



# European Proficiency Test on Pesticide Residues in beef meat

EUPT-AO19 (2024)

## Preliminary Report

Version 1.1

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Approved by Björn Hardebusch  
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## Document history

Action	Date	Version
Table 2: % of reported results corrected		
Table 5 and 6: Number of digits robust mean and z-scores changed	22 July 2024	V1.1
Table 4: corrected		

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# 1 GENERAL REMARKS

- Transcription errors by the organisers cannot be excluded. Therefore, all labs are kindly requested to **check their results carefully and to report any errors**. However, as robust statistic was applied to get the assigned values the influence of possible transcription errors is low (possible changes are in the range of  $\pm 0.1$  z-scores). Please note that only transcription errors by the organisers will be corrected.
- **Poor performance** (i.e. individual z-scores  $>3.0$  or false positive/negative results): **All NRLs and OFLs are requested to give feedback to the organiser by 27 September 2024** on any actions undertaken to find out the reasons for poor performance. For reporting, please use the excel-file attached to the e-mail with the preliminary report.
- Information regarding Spinosyn A results: According to the information given in the pesticide target list, results for Spinosad should be reported either if individual standards for Spinosyn A and D **or** a mixture of Spinosyn A and D are used for quantification. Results for Spinosyn A or D should be reported, if the **individual standards** were used for quantification. Laboratories that have analysed for Spinosyn A but not reported a result will receive a false negative result, even if they have reported a result for Spinosad. Spinosad will be evaluated later in the final report.
- Some pesticides were already included in the test item as a contamination, e.g. HCH alpha and DDAC. These substances will **not** be considered as false positives.

## 2 BACKGROUND INFORMATION

The test matrix of EUPT-AO19 was beef meat. PT items were prepared of beef meat obtained from Gertrud-Luckner-Gewerbeschule (Freiburg, Germany) and contained 14 pesticides from the list of mandatory analytes and five voluntary pesticides (see **Table 1**). All target analytes and their concentrations were selected by EURL-AO members together with the EUPT Quality Control Group. Participating laboratories were provided with approximately 100 g portions of the prepared PT item.

**Table 1:** Overview of analytes present in the EUPT-AO19 PT item. Voluntary analytes are marked with an asterisk (\*).

Analyte	CAS number of compound spiked in lab
Chlordane, trans-	5103-74-2
Chlorpyrifos(-ethyl)	2921-88-2
Cypermethrin (sum of isomers)	52315-07-8
DDD, p,p`-	72-54-8
Deltamethrin (cis isomer)	52918-63-5
Diazinon	333-41-5
Dieldrin	60-57-1
Endosulfan-sulfate	1031-07-8
Fenvalerate	51630-58-1
Heptachlorepoxyd, cis-	1024-57-3
Hexachlorcyclohexane (HCH), beta-isomer	319-85-7
Hexachlorobenzene (HCB)	118-74-1
Oxychlordane	27304-13-8
Profenofos	41198-08-7
Bixafen*	581809-46-3
Bixafen-desmethyl*	1655498-06-8
Chlordecone*	143-50-0
Epoxiconazole*	133855-98-8
Spinosyn A*	131929-63-0

## 3 RESULTS

In total, 101 laboratories registered for participation in EUPT-AO19. 97 laboratories submitted results for at least one compound. For statistical evaluation only results from laboratories of EU and EFTA countries (94 laboratories) were taken into account.

### 3.1 Summary

A summary of the assigned values and robust standard deviations (RSD) is given in the following **Table 2**.

**Table 2:** Summary of reported results by all laboratories from EU and EFTA countries. Assigned values and robust standard deviations (RSD). Voluntary analytes are marked with an asterisk (\*).

Analyte	Assigned value (mg/kg)	RSD (%)	No. of reported results	No. of acceptable results	No. of questionable results	No. of unacceptable results	No. of false negatives	No. of not analysed	% of reported results <sup>#</sup>	% of acceptable results	% of questionable results	% of unacceptable results
Chlordane, trans-	0.038	42.5%	92	70	10	12	3	6	63%	76.1%	10.9%	13.0%
Chlorpyrifos(-ethyl)	0.080	32.4%	90	78	6	6	1	8	62%	86.7%	6.7%	6.7%
Cypermethrin (sum of isomers)	0.095	38.0%	91	76	6	9	1	7	50%	83.5%	6.6%	9.9%
DDD, p,p`-	0.029	33.4%	92	72	6	14	9	6	58%	78.3%	6.5%	15.2%
Deltamethrin (cis isomer)	0.073	47.6%	90	68	10	12	0	8	48%	75.6%	11.1%	13.3%
Diazinon	0.053	20.5%	91	81	6	4	2	7	59%	89.0%	6.6%	4.4%
Dieldrin	0.043	34.4%	92	77	9	6	1	6	71%	83.7%	9.8%	6.5%
Endosulfan-sulfate	0.039	37.5%	92	73	12	7	3	6	49%	79.3%	13.0%	7.6%
Fenvalerate	0.086	45.5%	88	66	11	11	2	10	54%	75.0%	12.5%	12.5%
Heptachlorepoxyd, cis-	0.059	34.9%	93	80	5	8	0	5	66%	86.0%	5.4%	8.6%
Hexachlorcyclohexane (HCH), beta-isomer	0.054	33.6%	93	73	10	10	4	5	60%	78.5%	10.8%	10.8%
Hexachlorobenzene (HCB)	0.038	50.7%	93	63	14	16	7	5	63%	67.7%	15.1%	17.2%
Oxychlordane	0.038	33.6%	79	59	3	17	12	19	64%	74.7%	3.8%	21.5%
Profenofos	0.072	31.5%	83	69	6	8	1	15	43%	83.1%	7.2%	9.6%
Bixafen*	0.122	24.3%	54	51	1	2	0	44	82%	94.4%	1.9%	3.7%
Bixafen-desmethyl*	0.175	17.2%	15	13	1	1	1	83	92%	86.7%	6.7%	6.7%
Chlordecone*	0.040	35.1%	12	7	0	5	4	86	31%	58.3%	0.0%	41.7%
Epoxiconazole*	0.039	24.6%	56	49	3	4	2	42	28%	87.5%	5.4%	7.1%
Spinosyn A*	0.099	20.5%	36	20	2	14	13	62	62%	55.6%	5.6%	38.9%

<sup>#</sup> The percentage of reported results includes the number of acceptable, questionable, and unacceptable results reported for each compound by the total number of laboratories from EU and EFTA countries (n = 94). False negatives are included in unacceptable results.

## 3.2 False positives

14 laboratories (including non-EU countries) reported in total 18 tentative false positive results (**Table 3**).

**Table 3:** Laboratories that reported results for pesticides that were not present in the treated test item (false positives). RL = reporting level, MRRL = minimum required reporting level

Lab code	Pesticide	Concentration (mg/kg)	Determination technique	RL (mg/kg)	MRRL (mg/kg)
13	Parathion-methyl	0.0342	GC-MSMS (QQQ)	0.01	0.01
28	DDT, o,p-	0.05	GC-Ion Trap	0.01	0.005
28	HCH, gamma-	0.0731	GC-Ion Trap	0.01	0.005
29	Famoxadone	0.071	GC-MSMS (QQQ)	0.01	0.01
30	HCH, gamma-	0.042	GC-Ion Trap	0.005	0.005
35	DDT, p,p-	0.006	GC-MSMS (QQQ)	0.005	0.005
39	Chlordane, cis-	0.0121	GC-MSMS (QQQ)	0.005	0.005
71	Chlordane, cis-	0.025	GC-MSMS (QQQ)	0.005	0.005
71	HCH, gamma-	0.038	GC-MSMS (QQQ)	0.005	0.005
85	Chlordane, cis-	0.032	GC-MSMS (QQQ)	0.01	0.005
85	Cyfluthrin (sum)	0.167	GC-MSMS (QQQ)	0.01	0.01
85	DDT, o,p-	0.017	GC-MSMS (QQQ)	0.01	0.005
87	Endosulfan, beta-	0.376	GC-MSMS (QQQ)	0.005	0.005
93	Heptachlorepoxyde, trans-	0.0467	GC-MSMS (QQQ)	0.005	0.005
94	Chlordane, cis-	0.383	GC-MSMS (QQQ)	0.01	0.005
95	Spinosyn D	0.012	GC-MSMS (QQQ)	0.01	0.01
100	DDT, o,p-	0.027	GC-MSMS (QQQ)	0.005	0.005
106	DDT, o,p-	0.0247	GC-MSMS (QQQ)	0.001	0.005

*Results below the MRRL will not be considered as false positive in the final report*

## 3.3 False negatives

34 laboratories (including non-EU countries) reported in total 66 tentative false negative (FN) results (**Table 4**).

**Table 4:** Laboratories that did not report results for pesticides that were present in the treated test item (false negatives (FN)).

Lab code	Chlordane, trans-	Chlorpyrifos(-ethyl)	Cypermethrin (sum of isomers)	DDD, p,p'-	Deltamethrin (cis-isomer)	Diazinon	Dieldrin	Endosulfan-sulfate	Fenvalerate	Heptachlorepoxyd, cis-	Hexachlorcyclohexane (HCH), beta-isomer	Hexachlorobenzene (HCB)	Oxychlordane	Profenofos	Bixafen*	Bixafen-desmethyl*	Chlordecone*	Epoxiconazole*	Spinosyn A*
2																			FN
8																			FN
19																			FN
20																FN			
21																FN			
28				FN															
29																FN			FN
30											FN	FN							FN
35				FN															FN
38																			
39			FN	FN		FN					FN	FN							
46																			FN
47																FN			FN
48																		FN	
51																		FN	
65				FN				FN											FN
71	FN									FN		FN							
72																		FN	
73				FN															
77																			FN
82				FN					FN										
84																			FN
85	FN																		
86		FN					FN			FN			FN	FN					
90													FN						

Lab code	Chlordane, trans-	Chlorpyrifos(-ethyl)	Cypermethrin (sum of isomers)	DDD, p,p'	Deltamethrin (cis-isomer)	Diazinon	Dieldrin	Endosulfan-sulfate	Fenvalerate	Heptachlorepoxyd, cis-	Hexachlorcyclohexane (HCH), beta-isomer	Hexachlorobenzene (HCB)	Oxychlordane	Profenofos	Bixafen*	Bixafen-desmethyl*	Chlordecone*	Epoxiconazole*	Spinosyn A*
91								FN									FN		
94	FN																FN		
96																			FN
97				FN							FN								
99												FN							
103						FN						FN							FN
106				FN															
107											FN		FN						
108				FN								FN							

### 3.4 Individual submitted concentrations and assigned values, robust standard deviations and z-scores

Individual submitted concentrations by participants (including non-EU countries), assigned values, robust standard deviations and z-scores for the mandatory pesticides trans-chlordane, chlorpyrifos(e-thyl), cypermethrin (sum of isomers), p,p'-DDD, cis-deltamethrin, diazinon, dieldrin, endosulfan-sulfate, fenvalerate, and cis-heptachlorepoxyde are given in the following **Table 5**.

Individual submitted concentrations by participants (including non-EU countries), assigned values, robust standard deviations and z-scores for the mandatory pesticides hexachlorcyclohexane (HCH, beta-isomer), hexachlorobenzene (HCB), oxychlordane, profenofos, and the voluntary pesticides bixafen, bixafen-desmethyl, chlordecone, epoxiconazole, and spinosyn A are given in **Table 6**.

**Table 5:** Results reported for the mandatory pesticides trans-chlordane, chlorpyrifos(-ethyl), cypermethrin (sum of isomers), p,p'-DDD, cis-deltamethrin, diazinon, dieldrin, endosulfan-sulfate, fenvalerate, and cis-heptachlorepoxyde in mg/kg, the preliminary z-scores using a fit-for-purpose relative standard deviation of 25% (FFP-RSD 25%), the MRRLs in mg/kg and the assigned values and robust relative standard deviations (RSD) in mg/kg.

Lab code	Chlordane, trans-	z-score (FFP-RSD 25%)															
MRRL	0.005	0.010	0.010	0.010	0.010	0.005	0.005	0.010	0.010	0.005	0.005	0.010	0.010	0.005	0.010	0.005	
Assign. value	0.038	0.080	0.095	0.026	0.036	0.029	0.010	0.073	0.035	0.053	0.011	0.010	0.043	0.015	0.039	0.087	0.059
Robust RSD	0.016	85	86	87	87	85	85	86	86	87	87	87	87	87	84	82	88
Number of results	87																
2	0.021	-1.8	0.047	-1.7	0.067	-1.2	0.018	-1.5	0.046	-1.5	0.034	-1.4	0.025	-1.7	0.027	-1.3	0.061
5	0.040	0.3	0.070	-0.5	0.104	0.4	0.028	-0.2	0.064	-0.5	0.045	-0.6	0.043	0.0	0.036	-0.3	0.088
6	0.048	1.1	0.102	1.1	0.112	0.7	0.037	1.1	0.086	0.7	0.060	0.5	0.053	0.9	0.042	0.2	0.119
7	0.046	0.9	0.087	0.3	0.097	0.1	0.031	0.3	0.078	0.3	0.053	0.0	0.047	0.4	0.048	0.9	0.101
8	0.055	1.9	0.108	1.4	0.156	2.5	0.045	2.2	0.140	3.7	0.070	1.3	0.060	1.6	0.060	2.1	0.135
9	0.044	0.7	0.091	0.5	0.117	0.9	0.033	0.6	0.085	0.7	0.062	0.6	0.048	0.5	0.044	0.5	0.098
10	-	-	-	-	-	-	0.023	-0.8	-	-	-	-	0.032	-1.0	0.023	-1.7	-
11	0.035	-0.3	0.100	1.0	0.132	1.5	0.041	1.6	0.108	2.0	0.057	0.3	0.057	1.3	0.044	0.5	0.108
12	0.051	1.4	0.088	0.4	0.124	1.2	0.040	1.5	0.124	2.8	0.054	0.1	0.047	0.4	0.090	5.0	0.083
13	0.042	0.4	0.093	0.7	0.088	-0.3	0.036	0.9	0.096	1.3	0.058	0.4	0.045	0.2	0.063	2.4	0.045
14	-	-	-	-	0.014	-3.4	-	-	-	-	0.048	-0.4	-	-	-	-	-
15	0.044	0.7	0.082	0.1	0.082	-0.6	0.030	0.1	0.074	0.1	0.055	0.1	0.037	-0.5	0.043	0.4	0.099
16	0.055	1.9	0.107	1.3	0.096	0.0	0.035	0.8	0.073	0.0	0.060	0.5	0.057	1.3	0.036	-0.3	0.083

Lab code	Chlordane, trans-	z-score (FFP-RSD 25%)																						
MRRL	0.005		0.010		0.010		0.005		0.010		0.010		0.005		0.010		0.005		0.010		0.005			
Assign. value	0.038		0.080		0.095		0.029		0.073		0.035		0.010		0.053		0.011		0.043		0.039		0.059	
Robust RSD	0.016		0.026		0.036		0.010		0.035		0.035		0.010		0.010		0.015		0.015		0.039		0.021	
Number of results	87		85		86		87		85		86		86		87		87		84		88		88	
17	0.045	0.8	0.101	1.0	0.117	0.9	0.034	0.7	0.089	0.9	0.054	0.1	0.054	1.1	0.051	1.2	0.118	1.5	0.076	1.1				
19	0.056	2.0	0.101	1.0	0.128	1.4	0.032	0.4	0.110	2.1	0.054	0.1	0.069	2.5	0.059	2.0	0.133	2.2	0.079	1.3				
20	0.040	0.3	0.082	0.1	0.110	0.6	0.029	0.0	0.080	0.4	0.058	0.4	0.043	0.0	0.039	0.0	0.090	0.2	0.062	0.2				
21	-	-	0.047	-1.7	-	-	-	-	-	-	0.030	-1.7	-	-	-	-	-	-	-	-	-	-	-	
22	0.033	-0.5	0.059	-1.1	0.113	0.7	0.016	-1.8	0.049	-1.3	0.058	0.4	0.028	-1.4	0.028	-1.2	0.103	0.8	0.057	-0.2				
23	0.004	-3.5	-	-	10.15	5.0	0.003	-3.5	14.55	5.0	-	-	0.005	-3.5	0.005	-3.5	9.31	5.0	0.007	-3.5				
24	0.047	1.0	0.087	0.3	0.088	-0.3	0.030	0.0	0.067	-0.3	0.065	0.9	0.055	1.2	0.045	0.6	0.101	0.7	0.079	1.3				
26	-	-	0.069	-0.6	-	-	-	-	-	-	0.054	0.1	-	-	-	-	-	-	-	-	-	-	-	
27	0.028	-1.0	0.058	-1.1	0.111	0.7	0.028	-0.2	0.107	1.9	0.045	-0.6	0.034	-0.8	0.031	-0.9	0.073	-0.6	0.042	-1.2				
28	0.062	2.6	-	-	-	-	nd	-4.0	-	-	-	-	0.062	1.8	-	-	-	-	-	-	0.030	-2.0		
29	0.046	0.9	0.097	0.8	0.068	-1.1	0.025	-0.6	0.063	-0.5	0.061	0.6	0.050	0.7	0.032	-0.7	0.088	0.1	0.071	0.8				
30	0.034	-0.4	0.086	0.3	0.079	-0.7	0.031	0.3	0.045	-1.5	0.051	-0.2	0.043	0.0	0.036	-0.3	0.221	5.0	0.046	-0.9				
31	0.048	1.1	0.076	-0.2	0.098	0.1	0.027	-0.3	0.080	0.4	0.046	-0.5	0.049	0.6	0.047	0.7	0.090	0.2	0.071	0.8				
32	0.030	-0.8	0.052	-1.4	0.072	-1.0	0.037	1.1	0.048	-1.4	0.035	-1.4	0.031	-1.1	0.030	-1.0	0.077	-0.4	0.045	-1.0				
33	0.018	-2.1	0.068	-0.6	0.058	-1.6	0.017	-1.7	0.041	-1.7	0.046	-0.5	0.047	0.4	0.038	-0.1	0.024	-2.9	0.046	-0.9				
34	0.044	0.7	0.072	-0.4	0.084	-0.5	0.028	-0.2	0.084	0.6	0.048	-0.4	0.044	0.1	0.045	0.6	0.089	0.1	0.065	0.4				

Lab code	Chlordane, trans-	z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		
MRRL	0.005	Chlorpyrifos(-ethyl)	0.010	Cypermethrin (sum of isomers)	0.010	DDD, p,p'	0.005	Deltamethrin (cis-isomer)	0.010	Diazinon	0.010	Dieldrin	0.005	Endosulfan-sulfate	0.005	Fenvaerate	0.010	Heptachlorepoxyd, cis-	0.005	z-score (FFP-RSD 25%)
Assign. value	0.038		0.080		0.095		0.029		0.073		0.053		0.043		0.039		0.087		0.059	
Robust RSD	0.016		0.026		0.036		0.010		0.035		0.011		0.015		0.015		0.039		0.021	
Number of results	87		85		86		87		85		86		87		87		84		88	
<b>35</b>	0.010	-2.9	0.026	-2.7	0.029	-2.8	nd	-4.0	0.014	-3.2	0.015	-2.9	0.012	-2.9	0.010	-3.0	0.023	-2.9	0.016	-3.0
<b>36</b>	0.049	1.2	0.112	1.6	0.143	2.0	0.026	-0.5	0.086	0.7	0.065	0.8	0.057	1.4	0.031	-0.8	0.130	2.0	0.072	0.8
<b>37</b>	0.033	-0.4	0.077	-0.1	0.104	0.4	0.035	0.8	0.072	-0.1	0.048	-0.4	0.044	0.1	0.052	1.3	0.081	-0.3	0.057	-0.1
<b>38</b>	0.035	-0.3	-	-	-	-	0.030	0.1	-	-	-	-	0.039	-0.4	0.039	0.0	-	-	0.053	-0.5
<b>39</b>	0.004	-3.6	0.050	-1.5	nd	-4.0	nd	-4.0	0.041	-1.7	nd	-4.0	0.006	-3.4	0.049	1.0	0.047	-1.8	0.029	-2.0
<b>40</b>	0.032	-0.6	0.084	0.2	0.132	1.5	0.028	-0.2	0.089	0.9	0.050	-0.2	0.039	-0.3	0.049	1.0	0.089	0.1	0.059	0.0
<b>41</b>	0.009	-3.0	0.017	-3.2	0.059	-1.5	0.011	-2.5	0.050	-1.2	0.017	-2.7	0.012	-2.9	0.016	-2.4	0.031	-2.6	0.016	-2.9
<b>42</b>	0.048	1.1	0.099	0.9	0.098	0.1	0.023	-0.8	0.067	-0.3	0.064	0.8	0.059	1.5	0.035	-0.5	0.069	-0.8	0.076	1.1
<b>43</b>	0.030	-0.8	0.081	0.0	0.108	0.5	0.025	-0.6	0.080	0.4	0.058	0.4	0.033	-0.9	0.045	0.6	0.078	-0.4	0.050	-0.6
<b>44</b>	0.050	1.3	0.074	-0.3	0.130	1.5	0.035	0.8	0.102	1.6	0.044	-0.7	0.046	0.3	0.014	-2.6	0.100	0.6	0.064	0.3
<b>46</b>	0.071	3.6	0.131	2.5	0.121	1.1	0.043	1.9	0.124	2.8	0.064	0.8	0.067	2.3	0.042	0.3	0.130	2.0	0.092	2.2
<b>47</b>	0.036	-0.2	0.081	0.0	0.105	0.4	0.025	-0.6	0.075	0.1	0.058	0.4	0.044	0.1	0.044	0.5	0.089	0.1	0.055	-0.3
<b>48</b>	0.054	1.7	0.081	0.0	0.105	0.4	-	-	0.077	0.2	0.067	1.0	0.071	2.6	0.068	2.9	0.090	0.2	0.079	1.3
<b>49</b>	0.016	-2.3	0.048	-1.6	0.055	-1.7	0.013	-2.2	0.043	-1.6	0.016	-2.8	0.020	-2.1	0.027	-1.3	0.046	-1.9	0.032	-1.8
<b>50</b>	0.034	-0.4	0.073	-0.4	0.095	0.0	0.022	-0.9	0.075	0.1	0.042	-0.9	0.036	-0.7	0.029	-1.0	0.080	-0.3	0.052	-0.5
<b>51</b>	0.051	1.4	0.071	-0.5	0.052	-1.8	0.023	-0.8	0.031	-2.3	0.039	-1.1	0.048	0.5	0.025	-1.5	0.046	-1.9	0.068	0.6

Lab code	Chlordane, trans-	z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		
MRRL	0.005		Chlorpyrifos(-ethyl)		Cypermethrin (sum of isomers)		DDD, p,p'		Deltamethrin (cis-isomer)		Diazinon		Dieldrin		Endosulfan-sulfate		Fenvaerate		Heptachlorepoxyd, cis-	
Assign. value	0.038		0.010		0.010		0.005		0.010		0.010		0.005		0.005		0.010		0.005	
Robust RSD	0.016		0.080		0.095		0.029		0.073		0.053		0.043		0.039		0.087		0.059	
Number of results	87		0.026		0.036		0.010		0.035		0.011		0.015		0.015		0.039		0.021	
52	0.046	0.9	0.108	1.4	0.116	0.9	0.033	0.5	0.090	1.0	0.058	0.4	0.050	0.7	0.050	1.1	0.099	0.6	0.074	1.0
54	0.035	-0.3	-	-	0.086	-0.4	0.037	1.0	0.113	2.2	0.060	0.5	0.046	0.3	0.055	1.6	0.131	2.1	0.072	0.9
55	0.049	1.2	0.079	-0.1	0.093	-0.1	0.029	0.0	0.083	0.6	0.052	-0.1	0.049	0.6	0.055	1.6	0.090	0.2	0.076	1.1
56	0.049	1.2	0.092	0.6	0.120	1.0	0.035	0.8	0.078	0.3	0.048	-0.4	0.047	0.4	0.034	-0.5	0.107	1.0	0.064	0.3
57	0.027	-1.1	0.067	-0.6	0.065	-1.3	0.021	-1.1	0.041	-1.7	0.051	-0.1	0.029	-1.3	0.033	-0.6	0.051	-1.6	0.026	-2.2
58	0.036	-0.2	0.099	0.9	0.123	1.2	0.018	-1.5	0.097	1.3	0.052	-0.1	0.041	-0.2	0.046	0.7	0.099	0.6	0.072	0.9
59	0.052	1.5	0.052	-1.4	0.062	-1.4	0.018	-1.5	0.037	-2.0	0.023	-2.3	0.027	-1.5	0.021	-1.9	0.023	-2.9	0.079	1.3
60	0.056	2.0	0.121	2.0	0.135	1.7	0.117	5.0	0.117	2.4	0.066	1.0	0.064	2.0	0.060	2.1	0.111	1.1	0.104	3.0
61	0.033	-0.5	0.055	-1.3	0.118	0.9	0.023	-0.8	0.012	-3.3	0.049	-0.3	0.031	-1.1	0.034	-0.5	0.064	-1.0	0.053	-0.4
62	0.062	2.6	0.101	1.0	0.138	1.8	0.042	1.8	0.078	0.3	0.073	1.5	0.063	1.9	0.052	1.2	0.114	1.3	0.079	1.3
63	0.044	0.7	0.093	0.6	0.101	0.2	0.028	-0.2	0.083	0.5	0.052	-0.1	0.048	0.5	0.046	0.7	0.095	0.4	0.069	0.7
64	0.020	-1.9	0.069	-0.5	0.047	-2.0	0.025	-0.6	0.060	-0.7	0.050	-0.2	0.049	0.6	0.026	-1.4	0.053	-1.5	0.072	0.9
65	0.006	-3.4	0.007	-3.7	0.008	-3.7	nd	-4.0	0.005	-3.7	0.010	-3.2	0.006	-3.4	nd	-4.0	0.007	-3.7	0.010	-3.3
66	0.022	-1.7	0.065	-0.8	0.069	-1.1	0.019	-1.4	0.053	-1.1	0.051	-0.2	0.029	-1.3	0.036	-0.3	0.059	-1.3	0.039	-1.4
67	0.052	1.5	0.098	0.9	0.152	2.4	0.033	0.6	0.121	2.7	0.057	0.3	0.056	1.3	0.048	0.9	0.121	1.6	0.077	1.2
68	0.027	-1.1	0.043	-1.9	0.083	-0.5	0.018	-1.5	0.037	-2.0	0.033	-1.5	0.025	-1.6	0.021	-1.8	0.052	-1.6	0.048	-0.8

Lab code	Chlordane, trans-	z-score (FFP-RSD 25%)																
MRRL	0.005		0.010		0.010		0.005		0.010		0.010		0.005		0.010		0.005	
Assign. value	0.038		0.080		0.095		0.029		0.073		0.035		0.011		0.053		0.039	
Robust RSD	0.016		0.026		0.036		0.010		0.035		0.035		0.011		0.043		0.015	
Number of results	87		85		86		87		85		86		87		87		84	
69	0.038	0.0	0.099	1.0	0.131	1.5	0.028	-0.2	0.077	0.2	0.060	0.5	0.043	0.0	0.037	-0.3	0.117	1.4
70	0.025	-1.3	0.055	-1.3	0.053	-1.8	0.020	-1.3	0.045	-1.5	0.046	-0.5	0.033	-0.9	0.038	-0.2	0.046	-1.9
71	nd	-4.0	0.071	-0.5	0.130	1.5	0.033	0.5	0.099	1.5	0.059	0.4	0.036	-0.6	nd	-4.0	-	-
72	0.036	-0.2	0.094	0.7	0.106	0.4	0.017	-1.7	0.106	1.8	0.067	1.0	0.039	-0.3	0.042	0.3	0.069	-0.8
73	0.013	-2.6	0.025	-2.8	0.034	-2.6	nd	-4.0	0.024	-2.7	0.018	-2.6	0.013	-2.8	0.013	-2.7	0.034	-2.4
76	0.037	-0.1	0.085	0.2	0.120	1.0	0.031	0.3	0.087	0.8	0.048	-0.4	0.042	-0.1	0.056	1.7	0.120	1.5
77	0.049	1.2	0.108	1.4	0.114	0.8	0.046	2.3	0.075	0.1	0.057	0.3	0.055	1.1	0.048	0.9	0.103	0.8
78	0.101	5.0	0.108	1.4	0.151	2.3	0.041	1.6	0.123	2.8	0.082	2.1	0.056	1.3	0.049	1.0	0.114	1.3
79	0.048	1.1	0.089	0.4	0.114	0.8	0.038	1.2	0.061	-0.6	0.052	-0.1	-	-	0.039	0.0	0.105	0.9
80	0.044	0.7	0.095	0.8	0.153	2.4	0.033	0.5	0.118	2.5	0.063	0.7	0.055	1.1	0.050	1.1	-	-
81	0.044	0.7	0.098	0.9	0.109	0.6	0.034	0.7	0.065	-0.4	0.064	0.8	0.044	0.1	0.045	0.6	0.129	2.0
82	0.016	-2.3	0.112	1.6	0.072	-1.0	nd	-4.0	0.069	-0.2	0.060	0.5	0.061	1.7	0.046	0.7	nd	-4.0
83	0.036	-0.2	0.087	0.4	0.144	2.0	0.032	0.3	0.093	1.1	0.056	0.2	0.041	-0.2	0.045	0.6	0.109	1.0
84	0.047	1.0	0.099	0.9	0.129	1.4	0.041	1.6	0.100	1.5	0.058	0.4	0.057	1.3	0.052	1.3	0.121	1.6
85	nd	-4.0	0.032	-2.4	0.091	-0.2	0.016	-1.8	0.051	-1.2	0.063	0.7	0.035	-0.7	0.039	0.0	0.087	0.0
86	0.006	-3.4	nd	-4.0	0.021	-3.1	0.006	-3.2	0.012	-3.3	nd	-4.0	0.008	-3.2	0.011	-2.8	nd	-4.0

Lab code	Chlordane, trans-	z-score (FFP-RSD 25%)																
MRRL	0.005		0.010		0.010		0.005		0.010		0.010		0.005		0.010		0.005	
Assign. value	0.038		0.080		0.095		0.029		0.073		0.035		0.011		0.053		0.039	
Robust RSD	0.016		0.026		0.036		0.010		0.035		0.016		0.015		0.043		0.015	
Number of results	87		85		86		87		85		86		87		87		84	
87	0.435	5.0	0.710	5.0	0.120	1.0	0.219	5.0	2.700	5.0	0.465	5.0	0.424	5.0	1.370	5.0	1.120	5.0
88	0.007	-3.3	0.022	-2.9	0.016	-3.3	0.004	-3.5	0.016	-3.1	0.030	-1.7	0.014	-2.7	0.012	-2.8	0.008	-3.6
89	0.046	0.8	0.092	0.6	0.129	1.4	0.036	0.9	0.088	0.9	0.056	0.2	0.046	0.3	0.042	0.2	0.112	1.2
90	0.033	-0.5	0.086	0.3	0.082	-0.6	0.029	0.0	0.048	-1.4	0.048	-0.4	0.050	0.7	0.035	-0.4	0.228	5.0
91	0.018	-2.1	0.044	-1.8	0.056	-1.7	0.015	-1.9	0.037	-2.0	0.045	-0.6	0.024	-1.8	nd	-4.0	0.044	-2.0
92	0.049	1.2	0.087	0.3	0.108	0.5	0.035	0.8	0.087	0.8	0.055	0.1	0.048	0.5	0.056	1.7	0.107	0.9
93	0.043	0.6	0.065	-0.7	0.059	-1.5	0.022	-1.0	0.048	-1.4	0.037	-1.2	0.036	-0.6	0.026	-1.3	0.028	-2.7
94	nd	-4.0	0.123	2.1	0.106	0.4	0.047	2.4	0.096	1.3	0.059	0.4	0.051	0.8	0.054	1.5	0.092	0.3
95	0.036	-0.2	0.106	1.3	0.088	-0.3	0.027	-0.3	0.074	0.1	0.048	-0.4	0.035	-0.7	0.045	0.6	0.075	-0.5
96	0.053	1.6	0.074	-0.3	0.094	-0.1	0.028	-0.2	0.053	-1.1	0.057	0.3	0.060	1.6	0.015	-2.5	0.093	0.3
97	0.012	-2.7	0.019	-3.1	0.022	-3.1	nd	-4.0	0.016	-3.1	-	-	0.012	-2.9	0.011	-2.9	0.021	-3.0
98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99	0.031	-0.7	0.095	0.7	0.130	1.5	0.030	0.1	0.150	4.3	0.055	0.1	0.046	0.3	0.046	0.7	0.120	1.5
100	0.025	-1.3	0.084	0.2	0.128	1.4	0.032	0.4	0.099	1.5	0.069	1.2	0.030	-1.2	0.057	1.8	0.117	1.4
101	0.033	-0.5	0.102	1.1	0.085	-0.4	0.022	-1.0	0.067	-0.3	0.054	0.0	0.032	-1.1	0.032	-0.7	0.055	-1.4
102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lab code	Chlordane, trans-	z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)				
MRRL	0.005	0.010	Chlorpyrifos(-ethyl)	0.010	Cypermethrin (sum of isomers)	0.005	DDD, p,p'	0.010	Deltamethrin (cis-isomer)	0.010	Diazinon	0.005	Dieldrin	0.005	Endosulfan-sulfate	0.010	Fenvaerate	0.005	Heptachlorepoxyd, cis-	
Assign. value	0.038	0.080		0.095		0.029		0.073		0.053		0.043		0.039		0.087		0.059		
Robust RSD	0.016	0.026		0.036		0.010		0.035		0.011		0.015		0.015		0.039		0.021		
Number of results	87	85		86		87		85		86		87		87		84		88		
103	0.014	-2.5	0.014	-3.3	0.010	-3.6	0.008	-2.9	0.012	-3.3	0.028	-1.9	nd	-4.0	0.011	-2.9	0.016	-3.3	0.020	-2.7
105	0.035	-0.3	0.100	1.0	0.095	0.0	0.032	0.4	0.085	0.7	0.060	0.5	0.045	0.2	0.046	0.7	0.090	0.2	0.054	-0.4
106	0.023	-1.5	0.054	-1.3	0.050	-1.9	nd	-4.0	0.040	-1.8	0.065	0.9	0.036	-0.7	0.025	-1.5	0.038	-2.3	0.040	-1.3
107	0.050	1.3	0.090	0.5	0.020	-3.2	0.040	1.5	0.010	-3.4	0.060	0.5	0.050	0.7	0.020	-2.0	0.010	-3.5	0.060	0.0
108	0.030	-0.8	0.056	-1.2	0.066	-1.2	nd	-4.0	0.105	1.8	0.046	-0.5	0.036	-0.6	0.041	0.2	0.136	2.3	0.055	-0.3

nd: not detected

**Table 6:** Results reported for the mandatory pesticides hexachlorcyclohexane (HCH, beta-isomer), hexachlorobenzene (HCB), oxychlordane, profenofos, and the voluntary pesticides bixafen, bixafen-desmethyl, chlordecone, epoxiconazole, and spinosyn A in mg/kg, the preliminary z-scores using a fit-for-purpose relative standard deviation of 25% (FFP-RSD 25%), the MRRLs in mg/kg and the assigned values and robust relative standard deviations (RSD) in mg/kg.

Lab code	Hexachlorcyclohexane (HCH), beta-isomer	z-score (FFP-RSD 25%)		Hexachlorobenzene (HCB)	Oxychlordane	z-score (FFP-RSD 25%)		Profenofos	z-score (FFP-RSD 25%)		Bixafen	z-score (FFP-RSD 25%)		Bixafen-desmethyl	z-score (FFP-RSD 25%)		Chlordecone	z-score (FFP-RSD 25%)		Epoxiconazole	z-score (FFP-RSD 25%)		Spinosyn A	z-score (FFP-RSD 25%)		
MRRL	0.005			0.005	0.005			0.010		0.010				0.010		0.005		0.010		0.010		0.010		0.010		0.010
Assign. value	0.054			0.038	0.038			0.072		0.122				0.175		0.040		0.039		0.099		0.020		0.020		0.020
Robust RSD	0.018			0.019	0.013			0.023		0.030				0.030		0.014		0.010		0.010		0.010		0.010		0.010
Number of results	88			88	75			79		52				15		11		53		35						
2	0.038	-1.2	0.032	-0.6	0.043	0.5	0.092	1.1	0.094	-0.9	-	-	-	-	-	-	-	0.036	-0.3	-	-	-	-	-	-	
5	0.100	3.4	0.051	1.4	0.053	1.5	0.057	-0.8	0.119	-0.1	-	-	-	-	-	-	-	0.038	-0.1	0.044	-2.2					
6	0.062	0.6	0.036	-0.2	0.058	2.1	0.076	0.2	0.117	-0.2	-	-	-	-	-	-	-	0.038	-0.1	0.091	-0.3					
7	0.070	1.1	0.065	2.9	0.048	1.0	0.114	2.3	0.145	0.7	0.275	2.3	0.050	1.0	0.051	1.2	nd	-4.0								
8	0.057	0.2	0.048	1.1	0.045	0.7	0.074	0.1	0.117	-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	0.037	-1.3	0.010	-2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	0.067	0.9	0.064	2.8	0.045	0.7	0.086	0.8	0.124	0.1	-	-	-	-	-	-	-	0.038	-0.1	-	-					
11	0.064	0.7	0.061	2.5	0.044	0.6	0.079	0.4	0.163	1.3	-	-	-	-	-	-	-	0.053	1.4	0.077	-0.9					
12	0.054	-0.1	0.048	1.1	0.038	-0.1	0.086	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	0.049	-0.4	0.046	0.8	0.040	0.2	0.064	-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	0.063	0.6	0.052	1.5	0.045	0.7	0.080	0.4	0.134	0.4	0.176	0.0	0.033	-0.7	0.038	-0.1	0.098	0.0								
16	0.073	1.4	0.023	-1.6	0.046	0.8	0.110	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Lab code	Hexachlorocyclohexane (HCH), beta-isomer	z-score (FFP-RSD 25%)																								
		Hexachlorobenzene (HCB)			Oxychlordane			Profenofos			Bixafen			Bixafen-desmethyl			Chlordecone			Epoxiconazole			Spinosyn A			
MRRL	0.005	0.005	0.005	0.005	0.038	0.013	0.010	0.072	0.023	0.010	0.122	0.030	0.010	0.175	0.030	0.010	0.040	0.014	0.005	0.010	0.039	0.010	0.099	0.020	35	
Assign. value	0.054	0.038	0.019	0.013	0.013	75	79	52	15	11	53	nd	-4.0	nd	-4.0	nd	-4.0	nd	nd	nd	nd	nd	nd	nd	nd	
Robust RSD	0.018	88	88	75	79	52	15	11	53	35	nd	-4.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Number of results	88	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
17	0.054	0.0	0.052	1.5	0.039	0.1	0.153	4.5	0.116	-0.2	-	-	-	-	-	-	-	-	0.041	0.2	nd	-4.0	nd	nd	nd	
19	0.064	0.7	0.035	-0.3	nd	-4.0	0.065	-0.4	-	-	-	-	-	-	-	-	-	-	0.035	-0.4	0.082	-0.7	nd	nd	nd	nd
20	-	-	-	-	-	-	nd	-4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	0.034	-1.5	0.021	-1.8	0.021	-1.8	0.067	-0.3	0.129	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	0.009	-3.4	0.004	-3.6	0.005	-3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	0.055	0.0	0.062	2.5	0.046	0.8	0.065	-0.4	0.100	-0.7	0.137	-0.9	-	-	-	-	-	-	0.041	0.2	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	0.076	1.6	0.034	-0.4	0.029	-1.0	0.086	0.8	0.098	-0.8	-	-	-	0.030	-1.0	0.076	3.8	-	-	-	-	-	-	-	-	-
27	nd	-4.0	0.050	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	0.072	1.3	0.049	1.2	nd	-4.0	0.060	-0.7	0.097	-0.8	0.155	-0.5	-	-	-	-	-	-	0.035	-0.4	nd	-4.0	nd	nd	nd	nd
29	nd	-4.0	nd	-4.0	0.039	0.1	0.065	-0.4	0.067	-1.8	-	-	-	-	-	-	-	-	0.028	-1.1	nd	-4.0	nd	nd	nd	nd
30	0.054	0.0	0.030	-0.8	0.038	0.0	0.067	-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	0.039	-1.1	0.037	-0.1	0.031	-0.8	0.041	-1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	0.041	-1.0	0.022	-1.7	0.013	-2.6	0.066	-0.4	0.105	-0.6	-	-	-	-	-	-	-	-	0.043	0.4	-	-	-	-	-	-
33	0.048	-0.5	0.033	-0.5	0.035	-0.3	0.066	-0.4	0.137	0.5	-	-	-	-	-	-	-	-	0.032	-0.7	-	-	-	-	-	-
34	0.017	-2.7	0.011	-2.9	nd	-4.0	0.016	-3.1	0.041	-2.6	-	-	-	-	-	-	-	-	0.010	-2.9	nd	-4.0	nd	nd	nd	nd

Lab code	Hexachlorocyclohexane (HCH), beta-isomer	z-score (FFP-RSD 25%)															
		MRRL	0.005	0.005	0.005	0.005	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Assign. value	0.054			0.038			0.038			0.030			0.030		0.039		0.099
Robust RSD	0.018			0.019			0.013			0.030			0.030		0.010		0.020
Number of results	88			88			75			52			15		53		35
35	0.068	1.0	0.043	0.6	0.050	1.2	0.091	1.0	-	-	-	-	-	-	-	-	-
36	0.059	0.3	0.038	0.1	0.029	-1.0	0.084	0.6	0.090	-1.1	-	-	-	-	0.032	-0.7	-
37	0.047	-0.6	nd	-4.0	-	-	-	-	-	-	-	-	-	-	-	-	-
38	0.044	-0.8	nd	-4.0	nd	-4.0	-	-	-	-	-	-	-	-	-	-	-
39	0.053	-0.1	0.028	-1.0	0.031	-0.8	0.074	0.1	-	-	-	-	-	-	-	-	-
40	0.016	-2.8	0.015	-2.4	0.010	-3.0	0.014	-3.2	-	-	-	-	-	-	0.017	-2.3	-
41	0.076	1.6	0.051	1.4	0.047	1.0	0.081	0.5	0.138	0.5	-	-	-	-	0.059	2.0	0.088
42	0.051	-0.2	0.032	-0.6	0.028	-1.0	0.083	0.6	0.112	-0.3	0.131	-1.0	-	-	0.042	0.3	0.103
43	0.059	0.4	0.034	-0.4	0.052	1.4	0.063	-0.5	0.073	-1.6	0.164	-0.2	-	-	0.028	-1.1	-
44	0.056	0.1	0.020	-1.9	0.057	1.9	0.096	1.3	0.131	0.3	-	-	-	-	0.039	0.0	nd
46	0.059	0.3	0.033	-0.5	nd	-4.0	0.080	0.4	0.146	0.8	0.173	0.0	-	-	0.046	0.8	nd
47	0.068	1.0	0.083	4.8	0.048	1.0	0.108	2.0	0.137	0.5	-	-	nd	-4.0	0.046	0.7	0.102
48	0.015	-2.9	-	-	-	-	0.054	-1.0	-	-	-	-	-	-	0.025	-1.4	-
49	0.047	-0.5	0.033	-0.5	0.032	-0.7	0.067	-0.3	0.119	-0.1	-	-	-	-	0.035	-0.4	-
50	0.053	-0.1	0.073	3.7	0.035	-0.3	0.033	-2.2	-	-	-	-	nd	-4.0	0.022	-1.7	0.046
51	0.057	0.2	0.032	-0.6	-	-	0.089	0.9	-	-	-	-	-	-	-	-	-

Lab code	Hexachlorocyclohexane (HCH), beta-isomer	z-score (FFP-RSD 25%)				z-score (FFP-RSD 25%)				z-score (FFP-RSD 25%)				z-score (FFP-RSD 25%)				z-score (FFP-RSD 25%)					
		MRRL	0.005	0.005	0.005	Oxychlordane	0.010	0.010	Bixafen	0.010	0.010	0.010	Chlordecone	0.005	0.010	0.010	Epoxiconazole	0.010	0.010	Spinosyn A	z-score (FFP-RSD 25%)		
Assign. value	0.054			0.038																			
Robust RSD	0.018			0.019																			
Number of results	88		88		75		79		52		15		11		53		35						
52	0.070	1.1	0.020	-1.8	-	-	-	0.165	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	
54	0.069	1.0	0.021	-1.8	0.038	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
55	0.050	-0.3	0.038	0.1	0.037	-0.1	0.070	-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
56	0.052	-0.2	0.008	-3.2	0.021	-1.8	0.066	-0.3	0.119	-0.1	-	-	-	-	-	-	-	-	-	-	-	-	
57	0.065	0.8	0.041	0.3	0.044	0.6	0.070	-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
58	0.031	-1.7	0.025	-1.4	0.047	0.9	0.043	-1.6	0.154	1.0	0.183	0.2	-	-	0.047	0.8	0.119	0.8					
59	0.086	2.3	0.040	0.2	0.095	5.0	0.104	1.7	0.148	0.8	-	-	-	-	0.046	0.7	0.113	0.6					
60	0.056	0.1	0.036	-0.2	0.025	-1.4	0.073	0.0	0.119	-0.1	-	-	-	-	0.042	0.3	0.093	-0.2					
61	0.089	2.5	0.108	5.0	0.058	2.1	0.041	-1.7	0.149	0.9	-	-	-	-	0.046	0.8	0.135	1.5					
62	0.069	1.1	0.030	-0.8	0.039	0.1	0.097	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
63	0.061	0.5	0.034	-0.4	0.050	1.3	0.056	-0.9	0.071	-1.7	-	-	-	-	-	-	-	-	-	-	-	-	
64	0.009	-3.4	0.009	-3.0	-	-	-	-	-	-	-	-	-	-	nd	-4.0	-	-	-	-	-	-	-
65	0.041	-1.0	0.023	-1.6	0.020	-1.9	0.064	-0.5	-	-	-	-	-	-	-	0.038	-0.1	0.098	0.0				
66	0.068	1.0	0.048	1.1	0.050	1.2	0.089	0.9	0.132	0.3	0.193	0.4	-	-	0.039	0.0	0.097	-0.1					
67	0.040	-1.1	0.026	-1.2	0.033	-0.6	0.030	-2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	0.058	0.3	0.036	-0.2	0.039	0.0	0.097	1.3	0.147	0.8	0.220	1.0	0.034	-0.6	0.054	1.6	0.115	0.7					

Lab code	Hexachlorocyclohexane (HCH), beta-isomer	z-score (FFP-RSD 25%)				z-score (FFP-RSD 25%)				z-score (FFP-RSD 25%)				z-score (FFP-RSD 25%)			
		MRRL	0.005	0.005	0.005	Oxychlordane	0.010	0.010	Bixafen	0.010	0.010	0.005	0.010	0.010	0.010	Spinosyn A	
Assign. value	0.054			0.038													
Robust RSD	0.018			0.019													
Number of results	88		88		75		79		52		15		11		53		35
69	0.045	-0.7	0.031	-0.7	0.026	-1.3	0.050	-1.2	-	-	-	-	-	-	-	-	-
70	nd	-4.0	nd	-4.0	-	-	0.088	0.9	-	-	-	-	-	-	-	-	-
71	0.048	-0.5	0.043	0.6	0.039	0.1	0.084	0.6	0.132	0.3	0.184	0.2	nd	-4.0	0.045	0.6	0.174
72	0.018	-2.7	0.011	-2.8	0.010	-3.0	0.017	-3.1	0.032	-3.0	-	-	-	0.014	0.010	-2.7	-
73	0.060	0.4	0.047	1.0	0.030	-0.9	0.061	-0.6	-	-	-	-	-	-	-	-	-
76	0.071	1.2	0.053	1.6	0.051	1.3	0.090	1.0	0.131	0.3	-	-	-	-	0.043	0.4	nd
77	0.070	1.1	0.064	2.7	0.226	5.0	0.111	2.1	0.135	0.4	-	-	-	-	0.051	1.2	-
78	0.088	2.5	0.053	1.6	0.050	1.2	0.073	0.0	-	-	-	-	-	-	0.037	-0.2	-
79	0.074	1.4	0.039	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
80	0.056	0.1	0.057	2.0	0.045	0.7	0.089	0.9	0.145	0.7	-	-	0.049	0.9	0.043	0.4	-
81	0.024	-2.3	0.064	2.7	-	-	0.087	0.8	0.083	-1.3	-	-	-	-	0.037	-0.2	0.088
82	0.064	0.7	0.033	-0.5	-	-	0.072	0.0	0.167	1.5	-	-	-	-	0.100	5.0	-
83	0.079	1.8	0.055	1.8	0.046	0.8	0.095	1.3	0.139	0.5	-	-	-	-	0.036	-0.3	nd
84	0.107	3.9	0.025	-1.4	-	-	-	-	-	-	-	-	-	-	-	-	-
85	0.014	-2.9	nd	-4.0	nd	-4.0	0.011	-3.4	-	-	-	-	-	-	-	-	-
86	0.512	5.0	0.448	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-

Lab code	Hexachlorocyclohexane (HCH), beta-isomer	z-score (FFP-RSD 25%)															
		MRRL	0.005	0.005	0.005	Oxychlordane	0.010	0.010	0.010	Bixafen	0.010	0.010	0.005	0.010	0.010	0.010	Spinosyn A
Assign. value	0.054			0.038				0.072			0.175		0.040		0.039		
Robust RSD	0.018			0.019				0.023			0.030		0.014		0.010		
Number of results	88		88		75		79		52		15		11		53		35
87	0.018	-2.7	0.012	-2.7	nd	-4.0	0.012	-3.3	0.028	-3.1	-	-	0.005	-3.5	nd	-4.0	-
88	0.050	-0.3	0.044	0.7	0.042	0.4	0.080	0.4	0.105	-0.6	-	-	-	-	0.037	-0.2	-
89	0.041	-1.0	nd	-4.0	0.032	-0.6	0.079	0.4	0.078	-1.4	-	-	-	-	0.036	-0.3	0.070
90	0.037	-1.3	0.020	-1.9	0.022	-1.7	0.052	-1.1	0.097	-0.8	nd	-4.0	nd	-4.0	0.026	-1.3	nd
91	0.072	1.3	0.057	2.0	0.051	1.3	0.076	0.2	-	-	-	-	-	-	-	-	-
92	0.042	-0.9	0.088	5.0	0.035	-0.3	0.053	-1.0	-	-	-	-	-	-	0.028	-1.2	-
93	0.060	0.4	0.016	-2.3	nd	-4.0	0.114	2.3	0.148	0.8	-	-	-	-	0.038	-0.1	0.113
94	0.045	-0.7	0.054	1.7	0.039	0.1	0.094	1.2	0.143	0.7	-	-	0.025	-1.5	0.044	0.5	0.116
95	0.076	1.6	0.045	0.8	0.047	0.9	0.091	1.0	0.167	1.5	0.185	0.2	-	-	0.045	0.6	nd
96	0.011	-3.2	nd	-4.0	-	-	0.017	-3.1	-	-	-	-	-	-	-	-	-
97	-	-	-	-	-	-	-	-	-	-	-	0.058	1.8	-	-	-	-
98	0.061	0.5	0.034	-0.4	nd	-4.0	0.065	-0.4	-	-	-	-	-	-	-	-	-
99	0.065	0.8	0.017	-2.2	0.027	-1.2	0.056	-0.9	-	-	-	-	-	-	-	-	-
100	0.045	-0.7	0.032	-0.6	0.027	-1.2	0.082	0.5	-	-	-	-	-	-	-	-	-
101	-	-	0.102	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
102	0.032	-1.6	0.018	-2.1	nd	-4.0	0.042	-1.7	0.136	0.4	-	-	-	-	-	nd	-4.0

Lab code	Hexachlorcyclohexane (HCH), beta-isomer	z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)		z-score (FFP-RSD 25%)												
MRRL	0.005	0.005		0.005		0.010		0.010		0.010		0.005		0.010				
Assign. value	0.054	0.038		0.038		0.072		0.122		0.175		0.040		0.039				
Robust RSD	0.018	0.019		0.013		0.023		0.030		0.030		0.014		0.010				
Number of results	88	88		75		79		52		15		11		53				
<b>103</b>	0.045	-0.7	0.034	-0.4	0.034	-0.4	0.082	0.5	0.115	-0.2	-	-	-	0.036	-0.3	-	-	
<b>105</b>	0.043	-0.8	0.022	-1.6	0.028	-1.1	0.083	0.6	0.124	0.1	0.176	0.0	-	-	0.041	0.2	0.097	-0.1
<b>106</b>	nd	-4.0	0.030	-0.8	nd	-4.0	0.070	-0.1	0.140	0.6	0.150	-0.6	-	-	0.040	0.1	0.100	0.0
<b>107</b>	0.064	0.7	0.027	-1.1	nd	-4.0	0.057	-0.8	-	-	-	-	-	-	-	-	-	-
<b>108</b>	0.038	-1.2	0.032	-0.6	0.043	0.5	0.092	1.1	0.094	-0.9	-	-	-	0.036	-0.3	-	-	-

nd: not detected

## Appendix 1 - Target pesticide list

**Table A-1:** List of mandatory analytes and minimum required reporting levels (MRRL).

Analyte	MRRL (mg/kg)
Aldrin	0.005
Azinphos-methyl	0.010
Bifenthrin	0.010
Chlordane, cis-	0.005
Chlordane, trans-	0.005
Chlorgenvinphos	0.010
Chlorpyrifos(-ethyl)	0.010
Chlorpyrifos-methyl	0.010
Cyfluthrin (sum of isomers)	0.010
Cypermethrin (sum of isomers)	0.010
DDD, p,p'- (TDE)	0.005
DDE, p,p'	0.005
DDT, o,p'	0.005
DDT, p,p'	0.005
Deltamethrin (cis-isomer)	0.010
Diazinon	0.010
Dieldrin	0.005
Endosulfan, alpha-	0.005
Endosulfan, beta-	0.005
Endosulfan-sulfate	0.005
Endrin	0.005
Famoxadone	0.010
Fenthion oxon	0.010
Fenthion oxon sulfone	0.010
Fenthion oxon sulfoxide	0.010
Fenthion sulfone	0.010
Fenthion sulfoxide	0.010
Fenvalerate/Esfenvalerate (sum of RR, SS, RS & SR isomers)	0.010
Fipronil	0.005
Fipronil sulfone	0.005
Heptachlor	0.005
Heptachlorepoxyd, cis-	0.005
Heptachlorepoxyd, trans-	0.005
Hexachlorcyclohexane (HCH), alpha-isomer	0.005
Hexachlorcyclohexane (HCH), beta-isomer	0.005
Hexachlorcyclohexane (HCH), gamma-isomer (Lindane)	0.005
Hexachlorobenzene (HCB)	0.005
Indoxacarb (sum of isomers)	0.010
lambda-Cyhalothrin (sum of isomers)	0.010
Malathion (parent only)	0.010
Methoxychlor, 4,4'	0.010
Nitrofen	0.005

Analyte	MRRL (mg/kg)
Oxychlordane	0.005
Parathion(-ethyl)	0.010
Parathion-methyl (parent only)	0.010
Pendimethalin	0.010
Permethrin (sum of isomers)	0.010
Phosmet (parent only)	0.010
Phoxim	0.010
Pirimiphos-methyl	0.010
Profenofos	0.010
Pyrazophos	0.010
Quintozene (parent only)	0.005
Resmethrin (sum of isomers)	0.010
Tecnazene	0.005
Vinclozolin (parent only)	0.005

**Table A-2:** List of voluntary analytes and minimum required reporting levels (MRRL).

Analyte	MRRL (mg/kg)
Benzovindiflupyr	0.010
Bixafen (parent only)	0.010
Bixafen-desmethyl	0.010
Boscalid (parent only)	0.010
Boscalid (hydroxy metabolite 2-chloro-N-(4'-chloro-5-hydroxybiphenyl-2-yl)nicotinamide, free phenol, only)	0.010
Carbendazim (Carbendazim only)	0.010
Coumatetralyl	0.010
Chlordecone	0.005
Chlorpropham (parent only)	0.010
Cyproconazole	0.010
Didecyldimethylammonium chloride (DDAC-C10)	0.010
Epoxiconazole	0.010
Etofenprox	0.010
Fenpropidin (parent only)	0.010
Fenpyrazamine	0.010
Fenpropimorph (parent only)	0.010
Fluopyram	0.010
Fluopyram benzamide	0.010
Fluquinconazole	0.010
Flusilazole (parent only)	0.010
Metaflumizone (sum of isomers)	0.010
Penflufen (sum of isomers)	0.010
Penthiopyrad	0.010
Prochloraz (parent only)	0.010
BTS 44595 (Prochloraz metabolite)	0.010
BTS 44596 (Prochloraz metabolite)	0.010
Prothioconazole-desthio (sum of isomers)	0.010

Analyte	MRRL (mg/kg)
Spinosyn A <sup>(2)</sup>	0.010
Spinosyn D <sup>(2)</sup>	0.010
Spinosad <sup>(1)</sup>	0.010
Spiroxamine (parent only, sum od isomers)	0.010
Sulfoxaflor (sum of isomers)	0.010
tau-Fluvalinate (sum of isomers)	0.010
Tebuconazole	0.010
Tebuconazole, Hydroxy- (free phenol, only)	0.010
Tetraconazole (sum of isomers)	0.010
Thiacloprid	0.010
Thiophanate methyl	0.010
Mefentrifluconazole	0.010
Metconazole (sum of isomers)	0.010
Molinate	0.010
Oxadiargyl	0.010
Oxasulfuron	0.010
Oxyfluorfen	0.010
Picolinafen	0.010
Propaquizafop (parent only)	0.010
Pyraclostrobin	0.010
Quinoclamine	0.010

<sup>(1)</sup> Results for Spinosad should be reported either if individual standards for Spinosyn A and D or a mixture of Spinosyn A and D are used for quantification.

<sup>(2)</sup> Results for Spinosyn A or D should be reported, if the individual standards were used for quantification.