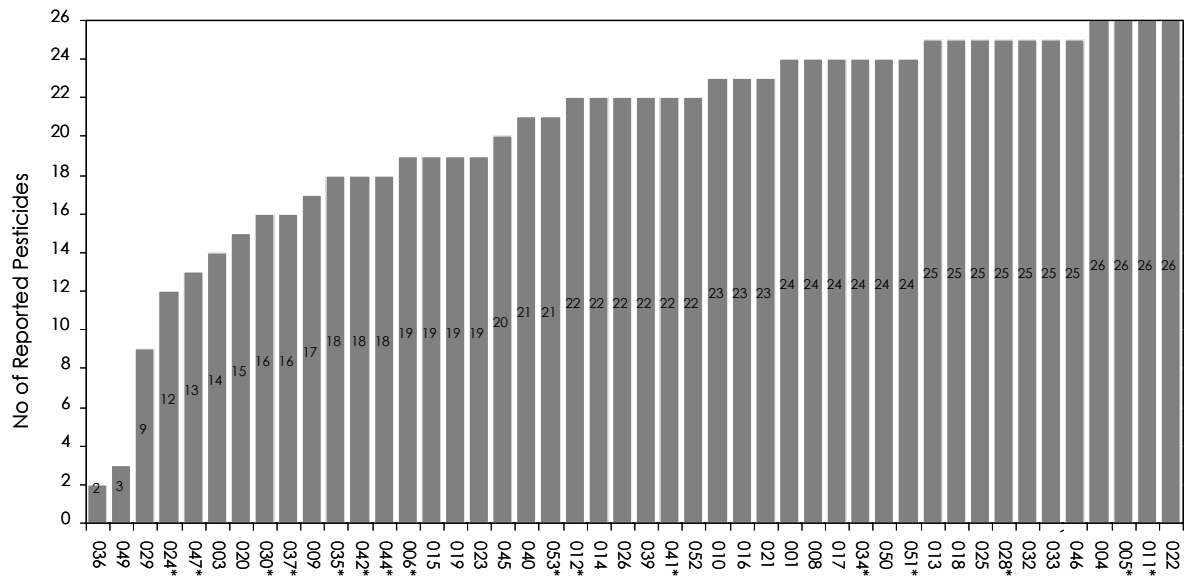
Laboratory Code	Alachlor	Atrazine	Benalaxyl	Carbophenothion	Chinomethionat	Chlozolinate	Eirimfos	Fenamidone	Flucythrinate	Fonofos	Forchlorfenuron	Mecarbam	Mevinphos	Nuarimol	Ofurace	o-Phenylphenol	Phorate	Prometryn	Propoxur	Prothiophos	Pyridaphenthiion	Quinalphos	Sulfotep	Terbufos	Terbuthylazine	Tolfenpyrad	Total	%							
1	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	24	92							
2*														No Results Reported																					
3		D	D				D			D		D	D	D	D				D	D		D	D		D	D	14	54							
4	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	26	100						
5*	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	26	100						
6*		D	D	D		D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	19	73							
7														No Results Reported																					
8	D	D	D		D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	24	92						
9		D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	17	65							
10	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	23	88							
11*	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	26	100							
12*	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	22	85							
13	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	25	96							
14	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	22	85							
15	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	19	73							
16	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	23	88							
17	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	24	92							
18	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	25	96							
19	D	D	D	D		D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	19	73							
20		D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	15	58							
21	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	23	88							
22	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	26	100							
23	D	D	D	D		D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	19	73							
24		D	D	D		D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	12	46							
25	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	25	96							
26	D		D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	22	85							
27														No Results Reported																					
28*		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	25	96							
29	D		D	D						D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	9	35							
30*	D	D	D			D	D					D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	16	62							
31														No Results Reported																					
32	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	25	96							
33	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	25	96							
34*	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	24	92							
35*	D		D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	18	69							
36	D																										2	8							
37*	D	D	D	D		D	D		D	D		D				D		D		D		D	D	D	D	D	16	62							
38														No Results Reported																					
39	D	D	D			D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	22	85							
40	D	D	D	D	D	D	D		D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	21	81							
41*	D	D	D	D	D	D	D		D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	22	85							
42*	D		D	D			D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	18	69							
43														No Results Reported																					
44*	D	D	D			D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	18	69							
45			D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	20	77							
46	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	25	96							
47*	D	D	D				D	D	D	D		D				D		D							D	D	13	50							
49	D	D	D																							D	3	12							
50	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	24	92							
51*	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	24	92							
52	D	D	D	D	D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	22	85							
53*	D	D			D	D	D	D	D	D		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	21	81							
Total Detections	38	41	43	34	29	35	40	32	39	39	11	43	42	38	23	40	37	41	38	40	32	43	41	38	43	13									
% of Detections	84	91	96	76	64	78	89	71	87	87	24	96	93	84	51	89	82	91	84	89	71	96	91	84	96	29									

D: Detected pesticide reported

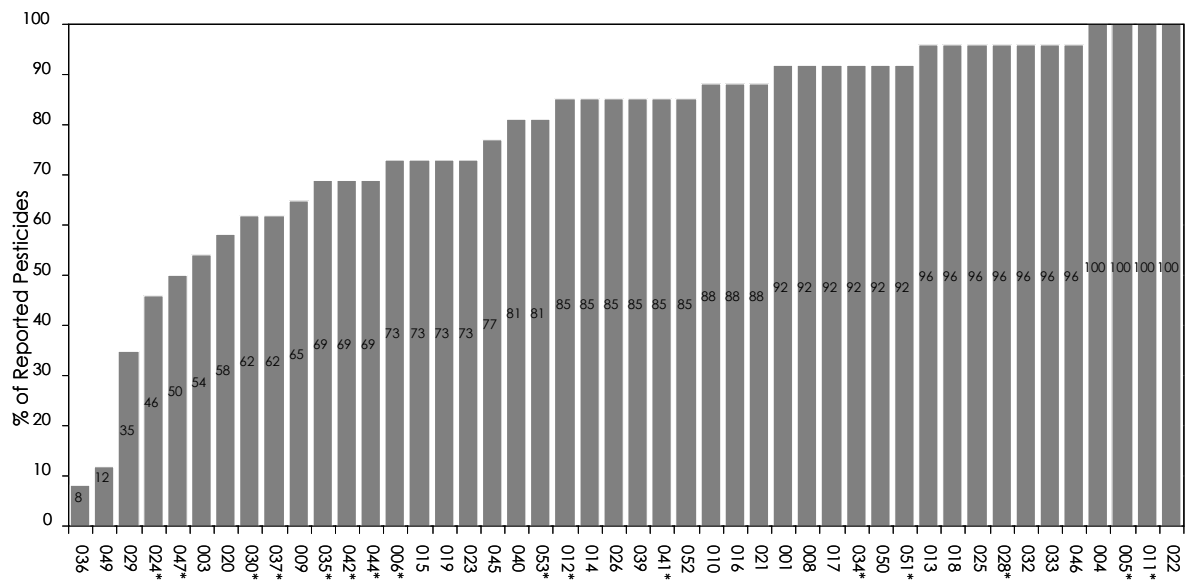
* NRLs from EU

APPENDIX 2. Graphical Representations

**Number of Reported Data by Laboratory
(*NRLs from EU) (26 Pesticides Included)**

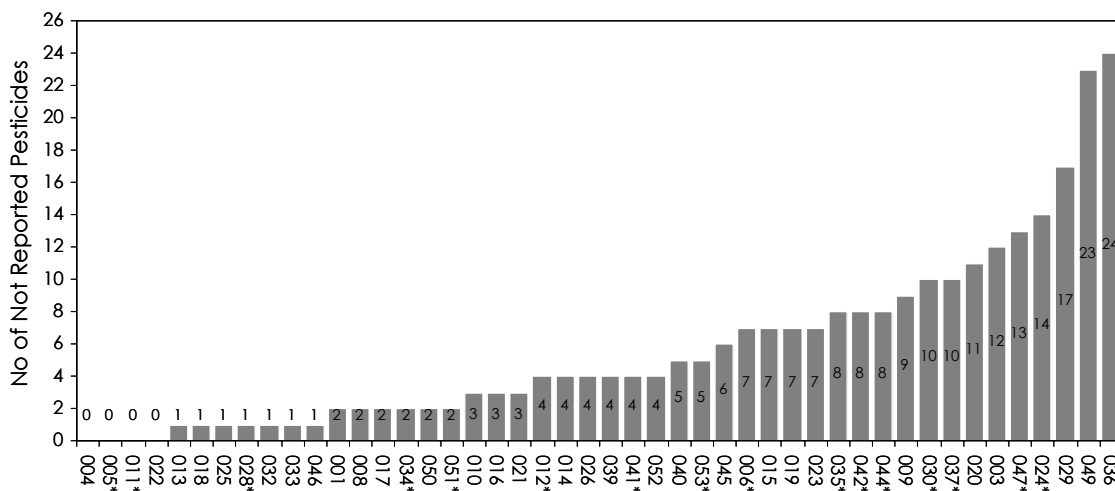


**Number of Reported Data by Laboratory
(*NRLs from EU) (26 Pesticides Included)**

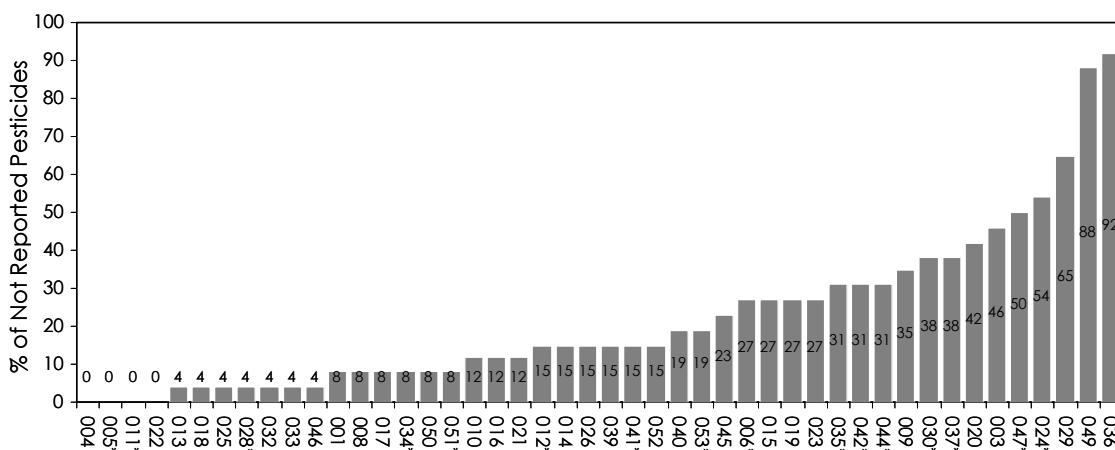


APPENDIX 2. Graphical Representations

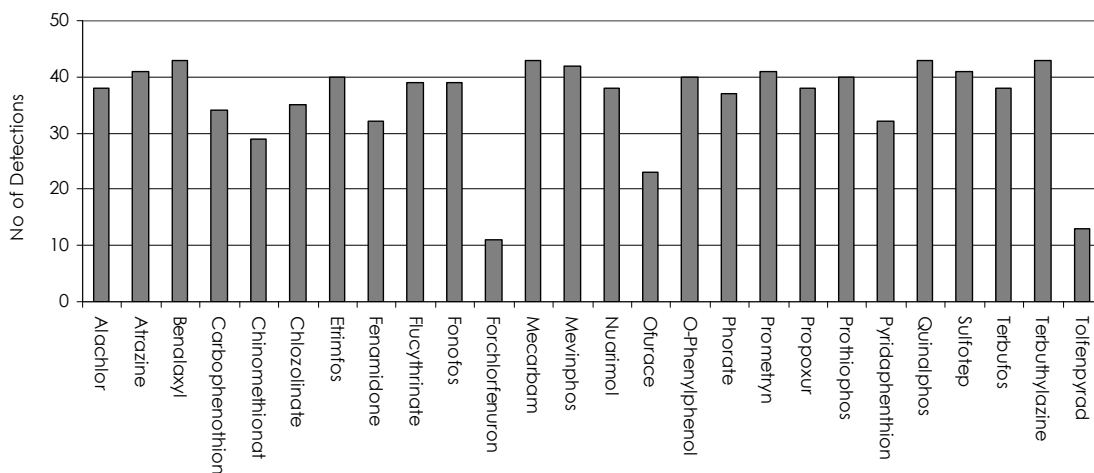
**Not Reported Pesticides
(*NRLs from EU)**



**% of Not Reported Pesticides
(NRLs from EU)**

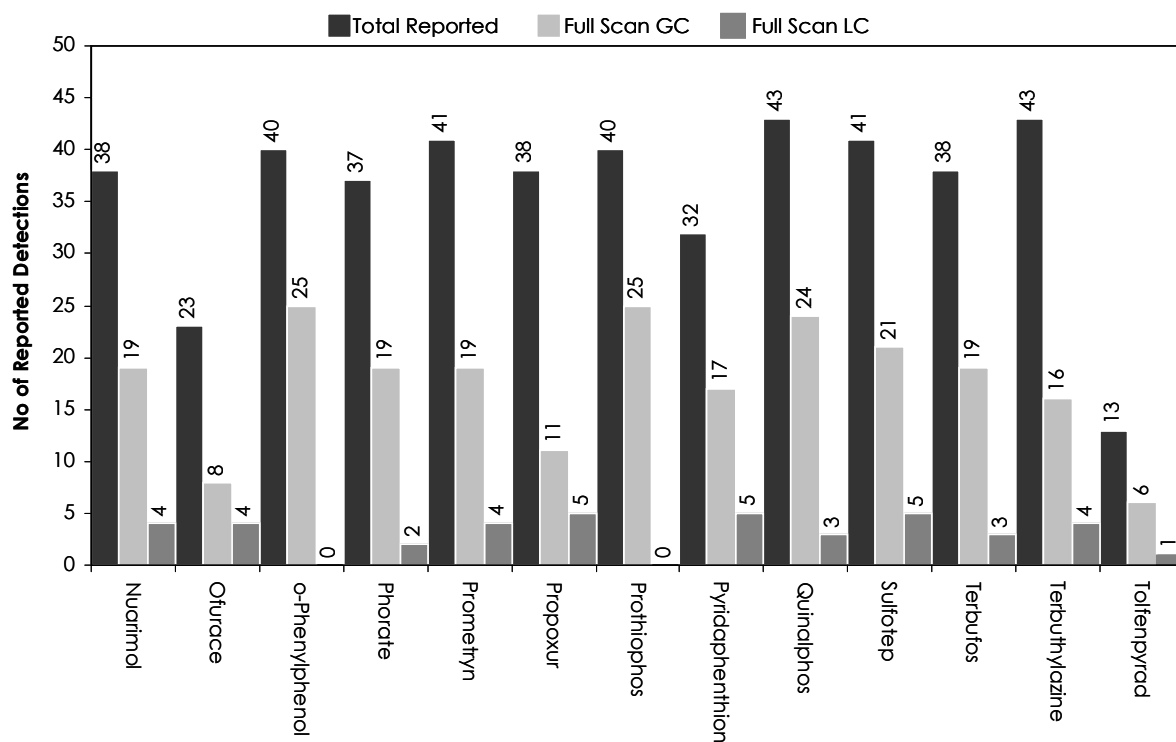
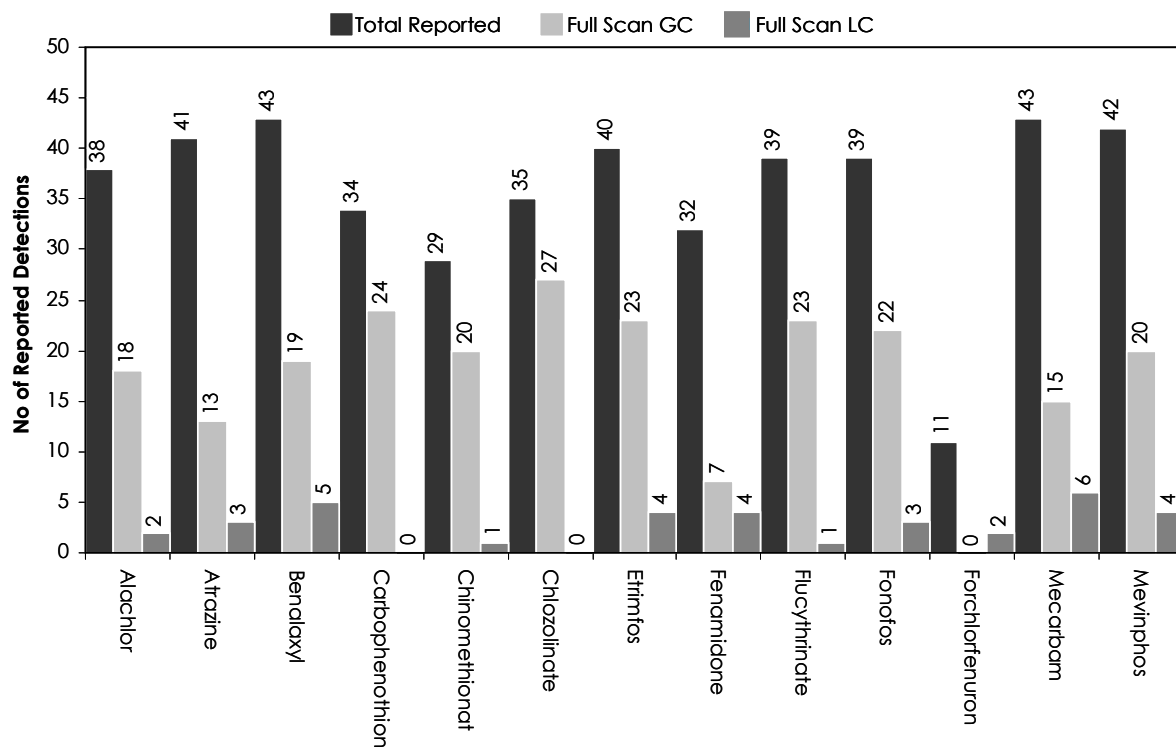


**Number of Reported Data by Pesticide
(46 Laboratories reported data)**



APPENDIX 2. Graphical Representations

Chromatographic Techniques used in Full Scan to determine each pesticide in the test material



APPENDIX 3. Methods used by participants for detecting pesticides.

ALACHLOR															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60		LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	Every week/200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAC	Filter	HSS T3	2	Both	104	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAC		C18	2	Automatic	500	Each Batch
008	359	100	LC	No	MS	Q-TRAP	API 4000 Qtrap	10	ACN		Pursuit XRs Ultra	6	Both	250	Each Batch
010			GC	Yes	MS	Q	HP5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	624	Never
011	0.1	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1000	Always
012	30	20	GC	Yes	MS	IT	Satum 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	-3.6	95	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015		> 70%	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		Targeted Analysis Only
017	1.2	-17.20	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Never
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SiL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1	<1.5%	LC	No	MS	QQQ	Waters Aquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
025	5	13	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
029			GC	Yes	MS	IT	Varian GCmasse 4000	10	ACN	DSPE (MgSO4)	Capillary db 5	5	Both		Each Batch
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone..DCM..PE		DB-5	1	Automatic		
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always

APPENDIX 3. Methods used by participants for detecting pesticides.

ALACHLOR															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	IT	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
036			GC	No	MS	Q	Agilent Tech. 5973 inert	15	Acetone		HP-5MS	2	Both		Always
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.0		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
046	-1.8	0.5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds every batch
047	0.1		LC	No		QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
049	60	20%	LC	No	MS	QQQ	Varian 310-MS	10	ACN	DSPE	XDB-C18	20	Automatic	91	Every 15 days
050	-1.55	6	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	2.9	1.2	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		84%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			GC	Yes	MS	QQQ	Varian	7.5	Acetone	Yes	DB5 MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

ATRAZINE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EtOAc	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EtOAc		C18	2	Automatic	500	Each Batch
006	0.03		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	238	100	LC	No	MS	Q-TRAP	API 4000 Qtrap	10	ACN		Pursuit XRs Ultra	6	Both	250	Each Batch
009	0.00		LC	No	MS	QQQ	Waters Aquity TQD	10	Methanol	Filter	C18 UPLC	6	Automatic	120	
010			LC	No	MS	QQQ	Agilent 6410B	10	ACN	DSPE	C18	2	Both	182	Each Batch
011			LC	No	MS	Q-TRAP	ABI 4000	10	ACN		C18	55	Both	approx. 580	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	14.8	96	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015			LC	No	MS	QQQ	ThermoFinniganTSQQuantum	10	ACN		XterraC18MS	20	Automatic	130	On a Daily Basis
016			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		Targeted Analysis Only
017	0.0	4.06	LC	No	MS	QQQ	HPLC Agilent 1100, MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	LC	No	MS	QQQ	Waters Xevo	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	<0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch

APPENDIX 3. Methods used by participants for detecting pesticides.

ATRAZINE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Cromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1s	<15%	LC	No	MS	QQQ	Waters Aquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024	6 s		LC	No	MS	QQQ	API4000	10	ACN	Freeze out/DSPE(PSA)	Synergie Fusion RP80A	8	Both	400	At least monthly
025	6	13.1	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
028			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both	180	
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM,PE		DB-5	1	Automatic		
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	IT	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035	0.01		GC	No	MS	QQQ	Waters Micromass	10	ACN	PSA	DB5	5	Automatic		Daily
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN	DSPE(PSA)	Reversed Phase	5	Manual	320	Each Batch
041	0.0		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	No	VF-1 ms	3	Both	150	Each Batch
044	<3%	<20%	GC	No	MS	QQQ	Agilent7000a	15	Acetone	No	HP5MSI	2	Automatic	200	Each batch
046	1.2	3.3 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds every batch
047	0.0		LC	No		QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
049	60	20 %	LC	No	MS	QQQ	Varian 310-MS	10	ACN	DSPE	XDB-C18	20	Automatic	91	Every 15 days
050	5.25	15.5	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	0.2	0.6	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly

APPENDIX 3. Methods used by participants for detecting pesticides.

ATRAZINE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Cromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
052	8		LC	No	MS	QQQ	API 4000	10	ACN	QuEChERS	Supelco Ascentis express RP-Amide	10	Automatic	180	Each Batch
053			GC	No	MS	QQQ	Varian	7.5	Acetone	Yes	DBS MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

BENALAXYL															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60sec	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAc	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAc		C18	2	Automatic	500	Each Batch
006	0.06		LC	No	MS	QQQ	Agilent 6410	10	ACN		Eclipse XDB-C18	4	Manual	123	Always
008	1110	946	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	3.8	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	1.5	91	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Both	550	Yearly
014			LC	No	MS	QQQ	Acquity UPLC Quattro Premier XE	15	ACN	QUECHERS	BEH C18 1.7 µm	3	Both		
015		> 70% match	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		Targeted Analysis Only
017	0.0	-5.97	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXI-SSIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	< 0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch

APPENDIX 3. Methods used by participants for detecting pesticides.

BENALAXYL															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024	2.4		LC	No	MS	QQQ	API4000	10	ACN	Freeze out/ DSPE(PSA)	Synergie Fusion RP80A	8	Both	400	At least monthly
025	2	12	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both	180	
029			GC	Yes	MS	IT	Varian GCmasse 4000	10	ACN	DSPE[MgSO4]	Capillary db 5	5	Both		Each Batch
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Automatic	1	
032	0.5	5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN	PSA	C18	5	Both	> 200	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	IT	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035		0.005 Da	LC	Yes	MS	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 poroshell	1	Automatic	2000	
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN	DSPE(PSA)	Reversed Phase	5	Manual	320	Each Batch
041	0.5		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent 7000a	15	Acetone	ne	HP5MS1	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	0.0	1.2 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds with every batch
047	0.02		GC	No		QQQ	Varian 1200L	10	ACN	DSPE	DB-5	5	Automatic		Each Batch

APPENDIX 3. Methods used by participants for detecting pesticides.

BENALAXYL															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
	0.2		LC	No		QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
050	0.85	1	GC	Yes	MS	Q	5975C inert XL E/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	6.1	0.8	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052	6	92%	LC	No	MS	QQQ	API 4000	10	ACN	QuEChERS	Supelco Ascensis express RP-Amide	10	Automatic	180	Each Batch

APPENDIX 3. Methods used by participants for detecting pesticides.

CARBOPHENOTHION															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	12	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAc	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAc		C18	2	Automatic	500	Each Batch
006	0.01		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			GC	Yes	MS	Q	HP5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	624	Never
011	4.4	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1000	Always
012	30	20	GC	Yes	MS	IT	Satum 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	5.6	95	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015		> 70% match	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	5.00	GC	No	MS	Q	GC Shimadzu GC-2010. MS Shimadzu GCMS-QP2010	10	ACN	DSPE	HP-5MS	3	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo ISQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SiL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day

APPENDIX 3. Methods used by participants for detecting pesticides.

CARBOPHENOTHION															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (ul)	Software	No. of Compounds	Frequency of Standard Solution
025	1	10.6	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	GC	Yes	MS	IT	Polaris Q	25	Hexane	LLE	DB5 MS	1	Both	150	Each Time
028			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both	180	
029			GC	Yes	MS	IT	Varian GCmasse 4000	10	ACN	DSPE (MgSO4)	Capillary db 5	5	Both		Each Batch
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	12		GC	Yes	MS	IT	Saturn 2000	30	EIOAc	HFGPC	DB-5 MS	2	Automatic	380	Not for routine
035	0.01		GC	No	MS	QQQ	Waters Micromass	10	ACN	PSA	DB5	5	Automatic		Daily
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.0		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	500	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<20	919	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
050	1.65	1	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP-5-MS	2	Automatic	200	Always
051	4.8	3.5	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		92%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never

APPENDIX 3. Methods used by participants for detecting pesticides.

CHINOMETHIONAT															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	none	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
004			GC	No	MS	QQQ	Waters	10	EIOAc	Filter	Rxi-5sil MS/integra-guard Restek	10	Both	135	Each Batch
005			GC	No	MS	QQQ	Varian 1200L GC3800	10	EIOAc		FactorFour VF-5ms	2	Automatic	500	Each Batch
008	916	924	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	4.6	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	15.2	93	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015		> 70% match	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
017	-0.6	1.00	GC	No	MS	Q	GC Shimadzu GC-2010. MS Shimadzu GCMS-QP2010	10	ACN	DSPE	HP-5MS	3	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXI-5SIL MS	1	Automatic	164	Each Batch
020	< 0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	1.5	ACN	DSPE	HP5MS	10	Both	214	Once a Day
025	3	18.1	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	GC	Yes	MS	IT	Polaris Q	25	Hexane	LLE	DB5 MS	1	Both	150	Each Time

APPENDIX 3. Methods used by participants for detecting pesticides.

CHINOMETHIONAT															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSi	1	Both	110	
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA. C18	HP-5MS	1	Automatic	927	Each Batch
035	0.01		GC	No	MS	QQQ	Waters Micromass	10	ACN	PSA	DB5	5	Automatic		Daily
040	5	10	GC	Yes	MS	TOF	GCT Premier	12.5	EtOAc	GPC	Capillary	1	Both	NIST	
041	0.5		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<20	960	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
050	0.15	2	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	8.8	13.1	GC	Yes	MS	IT	Varian Saturn 2000	1.5	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		90%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM	Yes	Supelco SLB-5MS	1	Both	400	Never
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

CHLOROZOLINATE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
004			GC	No	MS	QQQ	Waters	10	EIOAc	Filter	Rxi-5sil MS/integra-guard Restek	10	Both	135	Each Batch
005			GC	No	MS	QQQ	Varian 1200L GC3800	10	EIOAc		FactorFour VF-5ms	2	Automatic	500	Each Batch
006	0.01		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	8.53	931	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	3.6	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1.000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	8.5	92	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	2 months
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015		> 70% match	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	3.00	GC	No	MS	Q	GC Shimadzu GC-2010. MS Shimadzu GCMS-QP2010	10	ACN	DSPE	HP-5MS	3	Both	52.5 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	< 0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day
025	5	9.6	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	GC	Yes	MS	IT	Polaris Q	25	Hexane	LLE	DB5 MS	1	Both	150	Each Time

APPENDIX 3. Methods used by participants for detecting pesticides.

CHLOROLINATE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Cromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSi	1	Both	110	
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Both		
032	RT locking		GC	Yes	MS	GCMsD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	12		GC	Yes	MS	IT	Saturn 2000	30	EIOAc	HPGPC	DB-5 MS	2	Automatic	380	Not for routine
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	10	GC	Yes	MS	TOF	GCT Premier	12.5	EIOAc	GPC	Capillary	1	Both	NIST	
041	0.6		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	500	Each Batch
044	<3%	<20%	GC	No	MS	QQQ	Agilent7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<20	964	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
050	0.95	1	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	5.3	3.1	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		85%	GC	Yes	MS	Q	Thermo trace DSG	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			GC	Yes	MS	QQQ	Varian	7.5	Acetone	Yes	DB5 MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

ETRIMFOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	12	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	Every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EtOAc	Filter	HSS T3	2	Both	227	Each Batch
005			GC	No	MS	QQQ	Varian 1200L GC3800	10	EtOAc		FactorFour VF-5ms	2	Automatic	500	Each Batch
			LC	No	MS	QQQ	Agilent 6460	10	EtOAc		C18	2	Automatic	500	Each Batch
006	0.01		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	673	957	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	0.5	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1,000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	-5.4	97	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015		> 70% match	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	9.27	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Ng2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
025	3	11.8	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly

APPENDIX 3. Methods used by participants for detecting pesticides.

ETIMFOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Cromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSi	1	Both	110	
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Automatic		
032	0.5	5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN	PSA	C18	5	Both	> 200	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	12		GC	Yes	MS	IT	Saturn 2000	30	EtOAc	HPGFC	DB-5 MS	2	Automatic	380	Not for routine
035		0.005 Da	LC	Yes	MS	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 poroshell	1	Automatic	2000	
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			LC	No	MS	QQQ	API 4000QT	10	ACN	DSPE	C18	5	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.0		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	500	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent 7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<20	915	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
047	0.1	3.7 ppm	LC	Yes		TOF	Agilent 6220	10	ACN	DSPE	C-18	10	Automatic	800	Each Batch
050	-1.35	3	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	3.8	0.8	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		96%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			GC	Yes	MS	QQQ	Varian	7.5	Acetone	Yes	DB5 MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

FENAMIDONE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAc	Filter	HSS T3	2	Both	104	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAc		C18	2	Automatic	500	Each Batch
006	0.02		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	1238	935	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
010			LC	No	MS	QQQ	Agilent 6410B	10	ACN	DSPE	C18	2	Both	182	Each Batch
011			LC	No	MS	Q-TRAP	ABI 4000	10	ACN		C18	55	Both	approx. 580	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	10.3	96	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
016			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		Targeted Analysis Only
017	0.0	-15,43	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	LC	No	MS	QQQ	Waters Xevo	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Each Batch
020	<2.5		LC	No	MS	Q-TRAP	3200 Qtrap	10	ACN	PSA	C18	50	Automatic	library : 500	Each Batch
022	<0.1	<15%	LC	No	MS	QQQ	Waters Acquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024	3		LC	No	MS	QQQ	API4000	10	ACN	Freeze out/DSPE(PSA)	Synergie Fusion RP80A	8	Both	400	At least monthly
025	2	8.1	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both	180	
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always

APPENDIX 3. Methods used by participants for detecting pesticides.

FENAMIDONE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA. C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	IT	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035		0.005 Da	LC	Yes	MS	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 poroshell	1	Automatic	2.000	
039			LC	No	MS	QQQ	API 4000QT	10	ACN	DSPE	C18	5	Automatic	400	Daily
042	6	unit	LC	No	MS	QQQ	Waters Premier	10	Methanol		C18	5	Both	201	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent 7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	1.2	1.0 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Altantis T3	5	Both	461	100 compounds with every batch
047	0.0		LC	No		QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
051	1.2	2.3	LC	No	MS	QQQ	Waters Premier XE	15	Acetone	Partitioning	UPLC Acquity BEH	5	Both	200	Daily
052	4		LC	No	MS	QQQ	API 4000	10	ACN	QuEChERS	Supelco Ascentis express RP-Amide	10	Automatic	180	Each Batch
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

FLUCYTHRINATE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAc	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAc		C18	2	Automatic	500	Each Batch
006	0.02		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	1528	964	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		GC	No	MS	QQQ	Thermo XLS	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	7.5	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1.000	Always
012	30	20	GC	Yes	MS	IT	Satum 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	-14.8	86	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	
014			GC	Yes	MS	Q	Trace DSG	15	ACN	QUECHERS	DB5-MS	0.8	Both		
015		> 70%	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN	PSA	DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	Agilent 5973 MSD	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.6	3.00	GC	No	MS	Q	GC Shimadzu GC-2010. MS Shimadzu GCMS-QP2010	10	ACN	DSPE	HP-5MS	3	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and vary rare cases)
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024			GC	No	MS	QQQ	TSQ Thermo	10	ACN	Freeze out/ DSPE(PSA)	TR5MS	2	Both	450	At least monthly
025	4	17.6	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly

APPENDIX 3. Methods used by participants for detecting pesticides.

FLUCYTHRINATE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
026	0.0	0.0	GC	Yes	MS	IT	Polaris Q	25	Hexane	LLE	DB5 MS	1	Both	150	Each Time
028			GC	Yes	MS	Q	HP-5973N	10	ACN	DSPE	HP5MSi	1	Both		
032	RT locking		GC	Yes	MS	GCM/SD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GC/MSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035	0.01		GC	No	MS	QQQ	Waters Micromass	10	ACN	PSA	DB5	5	Automatic		Daily
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	10	GC	Yes	MS	TOF	GCT Premier	12.5	EtOAc	GPC	Capillary	1	Both	NIST	
041	0.5		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	500	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	< 3%	< 20%	GC	No	MS	QQQ	Agilent 7000a	1.5	Acetone	ne	HP5MSi	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<30	954	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
047	0.04		GC	No		QQQ	Varian 1200L	10	ACN	DSPE	DB-5	5	Automatic		Each Batch
047	0.1		LC	No		QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
050	1.72	1.3	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	0.8	2.9	GC	Yes	MS	IT	Varian Saturn 2000	1.5	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
053			GC	No	MS	QQQ	Varian	7.5	Acetone	Yes	DB5 MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

FONOFOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	12	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600 pesticides	Every week
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	AB API5000	10	EIOAC	Filter	HSS T3	2	Both	227	Every Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAC		C18	2	Automatic	500	Every Batch
006	0.02		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once A Month
008	660	947	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Every Batch
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			GC	Yes	MS	Q	HP5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	624	No standard used
011	0.2	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP-5MS	5	Both	approx. 1000	Every Batch
012	30	20	GC	Yes	MS	IT	Satum 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	-3.0	96	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	None
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0	1.00	GC	No	MS	Q	GC Shimadzu GC-2010, MS Shimadzu GCMS-QP2010	10	ACN	DSPE	HP-5MS	3	Both	Method: 525, Library: 590	Every Batch
018	0	0%	LC	No	MS	QQQ	Waters Xevo	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Every Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 in method 500 library	At the method setup (and in some very rare cases)
020	< 0.5	%	GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	Method : 148 Library : NIST	Every Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1	<15%	LC	No	MS	QQQ	Waters Aquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once A Day
023	0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Every Batch

APPENDIX 3. Methods used by participants for detecting pesticides.

FONOFOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
025	3	9.7	GC	Yes	MS	TOF	Pegasus IV	10	AcN	DSPE(PSA)	HP-5MS	5	Both	650	Every week
026	0	0%	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Every Batch
028			GC	Yes	MS	Q	HP-5973N	10	ACN	DSPE	HP5MSI	1	Both		
029			GC	Yes	MS	IT	Varian GCmasse 4000	10	ACN	DSPE (MgSO4)	Capillary db 5	5	Both		Every Batch
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Every Batch
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA. C18	HP-5MS	1	Automatic	927	Every Batch
034	1.2		GC	Yes	MS	TOF	Saturn 2000	30	EtOAc	HPGPC	DB-5 MS	2	Automatic	380	No
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed phase	5	Manual	320	Every Batch
041	0.5		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE (PSA)	VF-1 ms	3	Both	150	Every Batch
042	5	unit	GC	No	MS	QQQ	VARIAN 320MS	50	Acetone	L/L	DB5	8	Both	128	Every Batch
044	<3%	<20%	GC	No	MS	QQQ	Agilent7000a	15	Acetone		HP5MSI	2	Automatic	200	Every Batch
045	0	0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM	0	1	Both	220	Dayly
046	-0.6	0.7 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	Every Batch
050	-0.95	5	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	2.6	3.1	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		9.6%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM	No	Supelco SLB-5MS	1	Both	400	Never
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

FORCHLORFENURON															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7Å µm	5	Both	600	every week 200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EFOAC	Filter	HSS T3	2	Both	104	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EFOAC		C18	2	Automatic	500	Each Batch
011			LC	No	MS	Q-TRAP	ABI 4000	10	ACN		C18	55	Both	approx. 580	Always
013			LC	No	MS	QQQ	Applied 3200 Qtrap	10	ACN	MgSO4/PSA	Athlantis T3	10	Both	230	Weekly
018	0.0	0.0	LC	No	MS	QQQ	Waters Xevo	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Each Batch
022	<0.1	<15%	LC	No	MS	QQQ	Waters Aquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
028			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both		
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
046	8.4	3.5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Athlantis T3	5	Both	461	100 compounds with every batch
050	-0.006	-3.84	LC	No	MS	QQQ	G6410A	10	ACN	PSA	Zorbax-Eclipse XDB-C8	20	Automatic	106	Always

APPENDIX 3. Methods used by participants for detecting pesticides.

MECARBAM															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAC	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAC		C18	2	Automatic	500	Each Batch
006	0.01		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	864	978	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		LC	No	MS	QQQ	Waters Acquity TQD	10	Methanol	Filter	C18 UPLC	6	Automatic	120	
010			LC	No	MS	QQQ	Agilent 6410B	10	ACN	DSPE	C18	2	Both	182	Each Batch
011	2.4	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1.000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 variation	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	-0.4	93	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			LC	No	MS	QQQ	Acquity UPLC Quattro Premier XE	15	ACN	QuEChERS	BEH C18 1.7 µm	3	Both		
015		> 70%	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	-6.10	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 meth 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP-5-MS	1	Both	150 meth 500 library	Method Setup (and rare cases)
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1	<1.5%	LC	No	MS	QQQ	Waters Acquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024	1.2		LC	No	MS	QQQ	API4000	10	ACN	Freeze out/DSPE(PSA)	Synergie Fusion RP80A	8	Both	400	At least monthly
025	3	6.9	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSI	1	Both	110	

APPENDIX 3. Methods used by participants for detecting pesticides.

MECARBAM															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
029			GC	Yes	MS	IT	Varian GCmasse 4000	10	ACN	DSPE(MgSO4)	Capillary db 5	5	Both		Each Batch
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Automatic		
032	0.5	5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN	PSA	C18	5	Both	> 200	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035		0.005 Da	LC	Yes	MS	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 poroshell	1	Automatic	2000	
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			LC	No	MS	QQQ	API 4000QT	10	ACN	DSPE	C18	5	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.5		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	500	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	1.2	0.3 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds every batch
047	0.1		LC	No	MS	QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
050	-0.004	-5.31	LC	No	MS	QQQ	G6410A	10	ACN	PSA	Zorbax-Eclipse XDB-C8	20	Automatic	106	Always
051	0.6	0.1	LC	No	MS	QQQ	Waters Premier XE	15	Acetone	Partitioning	UPLC Acquity BEH	5	Both	200	Daily
052	6	93%	LC	No	MS	QQQ	API 4000	10	ACN	QUECHERS	Sup. Ascentis express RP-Amide	10	Automatic	180	Each Batch
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

MEVINPHOS														
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7Åµm	5	Both	600	every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			GC	No	QQQ	Waters	10	EFOAC	Filter	Rxi-5sil MS/integra-guard Restek	10	Both	135	Each Batch
005			GC	No	QQQ	Varian 1200L GC3800	10	EFOAC		FactorFour VF-5ms	2	Automatic	500	Each Batch
006	0.0		GC	No	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	170	100	LC	No	Q-TRAP	API 4000 Qtrap	10	ACN		Pursuit XRs Ultra	6	Both	250	Each Batch
009	0.00		LC	No	QQQ	Waters Aquity TQD	10	Methanol	Filter	C18 UPLC	6	Automatic	120	
010			LC	No	QQQ	Agilent 6410B	10	ACN	DSPE	C18	2	Both	182	Each Batch
011	3.0	0.0	GC	Yes	Q	HP5975C	10	ACN	PSA	HP-5MS	5	Both	approx. 1.000	Always
012	30	20	GC	Yes	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	-0.3	95	GC	Yes	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			GC	Yes	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015		> 70% match	GC	Yes	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			GC	Yes	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	1.44	LC	No	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	<0.5		GC	Yes	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch

APPENDIX 3. Methods used by participants for detecting pesticides.

MEVINPHOS														
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
021			GC	Yes	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		LC	No	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024	4.2		LC	No	QQQ	API 4000	10	ACN	Freeze out/ DSPE(PSA)	Synergie Fusion RP80A	8	Both	400	At least monthly
025	3	19.5	GC	Yes	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			GC	No	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSi	1	Both	110	
029			GC	Yes	IT	Varian GCmasse 4000	10	ACN	DSPE (MgSO4)	Capillary db 5	5	Both		Each Batch
030			GC	Yes	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Automatic		
032	0.5	5 ppm	LC	Yes	Orbitrap	Exactive	10	ACN	PSA	C18	5	Both	> 200	Always
033	9	20%	GC	Yes	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035		0.005 Da	LC	Yes	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 poroshell	1	Automatic	2,000	
039			GC	No	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	QQQ	Quattro Premier XE	10	ACN	DSPE(PSA)	Reversed Phase	5	Manual	320	Each Batch
041	0.6		GC	Yes	QQQ	Varian 3800 GC + 320-MS	10	ACN		VF-1 ms	3	Both	500	Each Batch
042	6	unit	LC	No	QQQ	Waters Premier	10	Methanol		C18	5	Both	201	Each Time
044	<3%	<20%	GC	No	QQQ	Agilent 7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<40	893	GC	Yes	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
050	-0.7	5.5	GC	Yes	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	1.0	12.4	GC	Yes	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly

APPENDIX 3. Methods used by participants for detecting pesticides.

MEVINPHOS														
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
052		99%	GC	Yes	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			GC	No	QQQ	Varian	7.5	Acetone	Yes	DB5 MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

NUARIMOL																
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Full Scan	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	No	10	ACN	DSPE	Waters C18 2.1x50mmx1.7µm	5	Both	600	every week
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	Yes	15	MINI LUKE	No	Rx-5sil MS/ C18	5	Both	345	Once a Day
004			GC	No	MS	QQQ	Waters	No	10	EIOAC	Filter	integra-guard Restek	10	Both	37	Each Batch
005			GC	No	MS	QQQ	Varian 1200L GC3800	No	10	EIOAC		FactorFour VF-5ms	2	Automatic	500	Each Batch
008	11.55	975	GC	Yes	MS	TOF	LECO Pegasus IV	Yes	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.01		LC	No	MS	QQQ	Waters Acquity TQD	No	10	Methanol	Filter	C18 UPLC	6	Automatic	120	
010			GC	Yes	MS	Q	HP5973 MSD	Yes	10	ACN	DSPE	HP-5MSI	20	Both	624	Never
011			LC	No	MS	Q-TRAP	ABI 4000	No	10	ACN		C18	55	Both	approx. 580	Always
012	30	20	LC	Yes	MS	QQQ	API 3200 QT	Yes	10	ACN	DSPE	Fusion C18	20	Automatic	150	Daily
013	11.5	87	GC	Yes	MS	Q	Agilent 5975	Yes	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			LC	No	MS	QQQ	Acquity UPLC Quattro Premier XE	No	15	ACN	QuEChERS	BEH C18 1.7 µm	3	Both		
015		> 70% match	GC	Yes	MS	IT	ThermoFinnigan Polaris Q	Yes	10	ACN		DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	Yes	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	-0.50	LC	No	MS	QQQ	HPLC Agilent 1100, MS API 3000	No	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	LC	No	MS	QQQ	Waters Xevo	No	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	Yes	10	ACN	DSPE	HP-5MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
021			GC	Yes	MS	IT	Varian 4000	Yes	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1	<15%	LC	No	MS	QQQ	Waters Acquity TQD	No	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	No	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
025	1	9.3	GC	Yes	MS	TOF	LECO Pegasus IV	Yes	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	No	15	ACN	LLE	C18	10	Both	360	Each Time
028			GC	Yes	MS	Q	HP-5973N	Yes	10	ACN	DSPE	HP-5MSi	1	Both		
030			GC	Yes	MS	TOF	Leco Pegasus	Yes	15	Acetone, DCM, PE		DB-5	1	Automatic		

APPENDIX 3. Methods used by participants for detecting pesticides.

NUARIMOL																
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Full Scan	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
032	RT locking		GC	Yes	MS	GCMSD	Agilent	Yes	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	Yes	10	ACN	PSA. C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	Yes	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035			GC	Yes	MS	Q	Waters Micromass	Yes	10	ACN	PSA	DB5	5	Manual	500	
039			GC	No	MS	QQQ	Agilent 7000B	No	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	10	GC	Yes	MS	TOF	GCT Premier	Yes	12.5	EtOAc	GPC	Capillary	1	Both	NIST	
041	0.0		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	No	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	No	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent 7000a	No	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	Yes	50	Acetone	DCM		1	Both	220	Daily
046	-0.6	0.2 ppm	LC	Yes	MS	Orbitrap	Exactive	Yes	10	ACN		Atlantis T3	5	Both	461	100 compounds with every batch
050	2.05	5.5	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	Yes	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	3.9	3.2	GC	Yes	MS	IT	Varian Saturn 2000	Yes	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		92%	GC	Yes	MS	Q	Thermo trace DSQ	Yes	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			GC	Yes	MS	QQQ	Varian	Yes	7.5	Acetone	Yes	DB5 MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

OFURACE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EtOAc	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EtOAc		C18	2	Automatic	500	Each Batch
008	1098	889	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		LC	No	MS	QQQ	Waters Acquity TQD	10	Methanol	Filter	C18 UPLC	6	Automatic	120	
011	6.3	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1,000	Always
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	10.36	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 meth 590 lib	Always
018	0.0	0.0	LC	No	MS	QQQ	Waters Xevo	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1	<1.5%	LC	No	MS	QQQ	Waters Acquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
025	4	14.7	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both		
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
039			LC	No	MS	QQQ	API 4000QT	10	ACN	DSPE	C18	5	Automatic	400	Daily
046	0.0	0.4 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds every batch
050	-0.008	3.79	LC	No	MS	QQQ	G6410A	10	ACN	PSA	Zorbax-Eclipse XDB-C8	20	Automatic	106	Always
051	0.0	4.6	LC	No	MS	QQQ	Waters Premier XE	15	Acetone	Partitioning	UPLC Acquity BEH	5	Both	200	Daily
052		80%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

o-PHENYLPHENOL															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	12	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
004			GC	No	MS	QQQ	Waters	10	EtOAc	Filter	Rxi-5sil MS/ integra-guard Restek	10	Both	135	Each Batch
005			GC	No	MS	QQQ	Varian 1200L GC3800	10	EtOAc		FactorFour VF-5ms	2	Automatic	500	Each Batch
006	0.0		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	551	979	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	3.5	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1.000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	7.1	97	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	2 months
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	2.00	GC	No	MS	Q	GC Shimadzu GC-2010, MS Shimadzu GCMS-QP2010	10	ACN	DSPE	HP-5MS	3	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	<0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		GC	No	MS	IT	Varian Saturn 2000	10	ACN	DSPE	CP sil 8 CB/MS (Varian)	2	Manual		Each Time
024			GC	No	MS	QQQ	TSQ Thermo	10	ACN	Freeze out/ DSPE(PSA)	TR5MS	2	Both	450	At least monthly
025	4	14.7	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly

APPENDIX 3. Methods used by participants for detecting pesticides.

o-PHENYLPHENOL															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Cromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
026	0.0	0.0	GC	Yes	MS	IT	Polaris Q	25	Hexane	LLE	DB5 MS	1	Both	150	Each Time
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSI	1	Both	110	
029			GC	Yes	MS	IT	Varian GCmasse 4000	10	ACN	DSPE(MGSO4)	Capillary db 5	5	Both		Each Batch
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	12		GC	Yes	MS	IT	Saturn 2000	30	EtOAc	HPGPC	DB-5 MS	2	Automatic	380	Not for routine
035	0.01		GC	No	MS	QQQ	Waters Micromass	10	ACN	PSA	DB5	5	Automatic		Daily
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	10	GC	Yes	MS	TOF	GCT Premier	12.5	EtOAc	GPC	Capillary	1	Manual	144	Each Batch
041	1.2		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<20	961	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
047	0.02		GC	No		QQQ	Varian 1200L	10	ACN	DSPE	DB-5	5	Automatic		Each Batch
050	-0.05	0.5	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	0.5	0.5	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Daily
052		80%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never

APPENDIX 3. Methods used by participants for detecting pesticides.

PHORATE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	12	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EtOAc	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EtOAc		C18	2	Automatic	500	Each Batch
006	0.03		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	616	929	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			LC	No	MS	QQQ	Agilent 6410B	10	ACN	DSPE	C18	2	Both	182	Each Batch
011	-0.4	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx.1.000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
	30	20	LC	Yes	MS	QQQ	API 3200 QT	10	ACN	DSPE	Fusion C18	20	Automatic	150	Daily
013	-2.5	56	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	2 months
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		Targeted Analysis Only
017	-1.2	-19.44	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SiL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and vary rate cases)
020	<0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024			GC	No	MS	QQQ	TSQ Thermo	10	ACN	Freeze out/DSPE(PSA)	TR5MS	2	Both	450	At least monthly

APPENDIX 3. Methods used by participants for detecting pesticides.

PHORATE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
025	1	11.0	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	GC	Yes	MS	IT	Polaris Q	25	Hexane	LLE	DB5 MS	1	Both	150	Each Time
028			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both	180	
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Automatic		
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	12		GC	Yes	MS	IT	Saturn 2000	30	EIOAC	HPGFC	DB-5 MS	2	Automatic	380	Not for routine
	2.50%		LC	No	MS/MS	MS/MS	Waters Premier XE	10	ACN		Acquity UPLC HSS T3	20	Both	200	Routine Target Suite
035	0.01		GC	No	MS	QQQ	Waters Micromass	10	ACN	PSA	DB5	5	Automatic		Daily
039			LC	No	MS	QQQ	API 4000QT	10	ACN	DSPE	C18	5	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.5		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
042	5	unif	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	-1.8	0.3 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds with every batch
	0.0	2.5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds with every batch
	-0.6	0.4 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds with every batch
047	0.02		GC	No		QQQ	Varian 1200L	10	ACN	DSPE	DB-5	5	Automatic		Each Batch
050	-1.2	9.5	GC	Yes	MS	Q	5975C inerf XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	2.6	5.6	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
	1.2	1.7	LC	No	MS	QQQ	Waters Premier XE	15	Acetone	Partitioning	UPLC Acquity BEH	5	Both	200	Weekly
053			GC	No	MS	QQQ	Varian	7.5	Acetone	Yes	DB5 MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

PROMETRYN															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAc	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAc		C18	2	Automatic	500	Each Batch
006	0.0		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	310	100	LC	No	MS	Q-TRAP	API 4000 Qtrap	10	ACN		Pursuit XRs Ultra	6	Both	250	Each Batch
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	3.5	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1.000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	11.8	95	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	yearly
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015			LC	No	MS	QQQ	ThermoFinnigan TSQQuantum	10	ACN		XterraC18MS	20	Automatic	130	On a Daily Basis
016			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		Targeted Analysis Only
017	-0.6	-20.39	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo ISQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SiL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	<0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1	<15%	LC	No	MS	QQQ	Waters Aquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time

APPENDIX 3. Methods used by participants for detecting pesticides.

PROMETRYN															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
024			GC	No	MS	QQQ	TSQ Thermo	10	ACN	Freeze out/ DSPE(PSA)	TR5MS	2	Both	450	At least monthly
025	3	10.2	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	GC	Yes	MS	IT	Polaris Q	25	Hexane	LLE	DB5-MS	1	Both	150	Each Time
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSi	1	Both	110	
029			GC	Yes	MS	IT	Varian GCmasse 4000	10	ACN	DSPE (MgSO4)	Capillary db 5	5	Both		Each Batch
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone.DCM:PE		DB-5	1	Automatic		
032	0.5	5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN	PSA	C-18	5	Both	> 200	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035			GC	Yes	MS	Q	Waters Micromass	10	ACN	PSA	DB5	5	Manual	500	
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.5		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
044	<2.5%	< 20%	LC	No	MS	QQQ	API 4000	15	ACN	PSA	SpeedRod	20	Manual	153	Each batch
046	<20	926	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek Cl Pesticides	10	Both	700	235 compounds with every batch
047	0.01		GC	No		QQQ	Varian 1200L	10	ACN	DSPE	DB-5	5	Automatic		Each Batch
047	0.1		LC	No		QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
050	2.2	4	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	1.2	0.7	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		93%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C-18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

PROPOXUR															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EtoAc	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EtoAc		C18	2	Automatic	500	Each Batch
006	0.03		LC	No	MS	QQQ	Agilent 6410	10	ACN		Eclipse XDB-C18	4	Manual	123	Always
008	204	100	LC	No	MS	Q-TRAP	API 4000 Qtrap	10	ACN		Pursuit XRs Ultra	6	Both	250	Each Batch
009	0.00		LC	No	MS	QQQ	Waters Acquity TQD	10	Methanol	Filter	C18 UPLC	6	Automatic	120	
010			LC	No	MS	QQQ	Agilent 6410B	10	ACN	DSPE	C18	2	Both	182	Each Batch
011			LC	No	MS	Q-TRAP	ABI 4000	10	ACN		C18	55	Both	approx. 580	Always
013	0.7	94	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			LC	No	MS	QQQ	Acquity UPLC Quattro Premier XE	15	ACN	QUECHERS	BEH C18 1.7 µm	3	Both		
015			LC	No	MS	QQQ	ThermoFinniganTSQQuantum	10	ACN		XterraC18MS	20	Automatic	130	On a Daily Basis
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	-0.52	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	LC	No	MS	QQQ	Waters Xevo	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	<2.5		LC	No	MS	Q-TRAP	3200 Qtrap	10	ACN	PSA	C18	50	Automatic	library : 500	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1s	<1.5%	LC	No	MS	QQQ	Waters Acquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time

APPENDIX 3. Methods used by participants for detecting pesticides.

PROPOXUR															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
025	3	10.8	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
027			LC	No	MS	QQQ	Agilent 6410	10	ACN	PSA+MgSO4	Fusion C18	10	Both	108	Always
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSI	1	Both	110	
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Automatic		
032	0.5	5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN	PSA	C18	5	Both	> 200	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
039			LC	No	MS	QQQ	API 4000QT	10	ACN	DSPE	C18	5	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.0		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE with PSA	VF-1 ms	3	Both	500	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent 7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	-1.2	1.7 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds with every batch
050	-0.01	9.01	LC	No	MS	QQQ	G6410A	10	ACN	PSA	Zorbax-Eclipse XDB-C8	20	Automatic	106	Always
051	0.7	7.4	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		95%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

PROTHIOPHOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Cromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	12	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7 µm	5	Both	600	every week 200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAc	Filter	HSS T3	2	Both	227	Each Batch
005			GC	No	MS	QQQ	Varian 1200L GC3800	10	EIOAc		FactorFour. VF-5ms	2	Automatic	500	Each Batch
006	0.0		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	966	921	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	Each Batch
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	2.5	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1,000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	2.4	93	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			GC	Yes	MS	Q	Trace DSG	15	ACN	QueChERS	DB5-MS	0.8	Both		
015		> 70% match	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	-0.6	2.00	GC	No	MS	Q	GC Shimadzu GC-2010. MS Shimadzu GCMS-QP2010	10	ACN	DSPE	HP-5MS	3	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day

APPENDIX 3. Methods used by participants for detecting pesticides.

PROTHIOPHOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
025	1	8.8	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	GC	Yes	MS	IT	Polaris Q	25	Hexane	LLE	DB5 MS	1	Both	150	Each Time
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSi	1	Both	110	
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone; DCM; PE		DB-5	1	Automatic		
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	12		GC	Yes	MS	IT	Saturn 2000	30	EIOAc	HPGPC	DB-5 MS	2	Automatic	380	Not for routine
035	0.01		GC	No	MS	QQQ	Waters Micromass	10	ACN	PSA	DB5	5	Automatic		Daily
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.6		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	500	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent 7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<20	946	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
047	0.01		GC	No		QQQ	Varian 1200L	10	ACN	DSPE	DB-5	5	Automatic		Each Batch
050	0.95	3.5	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	5.5	1.2	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Daily
052		95%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			GC	No	MS	QQQ	Varian	7.5	Acetone	Yes	DB5 MS	1	Automatic	100	

APPENDIX 3. Methods used by participants for detecting pesticides.

PYRIDAPHENTHION															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAC	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAC		C18	2	Automatic	500	Each Batch
008	1204	974	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		LC	No	MS	QQQ	Waters Acquity TQD	10	Methanol	Filter	C18 UPLC	6	Automatic	120	
010			GC	Yes	MS	Q	HP5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	624	Never
011	5.8	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1.000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	5.4	91	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			LC	No	MS	QQQ	Acquity UPLC Quattro Premier XE15	10	ACN	QuEChERS	BEH C18 1.7 µm	3	Both		
015		> 70% match	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN	PSA	DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	0.0	-10.51	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	LC	No	MS	QQQ	Waters Xevo	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Each Batch
020	<0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.1	<15%	LC	No	MS	QQQ	Waters Acquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
025	2	14.1	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
028			GC	Yes	MS	Q	HP-5973N	10	ACN	DSPE	HP5MSI	1	Both		
032	0.5	5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN	PSA	C18	5	Both	> 200	Always

APPENDIX 3. Methods used by participants for detecting pesticides.

PYRIDAPHENTHION															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035		0.005 Da	LC	Yes	MS	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 poroshell	1	Automatic	2000	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
041	0.6		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	500	Each Batch
044	<2.5%	< 20%	LC	No	MS	QQQ	API 4000	15	ACN	PSA	SpeedRod	20	Manual	153	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	1.8	2.0 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds every batch
050	2.45	5.5	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	4.4	6.9	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		88%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

QUINALPHOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7Åµm	5	Both	600	every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	1.5	MINI LUKE	No	C18	5	Both	345	Once a Day
004			GC	No	MS	QQQ	Waters	10	EtOAc	Filter	Rxi-5sil MS/integra-guard Restek	10	Both	135	Each Batch
005			GC	No	MS	QQQ	Varian 1200L GC3800	10	EtOAc		FactorFour VF-5ms	2	Automatic	500	Each Batch
006	0.03		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	8.75	964	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	2.9	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1,000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	4.0	89	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QUECHERS	DB5-MS	0.8	Both		
015		> 70%	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN	PSA	DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
017	-1.2	-12.21	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	<0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch

APPENDIX 3. Methods used by participants for detecting pesticides.

QUINALPHOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	1.5	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024			GC	No	MS	QQQ	TSQ Thermo	10	ACN	Freeze out/ DSPE(PSA)	TR5MS	2	Both	450	At least monthly
025	2	10	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	1.5	ACN	LLE	C18	10	Both	360	Each Time
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSi	1	Both	110	
029			GC	Yes	MS	IT	Varian GCmass 4000	10	ACN	DSPE (MgSO4)	Capillary db 5	5	Both		Each Batch
030			GC	Yes	MS	TOF	Leco Pegasus	1.5	Acetone, DCM, PE		DB-5	1	Automatic		
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035		0.005 Da	LC	Yes	MS	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 poroshell	1	Automatic	2000	
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.6		GC	Yes	MS	QQQ	Varian 3800 GC + 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	500	Each Batch
042	6	unit	LC	No	MS	QQQ	Waters Premier	10	Methanol		C18	5	Both	201	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent/7000a	1.5	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily

APPENDIX 3. Methods used by participants for detecting pesticides.

QUINALPHOS															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Cromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (ul)	Software	No. of Compounds	Frequency of Standard Solution
046	<20	929	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
050	-0.05	6.5	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	3.8	3.8	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052	6	93%	LC	No	MS	QQQ	API 4000	10	ACN	QuEChERS	Supelco Ascentis express RP-Amide	10	Automatic	180	Each Batch
053			LC	No	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

SULFOTEP															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	60	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
003	0.30	0.05 Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	15	MINI LUKE	No	C18	5	Both	345	Once a Day
004			GC	No	MS	QQQ	Waters	10	EIOAc	Filter	Rxi-5sil MS/integra-guard Restek	10	Both	135	Each Batch
005			GC	No	MS	QQQ	Varian 1200L GC3800	10	EIOAc		FactorFour. VF-5ms	2	Automatic	500	Each Batch
006	0.03		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	604	938	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
009	0.00		GC	Yes	MS	IT	Thermo Polaris Q	10	ACN	PSA	Capillary GC	1	Automatic	130	
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011	-0.7	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1.000	Always
012	30	20	GC	Yes	MS	IT	Satum 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	-8.1	98	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
015		> 70%	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		Targeted Analysis Only
017	0.0	4.70	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SiL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP-5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	<0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch

APPENDIX 3. Methods used by participants for detecting pesticides.

SULFOTEP															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	15	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
024			GC	No	MS	QQQ	TSQ Thermo	10	ACN	Freeze out/DSPE(PSA)	TR5MS	2	Both	450	At least monthly
025	1	12.1	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSi	1	Both	110	
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Automatic		
032	RT locking		GC	Yes	MS	GCM/SD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GC/MSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	60	10 ppm	LC	Yes	MS	TOF	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
035		0.005 Da	LC	Yes	MS	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 poroshell	1	Automatic	2.000	
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
041	0.5		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	2.4	1.5 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds with every batch
050	-1.15	1	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
051	2.9	0.6	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly
052		95%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

TERBUFOS															
Laboratory Code	RT Tolerance	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	none	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EFOAC	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EFOAC		C18	2	Automatic	500	Each Batch
006	0.03		GC	No	MS	Q	Agilent 6890/5973	10	ACN	DSPE	HP-5MS	1	Manual	177	Once a Month
008	653	959	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
	308	100	LC	No	MS	Q-TRAP	API 4000 Qtrap	10	ACN		Pursuit XRs Ultra	6	Both	250	Each Batch
010			LC	No	MS	QQQ	Agilent 6410B	10	ACN	DSPE	C18	2	Both	182	Each Batch
011	-0.5	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1,000	Always
012	30	20	GC	Yes	MS	IT	Saturn 4000 varian	10	ACN	DSPE	DB5MS	1	Both	350	Daily
013	-5	98	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	2 months
014			LC	No	MS	QQQ	Acquity UPLC Quattro Premier XE	15	ACN	QuEChERS	BEH C18 1.7 µm	3	Both		
015		> 70%	GC	Yes	MS	IT	ThermoFinniganPolarisQ	10	ACN		DB-5MS	8	Both	500	Often
016			GC	Yes	MS	Q	5973	10	ACN	PSA	DB-35ms	2	Both		Targeted Analysis Only
			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		Targeted Analysis Only
017	-1.8	-4.66	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	LC	No	MS	QQQ	Waters Xevo	10	Acetone/PE/DCM	Na2SO4	C18	2	Automatic	250	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
020	<0.5		GC	Yes	MS	IT	Varian 4000	10	ACN	PSA	5 % diphenyl	1	Automatic	148 method NIST library	Each Batch
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly

APPENDIX 3. Methods used by participants for detecting pesticides.

TERBUFOS															
Laboratory Code	RT Tolerance	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
022	<0.1	<15%	LC	No	MS	QQQ	Waters Aquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time
025	2	12.5	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			GC	Yes	MS	Q	HP-5973N	10	ACN	DSPE	HP5MSi	1	Both		
030			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both		
032	RT locking		GC	Yes	MS	TOF	Leco Pegasus	15	Acetone, DCM, PE		DB-5	1	Automatic		
033	9	20%	GC	Yes	MS	GC/MSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
034	60	10 ppm	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	2.50%		LC	No	MS/MS	MS/MS	Agilent 6230	10	ACN		Zorbax eclipse plus C18	3	Automatic	517	Not for routine
034	2.50%		LC	No	MS/MS	MS/MS	Waters Premier XE	10	ACN		Acquity UPLC HSS T3	20	Both	200	Routine Target Suite
037			GC	Yes	MS	Q	Waters Premier XE	10	ACN		Acquity UPLC HSS T3	20	Both	200	Routine Target Suite
039			GC	No	MS	QQQ	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
040	5	20	GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
041	0.6		LC	No	MS	QQQ	Quattro Premier XE	10	ACN		Reversed Phase	5	Manual	320	Each Batch
042	5	unit	GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN	DSPE(PSA)	VF-1 ms	3	Both	150	Each Batch
045	0.0	0.0	GC	No	MS	QQQ	Varian 320MS	50	Acetone	L/L	DB5	8	Both	128	Each Time
046	-6.6	1.1 ppm	LC	Yes	MS	Orbitrap	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	0.0	-0.8 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds every batch
047	0.0	-2.9 ppm	LC	Yes	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds every batch
047	0.0		LC	No	MS	Orbitrap	Exactive	10	ACN		Atlantis T3	5	Both	461	100 compounds every batch
047	0.0		LC	No	MS	QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
050	-0.7	3	GC	Yes	MS	Q	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
051	3.9	0.5	GC	Yes	MS	IT	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always
			GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Quarterly

APPENDIX 3. Methods used by participants for detecting pesticides.

TERBUFOS															
Laboratory Code	RT Tolerance	MS Tolerance	Cromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
052		97%	GC	Yes	MS	Q	Thermo trace DSQ	10	DCM		Supelco SLB-5MS	1	Both	400	Never
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

TERBUTHYLAZINE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	none	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	every week 200 pesticides
003	0.30	0.05Da	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	1.5	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAC	Filter	HSS T3	2	Both	227	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAC		C18	2	Automatic	500	Each Batch
006	0.04		LC	No	MS	QQQ	Agilent 6410	10	ACN		Eclipse XDB-C18	4	Manual	123	Always
008	653	956	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	PSA	Phenomenex ZB-5MS	3	Both	750	Each Batch
010			GC	Yes	MS	Q	HP 5973 MSD	10	ACN	DSPE	HP-5MSI	20	Both	111	Each Batch
011			LC	No	MS	Q-TRAP	ABI 4000	10	ACN		C18	55	Both	approx. 580	Always
012	30	20	LC	Yes	MS	QQQ	API 3200 QT	10	ACN	DSPE	Fusion C18	20	Automatic	150	Daily
013	11.4	98	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP-5MS	20	Automatic	550	
014			LC	No	MS	QQQ	Acquity UPLC Quattro Premier XE	1.5	ACN	QuEChERS	BEH C18 1.7 µm	3	Both		On a Daily Basis
015			LC	No	MS	QQQ	ThermoFinniganTSQQuantum	10	ACN	PSA	XteiraC18MS	20	Automatic	130	Targeted Analysis Only
016			LC	No	MS	QQQ	Waters Premier Quattro XE	10	ACN	PSA	Kinetex XB-C18	10	Both		
017	0.0	10.55	LC	No	MS	QQQ	HPLC Agilent 1100. MS API 3000	10	ACN	DSPE	C18 3µm 50x2mm	10	Both	525 method 590 library	Always
018	0.0	0.0	GC	No	MS	QQQ	Thermo TSQ Quantum GC	10	Acetone/PE/DCM	Na2SO4	RXi-5SIL MS	1	Automatic	164	Each Batch
019	9	30	GC	Yes	MS	Q	Agilent GC7890-MS5975C	10	ACN	DSPE	HP5-MS	1	Both	150 method 500 library	Method Setup (and very rare cases)
021			GC	Yes	MS	IT	Varian 4000	10	ACN	DSPE	Capillary	3	Automatic	450	Daily/Weekly
022	<0.2	<20%	GC	Yes	MS	Q	Agilent 7890A/5975C	1.5	ACN	DSPE	HP5MS	10	Both	214	Once a Day
023	0.0		LC	No	MS/MS	Q	API 4000	10	ACN	DSPE	C18 hydro Phenomenex	40	Manual		Each Time

APPENDIX 3. Methods used by participants for detecting pesticides.

TERBUTHYLAZINE															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
024	12.6		LC	No	MS	QQQ	API 4000	10	ACN	Freeze out/ DSPE(PSA)	Synergie Fusion RP80A	8	Both	400	At least monthly
025	2	14.6	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
026	0.0	0.0	LC	No	MS	QQQ	Xevo TQ	15	ACN	LLE	C18	10	Both	360	Each Time
028			GC	No	MS	QQQ	Quattro micro	10	ACN	DSPE	HP5_MSI	1	Both	110	
030			GC	Yes	MS	TOF	Leco Pegasus	15	Acetone: DCM: PE		DB-5	1	Automatic		
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch
034	12		GC	Yes	MS	IT	Saturn 2000	30	EIOAc	HFGPC	DB-5 MS	2	Automatic	380	Not for routine
035		0.005 Da	LC	Yes	MS	Q-TOF	Bruker Maxis	10	ACN	PSA	C18 porashell	1	Automatic	2000	
036			GC	No	MS	Q	Agilent Tech. 5973 inert	15	Acetone		HP-5MS	2	Both		Always
037			GC	Yes	MS	Q	Agilent 6890N	10	ACN	PSA	DB-5	1	Both	80	
039			GC	No	MS	QQQ	Agilent 7000B	10	ACN	DSPE	HP-5MS	1	Automatic	400	Daily
040	5	20	LC	No	MS	QQQ	Quattro Premier XE	10	ACN	DSPE(PSA)	Reversed Phase	5	Manual	320	Each Batch
041	0.6		GC	No	MS	QQQ	Varian 3800 GC+ 320-MS	10	ACN		VF-1 ms	3	Both	150	Each Batch
042	6	unit	LC	No	MS	QQQ	Waters Premier	10	Methanol	ne	C18	5	Both	201	Each Time
044	<3%	<20%	GC	No	MS	QQQ	Agilent 7000a	15	Acetone	ne	HP5MSI	2	Automatic	200	Each batch
045	0.0	0.0	GC	Yes	MS	Q	Agilent	50	Acetone	DCM		1	Both	220	Daily
046	<20	932	GC	Yes	MS	TOF	Leco	10	ACN	DSPE(PSA)	Restek CI Pesticides	10	Both	700	235 compounds with every batch
047	0.1		LC	No	QQQ	QQQ	Agilent 6410	10	ACN	DSPE	C-18	10	Automatic		Each Batch
049	60	20%	LC	No	MS	QQQ	Varian 310-MS	10	ACN	DSPE	XDB-C18	20	Automatic	91	Every 15 days
050	1.4	8	GC	Yes	MS	Q	5975C inert XL EI/CI MSD	10	ACN	PSA	HP5-MS	2	Automatic	200	Always

APPENDIX 3. Methods used by participants for detecting pesticides.

TERBUTHYLAZINE															
Laboratory Code	RT Tolerance (s)	M5 Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
051	2.8	1.0	GC	Yes	MS	IT	Varian Saturn 2000	15	Acetone	Partitioning	FactorFour VF-5ms	5	Both	500	Daily
052	6	96%	LC	No	MS	QQQ	API 4000	10	ACN	QuEChERS	Supelco Ascenitis express RP-Amide	10	Automatic	180	Each Batch
053			LC	Yes	MS	QQQ	Varian	12	ACN	Yes	C18	10	Automatic	70	

APPENDIX 3. Methods used by participants for detecting pesticides.

TOLFENPYRAD															
Laboratory Code	RT Tolerance (s)	MS Tolerance	Chromatographic Technique	Full Scan	Detector	Analyser	Instrument Model	Sample Weight (g)	Extraction Solvent	Clean-Up	Column Type	Injection Volume (µl)	Software	No. of Compounds	Frequency of Standard Solution
001	none	none	LC	No	MS	QQQ	API 4000	10	ACN	DSPE	Waters-C18 2.1x50mmx1.7µm	5	Both	600	Every week 200 pesticides
003	0.30	0.05 Dd	LC	Yes	MS	TOF	ACQUITY/LCT PREMIER XE	1.5	MINI LUKE	No	C18	5	Both	345	Once a Day
004			LC	No	MS	QQQ	Applied Biosystems API5000	10	EIOAc	Filter	HSS T3	2	Both	104	Each Batch
005			LC	No	MS	QQQ	Agilent 6460	10	EIOAc		C18	2	Automatic	500	Each Batch
008	474	100	LC	No	MS	Q-TRAP	API 4000 Qtrap	10	ACN		Pursuit XRs Ultra	6	Both	250	Each Batch
011	15.9	0.0	GC	Yes	MS	Q	HP5975C	10	ACN	PSA	HP5MS	5	Both	approx. 1.000	Always
013	15.5	88	GC	Yes	MS	Q	Agilent 5975	10	ACN	MgSO4/PSA	HP5MS	20	Automatic	550	Yearly
014			GC	Yes	MS	Q	Trace DSQ	15	ACN	QuEChERS	DB5-MS	0.8	Both		
022	<0.1	<1.5%	LC	No	MS	QQQ	Waters Acquity TQD	15	ACN	DSPE	UPLC-BEH C18	10	Both	340	Once a Day
025	5	37.2	GC	Yes	MS	TOF	LECO Pegasus IV	10	ACN	DSPE(PSA)	HP-5MS	5	Both	650	Weekly
028			LC	No	MS	QQQ	Quattro Premier	10	ACN	DSPE	C18	5	Both		
032	RT locking		GC	Yes	MS	GCMSD	Agilent	10	ACN	PSA	HP5	10	Both	> 600	Always
033	9	20%	GC	Yes	MS	Q	Agilent GCMSD 7890A/5975C	10	ACN	PSA, C18	HP-5MS	1	Automatic	927	Each Batch



Protocol

EUROPEAN UNION PROFICIENCY TEST FOR PESTICIDES IN FRUITS AND VEGETABLES SCREENING METHODS 03 - 2011

Introduction:

Over recent years inter-laboratory tests for pesticide screening method were well accepted by laboratories. Therefore, the EURL-FV has decided to follow on this year with a new test. The main reason for this broad acceptance comes from the fact that many laboratories have invested in new higher mass accuracy MS systems that allow them to greatly increase the scope of their multiresidue methods.

It was found that many laboratories not only used a full-scan approach to perform screening but some also employed tandem-mass spectrometers, even if the sensitivity had to be reduced.

Another reason for conducting these screening method proficiency tests is to gain information from the laboratories on the type of software that they use. Whether they are using commercial software and databases, or whether they are internally constructed and searched manually. This information will provide an overall view of the purpose of this type of test, and if, in the near future, there is the need to develop new software.

Furthermore, this year, the Coordinated Multiannual Control Programme of the Union (Commission Regulation (EU) No 915/2010) allows member state laboratories to use multi-residue methods to conduct qualitative screening methods on up to 15 % of the samples taken.

The EURL-FV aim is to be able to use mass-spectrometry-based screening methods routinely, following validation. This is in line with the new Document SANCO/10684/2009 ("Method validation and quality control procedures for pesticide residues analysis in food and feed")

Only qualitative information will be requested for those pesticides that are detected. It has been decided by the Quality Control Group (and based on the received questionnaires) that a target pesticide list will **not** be provided. The pesticides selected to treat the sample for this EUPT-FV-SM03 will take into account the following considerations:

- Pesticides that are **not included** in the Coordinated Multiannual Community Control Programme for 2011 (Regulation (EC) No. 915/2010).
- Pesticides that are particularly acutely toxic and/or have low ARfD values.

Regulation (EC) No 882/2004 lays down the general tasks, duties and requirements for EURLs for Food, Feed and Animal Health. Among these tasks is the provision to independently organise comparative tests. As we have done for the last two years, the EURL for Pesticides in Fruit and Vegetables at the University of Almería, Spain, is going to organise a proficiency test on qualitative screening methods for pesticides in vegetable/fruit commodities. This EUPT-SM-03 is directed at all National Reference Laboratories (**NRLs**) and all Official Laboratories (**Ofls** for Fruits and Vegetables) in the EU Member States. Laboratories outside this EURL/NRL/Ofl-network may also be allowed to participate on a case-by-case basis, after consultation with DG SANCO.

Test material

This proficiency test is based on pesticide residue detection in mandarin. The mandarins to be used in this study were grown in Malaga, Spain.

ANNEX 1. Protocol, Instructions and Forms.

The pesticide treatments on the mandarins will be carried out post-harvest by spiking with a mixture of standard solutions. The mandarins will then be frozen (using liquid nitrogen), chopped, homogenized and sub-sampled into polyethylene bottles that have previously been coded.

Ten of these bottles containing the prepared test material, will be chosen randomly, and analysed to check the presence of all the spiked pesticides.

The test material will be stored frozen (-20°C) prior to shipment to participants.

Two bottles, again chosen randomly, will be analysed over a period of time to confirm the stability of the pesticides in the test material (firstly when the test materials are shipped, and then a few days after the deadline for receipt of participants' results). There will be an extra analysis during this period after the sample has been maintained at room temperature for a few days, again to see if there has been any degradation of any of the pesticides.

Steps to follow

This Proficiency Test will be made up of the following 6 essential steps:

1. To participate, each laboratory must complete the Application Form on-line, available on the EURL-FV Web page, before the deadline stipulated on the Calendar.
2. Laboratories will then receive an e-mail confirming their participation in this exercise, and assigning them a Laboratory Code. Laboratories with this information will be able to access the restricted area using their login information to be able to fill in the response forms - consisting of their **USER NAME** which is the Laboratory Code expressed as **Labxxx** (three digits with no spaces between them) and their **PASSWORD**, as chosen on the application form.
3. Sample delivery will cost **150 Euros**, except for those Laboratories already participating in EUPT-FV13, which will not be charged. If participation is solely in EUPT-FV-SM-03, then the payment is expected well in advance of the scheduled shipment date. An e-mail showing a bank transfer confirmation, or similar, must have been sent beforehand. Payments without a **Laboratory Code** or an **Invoice Number** to identify them will not be considered as paid.
4. Immediately after participant laboratories have received the test material, they must enter the restricted area and submit the **Sample Receipt Form** on-line to inform the Organiser that they have accepted the test material. If the Form is sent, then the Organiser will conclude that the sample has been accepted. If no test material has been received by 29th January 2011, please contact the Organiser by e-mail (pmedina@ual.es or omalato@ual.es)
5. The participant laboratories must respect the deadline for submitting the results – 72 hours after the sample reception - using the '**Results Form**' on-line. **Note that in this EUPT there will only be one Form for results submission.**
6. The Organiser will evaluate the results at the end of the proficiency test, once the deadline for receipt of results has passed. The Organiser will send a hard copy of the Final Report to each participant laboratory. Before this, an electronic version will be uploaded on the EURL-FV web site. This report will include information regarding the design of the test, the evaluation of the participants' results as well as graphical displays of the results and any conclusions. Other relevant information considered of value may also be included.

Sample Amount

Participants will receive:

- Approximately 300 g of mandarin test material with spiked pesticides, labelled as **EUPT-FV-SM-03 Sample**
- Approximately 300 g of 'blank' mandarin test material. **Note: the 'blank' sample will be the same if the laboratory also participated in EUPT-FV13.**

ANNEX 1. Protocol, Instructions and Forms.

Shipment of Samples

All samples will be frozen and packed in polyethylene boxes surrounded with dry ice and packed in boxes. The shipment of the test materials will be carried out on a single day (24th January 2011). An information message will be sent out by e-mail before shipment. Laboratories must make their own arrangements for the reception of the package. They must inform the Organiser of any public holidays in their country/city during the delivery period given in the calendar, as well as making the necessary arrangements to receive the shipment, even if the laboratory is closed.

Advice on Sample Handling

The test material should be mixed thoroughly, before taking the analytical portion(s).

All participants should use their own routine standard operating procedures for extraction, clean-up and analytical determination using their own reference standards for identification. **No quantification is required in this test.**

Sample Receipt – Form 0

Immediately after the laboratory has received the test materials it must be reported to the Organiser via Form 0, or the Sample Receipt Form, by accessing the restricted area found at <http://www.eupt-sm.com> by filling in the condition of the test material, and its acceptance. If the laboratory does not respond by sending this Form, the Organiser will assume that the sample has been received and accepted.

If any laboratory has not received the test material by 31st January 2011, they must inform the Organiser **immediately** by e-mail (pmedina@ual.es or omalato@ual.es)

Result Submission – Form 1

Once the laboratory has analysed the test material and is ready to submit their data, they must enter their results by accessing the private area in the EURL –FV web site: <http://www.eupt-sm.com>

As there is no Target Pesticide List for this PT, the laboratory will have to enter the name of the pesticides that they detected and related information concerning the procedure for detecting it.

Calendar:

Activity	Date
Publish the Calendar and Matrix on the Web page	October 2010
Receipt of Application Form from invited laboratories	1 st -30 th November 2010
Specific Protocol published on the Web site	January 2011
Sample distribution	24 th January 2011
Deadline for informing Organiser of sample acceptance: Fill in Form 0 "Sample receipt"	As soon as received
Deadline for receipt of results: Fill in Forms 1 – 'Results'	72 hours after receipt of the sample
Preliminary Report: only results.	February 2011
Final Report distributed to the Laboratories.	October 2011

Confidentiality:

The results of this test will only be made known to the participants by the Organiser. Each participating laboratory will be presented as a lab code to the Commission or at a Workshop.

Communication:

The official language used will be English.

Communication between participating laboratories during the test on matters concerning the test is not permitted.

Evaluation of the Results:

The procedures used for the evaluation of results will be based mainly around "not reported pesticides" and "other reported pesticides". After receiving the results, the Organiser may consider further evaluation that could highlight important information received. Therefore:

Other Reported Pesticides

These will be considered as those results that show the apparent presence of pesticides which were: (i) not used in the test material treatment, or (ii) not detected by the Organiser, even after repeated analyses. However, if a number of participants detect the same additional pesticide(s), then a decision as to whether, or not, this should be considered to be an "Other Reported Pesticide" result will be made on a case-by-case basis.

Organiser Notes:

- Not all screening methods immediately provide sufficient information to allow full identification. In such cases, in real-life, laboratories normally do a follow-up confirmatory analysis when they detect a pesticide by, for example, using LC-MS/MS and based on only one transition. In future PTs of this nature, there will be a need to distinguish between suspect or tentative detections and full identifications.
- The Scientific Committee considered that the term "Other Reported Pesticide" is more suitable than "False Positive" for the EUPT-FV-SM.

Not Reported Pesticides

These will be considered as the absence of a result for any pesticide present but not reported by the lab, even though the Organiser has used it to spike the test material, and it was detected by the majority of participants.

Organiser Note:

- *The term "False Negative" has been changed for the term "Not-Reported Pesticide" (NR). The Scientific Committee considers NR more consistent in those cases where no fixed scope is established in the Protocol.*

Contact information

The official organising group details are as follows:

Universidad de Almería. Edificio Químicas CITE I
Ctra. Sacramento s/n
04120 Almería - Spain
Fax No.: +34 950015483

Organising team (e-mail and phone no.):

Amadeo R. Fernández-Alba. EURL-FV amadeo@ual.es +34 950015034
Paula Medina Pastor. EURL-FV pmedina@ual.es +34 950014102
Octavio Malato Rodríguez. EURL-FV omalato@ual.es +34 950015531
Ms. Noelia Belmonte, Chemist. EURL-FV
Ms. María Ángeles Martínez Uroz, Chemist EURL-FV
Dr. Milagros Mezcua, Senior Chemist. EURL-FV
Ms. Ana Lozano, Chemist. EURL-FV

ANNEX 1. Protocol, Instructions and Forms.

Quality Control Group

Dr. Antonio Valverde, University of Almería, Spain.

Mr. Stewart Reynolds, Senior Chemist from FERA, York, United Kingdom

Statistical Group

Dr. Carmelo Rodriguez, Senior Mathematics. University of Almeria, Spain

Advisory Group

Dr. Miguel Gamón, Senior Chemist, Laboratorio Agroalimentario, Valencia, Spain.

Dr. Tuija Pihlström, Senior Chemist, NFA, Uppsala, Sweden.

Dr. André de Kok, Senior Chemist, VWA, Amsterdam, The Netherlands.

Dr. Sonja Masselter, Senior Chemist, AGES, Innsbruck, Austria

Dr. Michelangelo Anastasiades, Senior Chemist, CVUA, Stuttgart, Germany.

Dr. Metter Erecius Poulsen, Senior Chemist, NFI, Copenhagen, Denmark.

Dr. Ralf Lippold, Senior Chemist, CVUA, Freiburg, Germany.

Dr. Hans Mol, Senior Chemist, RIKILT, Wageningen, The Netherlands.

Dr. Magnus Jezussek, Senior Chemist, Erlangen, Germany.

Dr. Darinka Stajnbaher, Senior Chemist, Maribor, Slovenia.

Application Form

General Data

NRL in FV	No of Analysis by MRM done last year	No EU Official Samples Received last year from Coordinated Programme	Country
<input type="radio"/> Yes <input type="radio"/> No	<input type="text"/>	<input type="text"/>	<input type="text"/>

Laboratory Data

Laboratory name

Laboratory Address

Contact Name	<input type="text"/>		
Street	<input type="text"/>		
Number	<input type="text"/>	Postal code	<input type="text"/>
		City	<input type="text"/>

Postal Address (Optional fields. Only fill in if the postal address is different from the delivery address)

Street	<input type="text"/>		
Number	<input type="text"/>	Postal code	<input type="text"/>
		City	<input type="text"/>
		Country	<input type="text"/>

Telephone including country code	Fax Including country code	Mobile (Optional field)	Email
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Register Data

(Remember that your username will be your Lab code that will be sent to you once you have been accepted by the organization and here you have to choose your password)

Date	Choose your password	Receive standard solvent solution	Payment agreement	Invoice type
<input type="text" value="12/22/2010"/>	<input type="text"/>	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Invoice <input type="radio"/> Receipt <input type="radio"/> Nothing

Invoice Laboratory Address

Vat number	<input type="text"/>	Laboratory name	<input type="text"/>	
Street	<input type="text"/>			
Number	<input type="text"/>	Postal code	<input type="text"/>	City
				Country
				<input type="text"/>

Invoice Postal Address (Optional fields. Only fill in if the postal address is different from the delivery address)

Laboratory name	<input type="text"/>			
Street	<input type="text"/>			
Number	<input type="text"/>	Postal code	<input type="text"/>	City
				Country
				<input type="text"/>

If you have any problem filling the forms please contact with Octavio Malato: omalato@ual.es (+34) 950 015 531
 If you have any doubt about the required fields please contact with Paula Medina: pmolina@ual.es (+34) 950 015 645

Form 0 (Sample Receipt)



Sample Receipt EUPT-FV-SM 03

Please fill in the form as soon as possible after receiving the sample, if not the Organiser will understand you have accepted it.

[Back to Main page](#) | [Save this page](#)

Lab code: LabXXX

Contact name: XXXXXXXXXXXXXXXX

Sample number: XX

Frozen: Yes No

Losses: Yes No

Blank number: XX

Date of receipt (DD-MM-YYYY):

Frozen: Yes No

Losses: Yes No

I accept the test material and need no replacement Yes No

Contact Persons:

Octavio Malato
omalato@ual.es
Paula Medina
pmedina@ual.es
EURL-FV

THIS FORM WILL BE AVAILABLE TO BE FILL IN ONLY ONE TIME, PLEASE CHECK YOUR DATA BEFORE SAVING IT.
If you have entered your data and you want to change them, please contact us.

Form 1 (Results)



1. Results Page EUPT-FV-SM 03

Please indicate which pesticide you have detected. Please also type all the other fields taking into account if you are requested to enter a number or text.

Please specify the methods used for each detected pesticide. When you have described a method for one pesticide (source) and the same method is used for other pesticides (targets), you don't need to put in all the details again. In the column "Method as pesticide No", simply write the number of the source pesticide, where details of the methods are already given. When you save the page, all fields with methods are copied from the source to the targets pesticide, start to copy all the fields as you described.

When this page is finished click on the "Save this page" button and await a status message to show up.

When all pesticides are done click on "Back to Main page" button.

Lab code: LabXXX

Contact Name: XXXXXXXXXXXXXXXXXX

Pesticide No:	Pesticide name:	Methods as pesticide No.:	Desviation RT (s):	Desviation MS (specify unit or %):	Chromatographic Technique:	Detector:	Analyzer:
1	quinalphos		60sec	10 ppm	LC	MS	

Full Scan:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Instrument model:	Agilent 6230	Sample Weight (g):	1.0	Extraction Solvent:	acetonitrile	Clean up Step (specify):	none	Column Type:	Zorbax eclips	Injcton Volume (µL):	3	Software:		No of compounds in method or library that are pesticides ONLY:	517	How frequently do you use a standard solution for your screening method:	we do not use screening
------------	---------------------------------------------------------------------	-------------------	--------------	--------------------	-----	---------------------	--------------	--------------------------	------	--------------	---------------	----------------------	---	-----------	--	----------------------------------------------------------------	-----	--------------------------------------------------------------------------	-------------------------

ANNEX 2. List of laboratories that participate in EUPT-FV-SM-03.

COUNTRY	LABORATORY NAME	CITY	REPORTED RESULTS
Austria	AGES - Competence Center for Residues of Plant Protection Products	Innsbruck	Yes
Belgium	Scientific Institute of Public Health	Bruxelles	Yes
Belgium	LOVAP	Geel	Yes
Belgium	Fytolab	Zwijnaarde	Yes
Brazil	Institute of Technology of Pernambuco - Pesticide Residues Laboratory	Recife - PE	No
Czech Republic	Institute of Chemical Technology Prague, Dept. of Food Chemistry and Analysis	Prague	Yes
Denmark	Danish Veterinary and Food Administration, Regin East	Ringsted	Yes
Denmark	National Food Institute, Technical University of Denmark	Soeborg	Yes
Egypt	Central Lab of Residue Analysis of Pesticides and Heavy Metals in Foods	Giza	Yes
Estonia	Laboratory for Residues and Contaminants of Agricultural Research Centre	Saku	Yes
Finland	Finnish Customs Laboratory	Espoo	Yes
France	Laboratoire du SCL	Montpellier	Yes
France	Laboratoire du SCL d'Ile de France Massy	Massy Cedex France	Yes
France	GIRPA	Beaucouze	Yes
France	Laboratoire du SCL 35	Rennes	Yes
France	Laboratoire departemental de la sarthe	Le Mans	No
France	Laboratoire du SCL Strasbourg	Illkirch	Yes
Germany	Landesamt für Soziales, Gesundheit und Verbraucherschutz	Saarbrücken	No
Germany	Niedersaechsisches Landesamt fuer Verbraucherschutz und Lebensmittelsicherheit	Oldenburg	Yes
Germany	Bayerisches Landesamt fuer Gesundheit und Lebensmittelsicherheit	Erlangen	Yes
Germany	Federal Office of Consumer Protection and Food Safety (BVL)	Berlin	Yes
Germany	LUA Sachsen, Germany	Dresden	Yes
Germany	Chemisches und Veterinäruntersuchungsamt Münsterland-Emscher-Lippe (CVUA-MEL)	Muenster	Yes
Greece	General Chemical State Laboratory, Pesticide Residues Laboratory	Athens	Yes
Greece	Benaki Phytopathological Institute	Kifissia	Yes
Hungary	Agricultural Office of Somogy County, Plant Prot. & Soil Cons. Directorate, Pesticide Analytical Laboratory	Kaposvar	Yes
Hungary	Agricultural Office of BAZ County Plant Protection and Soil Conservation Directorate Pesticide Residue Analytical Laboratory	Miskolc	Yes

ANNEX 2. List of laboratories that participate in EUPT-FV-SM-03.

COUNTRY	LABORATORY NAME	CITY	REPORTED RESULTS
Ireland	Pesticide Control Laboratory	Celbridge	Yes
Italy	Agenzia Regionale per la Protezione Ambientale della Toscana - Dipartimento di Arezzo (A.R.P.A.T. - Arezzo)	Arezzo	Yes
Italy	Landesagentur für Umwelt - Labor für Chromatographie	Bozen	Yes
Italy	Istituto Zooprofilattico Sperimentale Lombardia Emilia Romagna - Reparto chimica alimenti - Lab. Contaminanti Ambientali	Brescia	No
Italy	ARPACAL - Dipartimento Di Reggio Calabria	Reggio Calabria	Yes
Italy	A.R.P.A.V. - Servizio Laboratori Verona	Verona	Yes
Latvia	Institute of Food Safety, Animal Health and Environment - BIOR	Riga	Yes
Norway	Bioforsk, Plant Health and Plant Protection, Pesticide Chemistry	Aas	Yes
Romania	Laboratory for Pesticides Residues Control in Plants and Vegetable Products	Bucharest	Yes
Romania	Sanitary Veterinary and Food Safety Directorate	Bucharest	Yes
Serbia	Center for Food Analysis	Belgrade	Yes
Slovenia	Zavod za zdravstveno varstvo Maribor - Institute of Public Health Maribor	Maribor	No
Spain	Laboratorio Agroalimentario de Granada	Santa Fe, Granada	Yes
Spain	Laboratorio Agroalimentario de la Generalitat Valenciana	Burjassot	Yes
Spain	Laboratorio de Sanidad Vegetal	Oviedo	Yes
Spain	Laboratorio Agroalimentario y de Sanidad Animal	El Palmar, Murcia	Yes
Sweden	Eurofins Food & Agro Sweden AB	Lidköping	Yes
Sweden	National Food Administration (Livsmedelsverket)	Uppsala	Yes
Switzerland	Service de la Consommation et des Affaires Vétérinaires (SCAV)	Genève	Yes
The Netherlands	VWA - Food and Consumer Product Safety Authority	Amsterdam	Yes
The Netherlands	RIKILT	Wageningen	Yes
Turkey	MSM Food Control Laboratory	Mersin	Yes
United Kingdom	The Food and Environment Research Agency	York	Yes
United Kingdom	SASA	Edinburgh	No
United Kingdom	Eurofins Laboratories Ltd.	Wolverhampton	Yes