



EUROPEAN COMMISSION PROFICIENCY TEST FOR PESTICIDE RESIDUES IN FRUITS AND VEGETABLES

SCREENING METHODS 08

RESULTS



ACTIVITY	DATE
Publishing the Calendar and Matrix on the Web page.	9 th December 2015
Receiving Application Form from invited laboratories.	1 st December 2015 - 11 th January 2016
Specific Protocol published on the Web site.	25 th January 2016 at the latest
Sample distribution.	8 th February 2016
Deadline for receiving results: Fill in "Results Page"	72 hours after receiving the sample
Preliminary Report: only results, no statistical treatment.	Last week of March 2016
Final Report distributed to the Laboratories.	December 2016

Participation



EURL-FV



EURL
European Proficiency Test FV-SM08

EUPT-FV-SM08- Participants

83 Participants

COUNTRY	No.	COUNTRY	No.
Austria	1	India	1
Belgium	3	Ireland	1
Bulgary	1	Italy	9
China	3	Kenia	1
Croatia	1	Latvia	1
Cyprus	1	Norway	1
Czech Republic	3	Romania	1
Denmark	1	Serbia	1
Estonia	1	Slovenia	1
Finland	1	Spain	16
France	6	Sweden	2
Germany	15	Switzerland	1
Greece	1	The Netherlands	3
Hungary	3	UK	3

Participation



EURL-FV



Austria
Belgium
Bulgary
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Italy
Ireland
Latvia
Netherlands
Norway
Romania
Serbia
Slovenia
Spain
Sweden
Switzerland
United Kingdom

**24 EU/EFTA
Countries**

China
India
Kenya
Serbia

**4 Non EU/EFTA
Countries**

Pesticides used for the treatment



Benalaxyl
Chlozolate
Clomazone
Cyazofamid
Fenpyrazamine
Heptachlor
Isopyrazam
Phenthoate
Prosulfocarb
Prothiofos
Pyrethrin
Quintozene
Rotenone
Tetramethrin
Triticonazole



RESULTS

Results

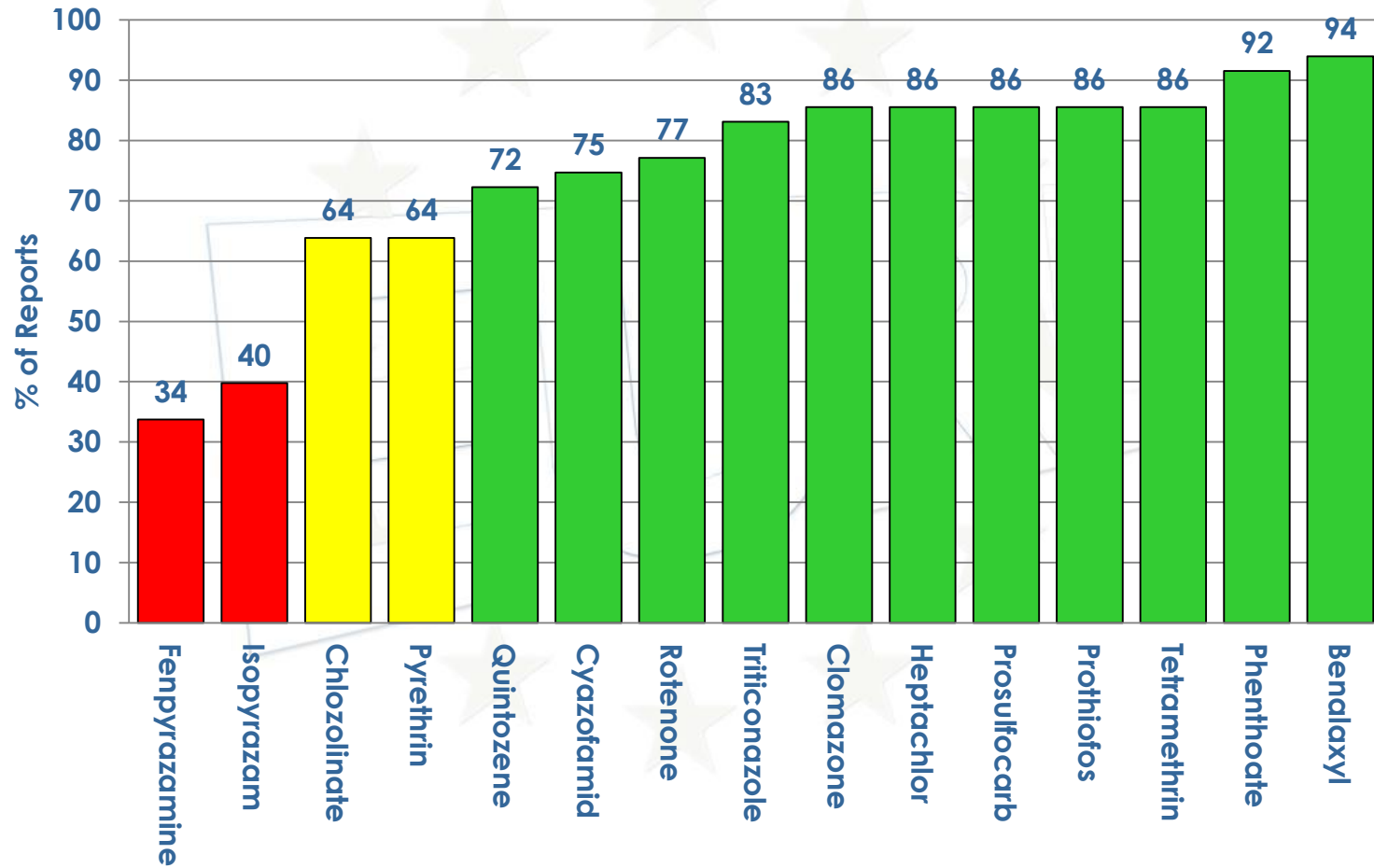
15 Evaluated Pesticides
83 Laboratories

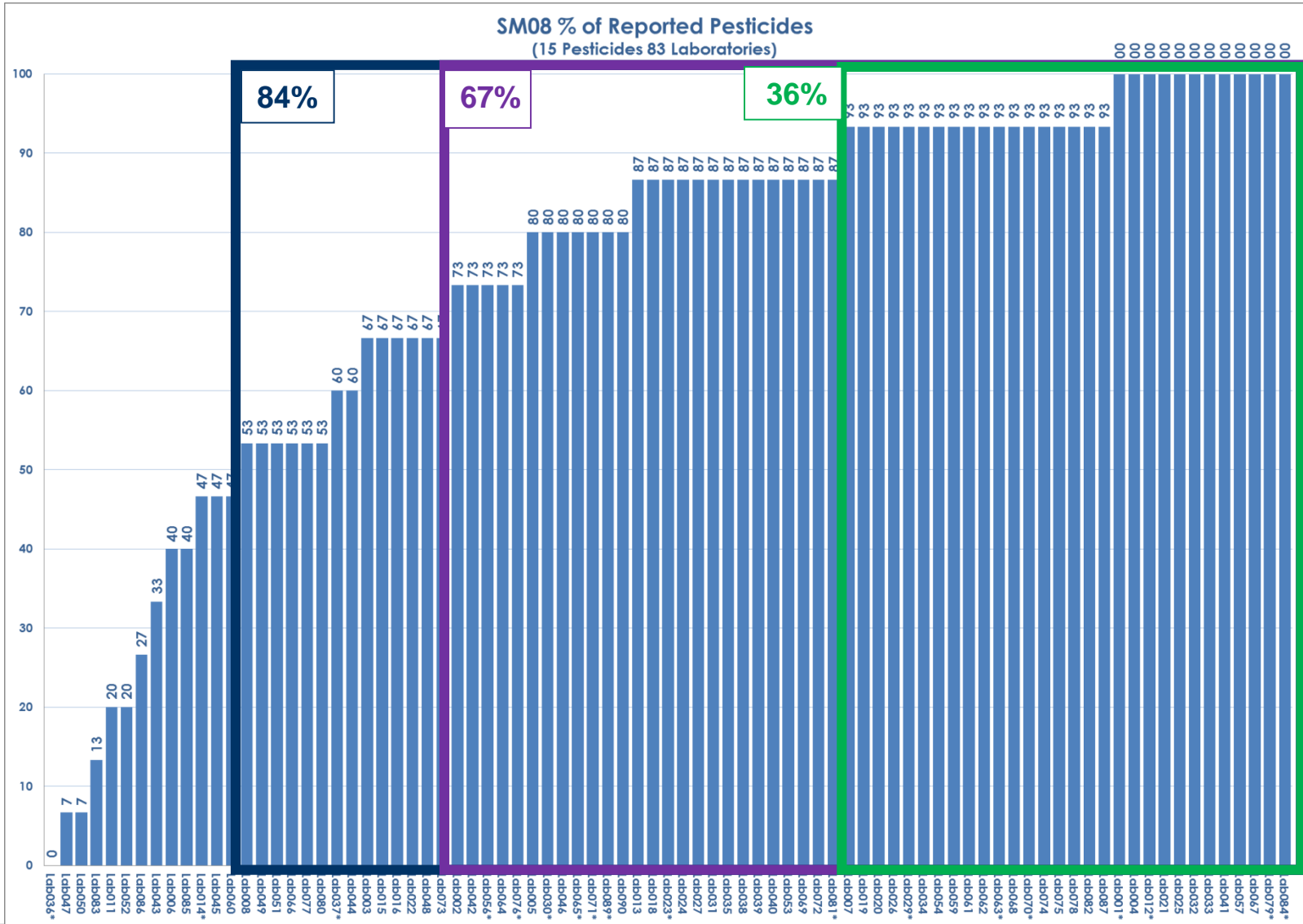
15 Pesticides = 2+2+11

	Benalaxyl	Chlozolinate	Clomazone	Cyazofamid	Fenpyrazamine	Heptachlor	Isopyrazam	Phenthoate	Prosulfocarb	Prothiofos	Pyrethrin	Quintozene	Rotenone	Tetramethrin	Trificonazole
Total Number of Reported Pesticides	78	53	71	62	28	71	33	76	71	71	53	60	64	71	69
% of Reported Pesticides	94	64	86	75	34	86	40	92	86	86	64	72	77	86	83

Results

SM08 % of Reported Pesticides (83 Laboratories Reported Data)



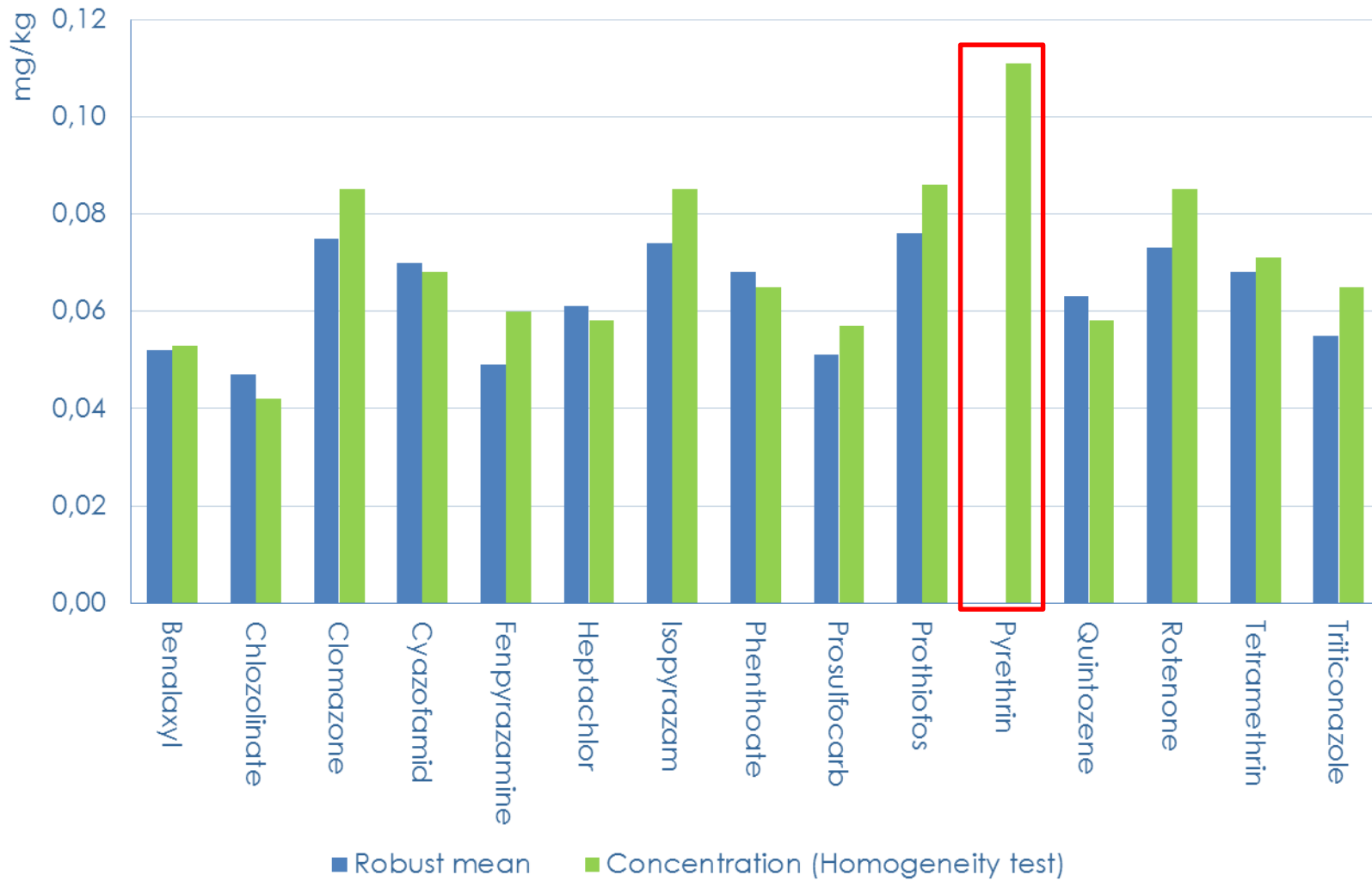




Concentrations

Pesticides	Robust mean (mg/kg)	CONCENTRATION Homogeneity test (mg/kg)	CV (%)
Benalaxyl	0.052	0.053	20.3
Chlozolinate	0.047	0.042	42.4
Clomazone	0.075	0.085	25.0
Cyazofamid	0.070	0.068	33.3
Fenpyrazamine	0.049	0.060	17.7
Heptachlor	0.061	0.058	38.1
Isopyrazam	0.074	0.085	23.2
Phenthoate	0.068	0.065	24.0
Prosulfocarb	0.051	0.057	22.4
Prothiofos	0.076	0.086	24.7
Pyrethrin		0.111	
Quintozene	0.063	0.058	34.0
Rotenone	0.073	0.085	22.5
Tetramethrin	0.068	0.071	30.4
Triticonazole	0.055	0.065	20.7

Concentrations

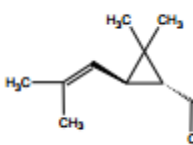
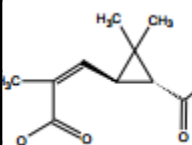
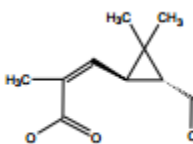
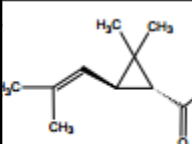
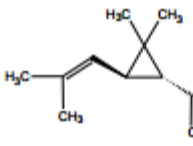
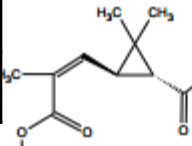
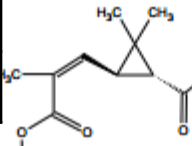


THE ACTIVE SUBSTANCE AND THE FORMULATED PRODUCT

This mixture of substances is considered by the International Organization for Standardization not to require a common name. The trivial name 'pyrethrins' is used to describe this mixture. The mixture is Pyrethrins I (which consists of pyrethrin 1, cinerin 1 and jasmolin 1) and Pyrethrins II (containing pyrethrin 2, cinerin 2 and jasmolin 2).

Pyrethrins I (chrysantemates)

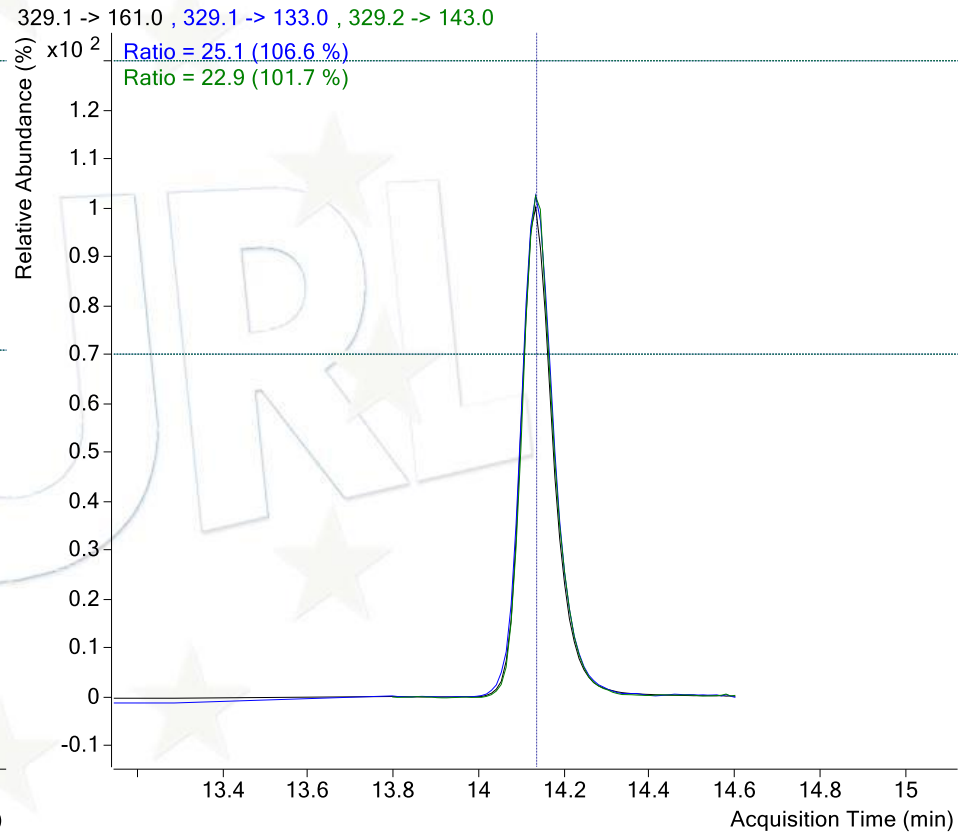
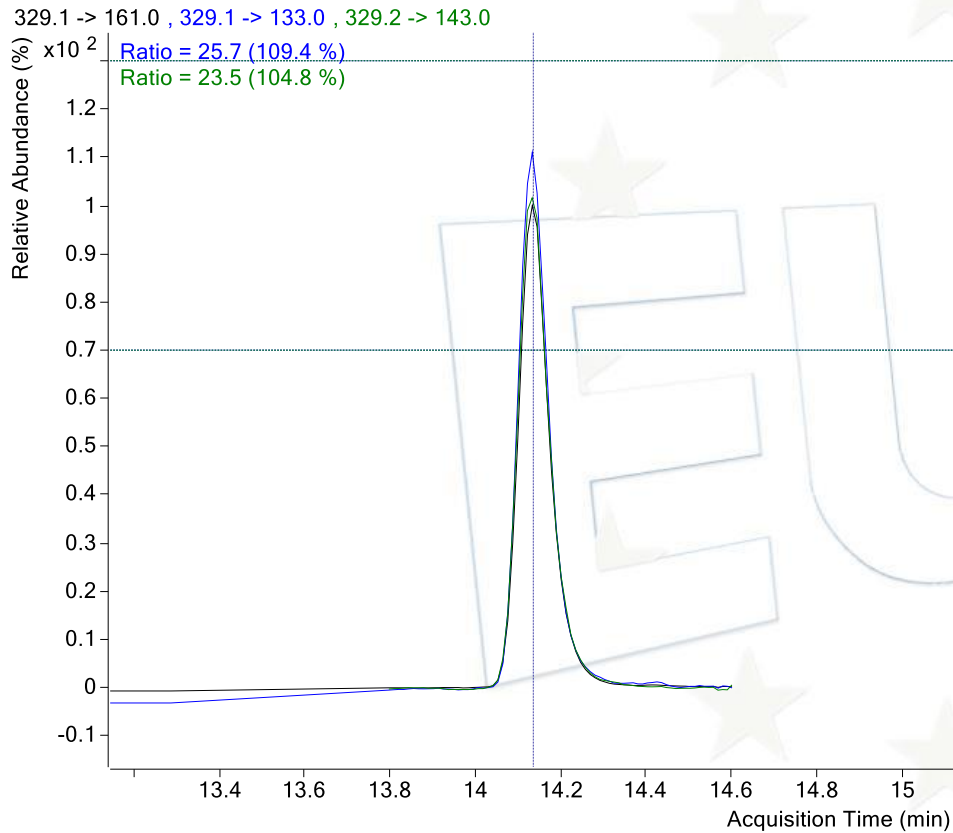
Pyrethrins II (pyrethrates)

		% in standard	
pyrethrin 1		Cinerin I	
pyrethrin 2		Jasmolin I	
cinerin 1		Pyrethrin I	
		Pyrethrin II	

Pyrethrin I

Standard 150 ug/kg in Spinach

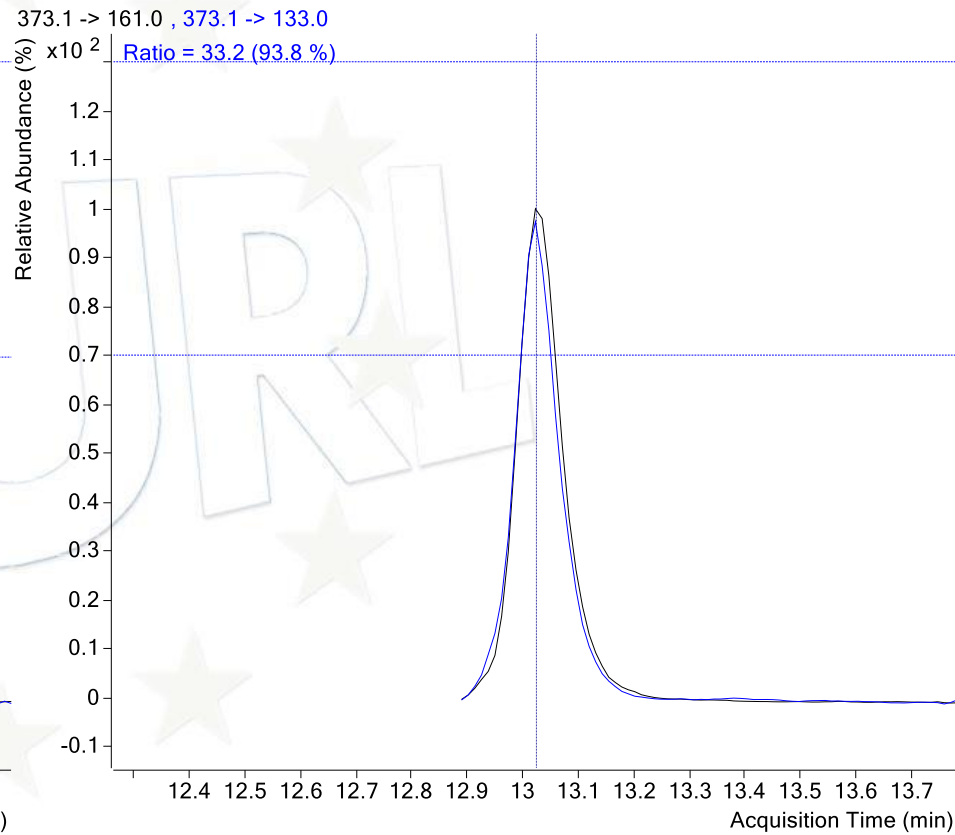
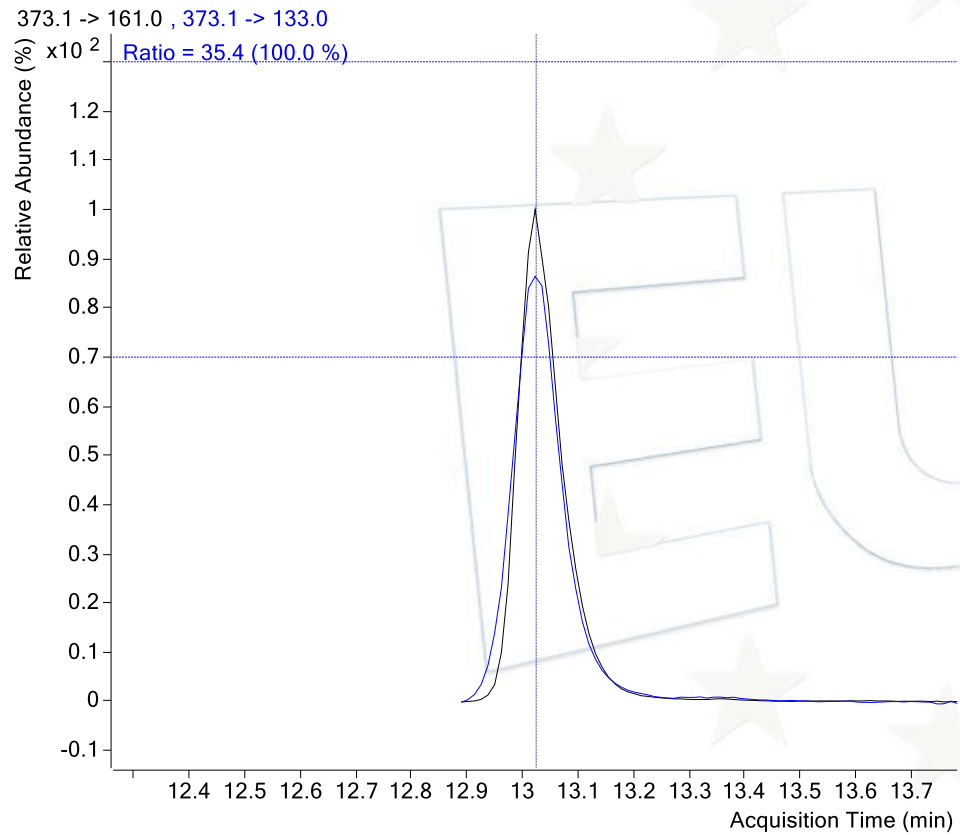
Sample 53 SM08



Pyrethrin II

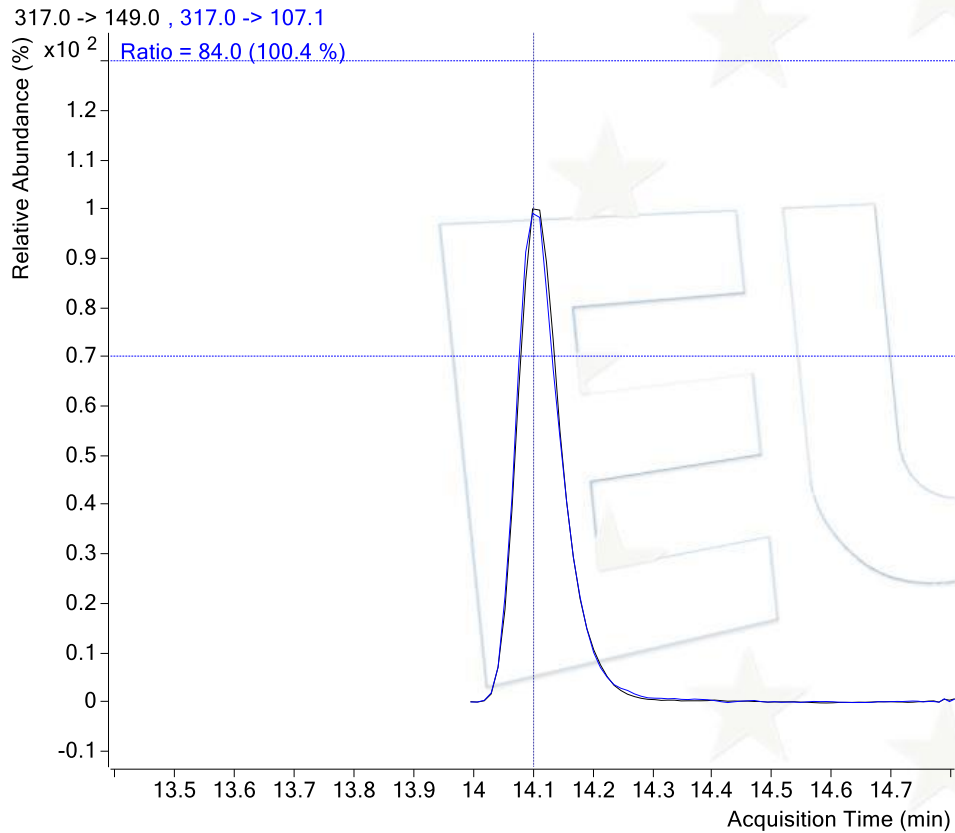
Standard 105 ug/kg in Spinach

Sample 53 SM08

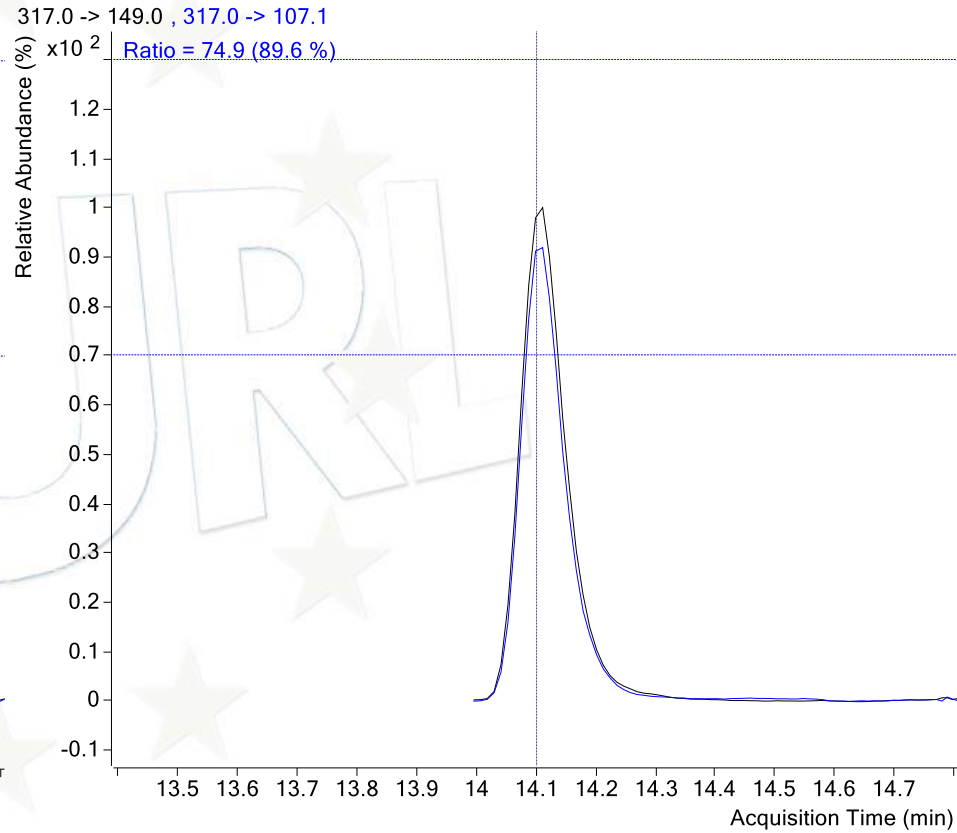


Cinerin I

Standard 15 ug/kg in Spinach

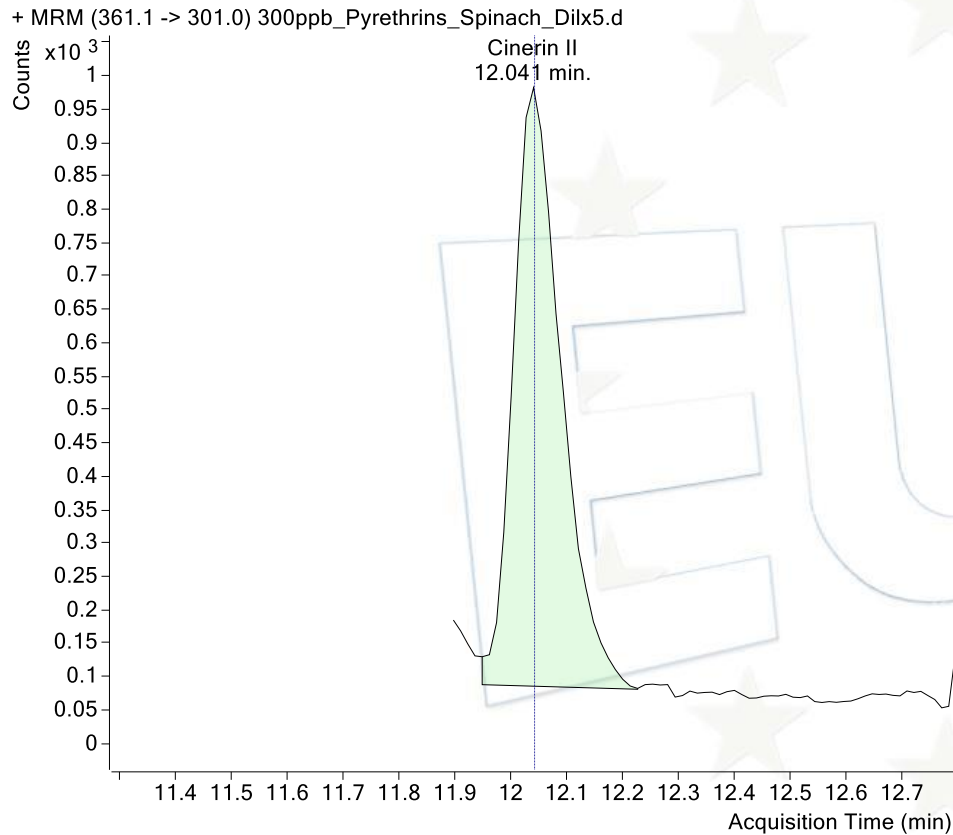


Sample 53 SM08

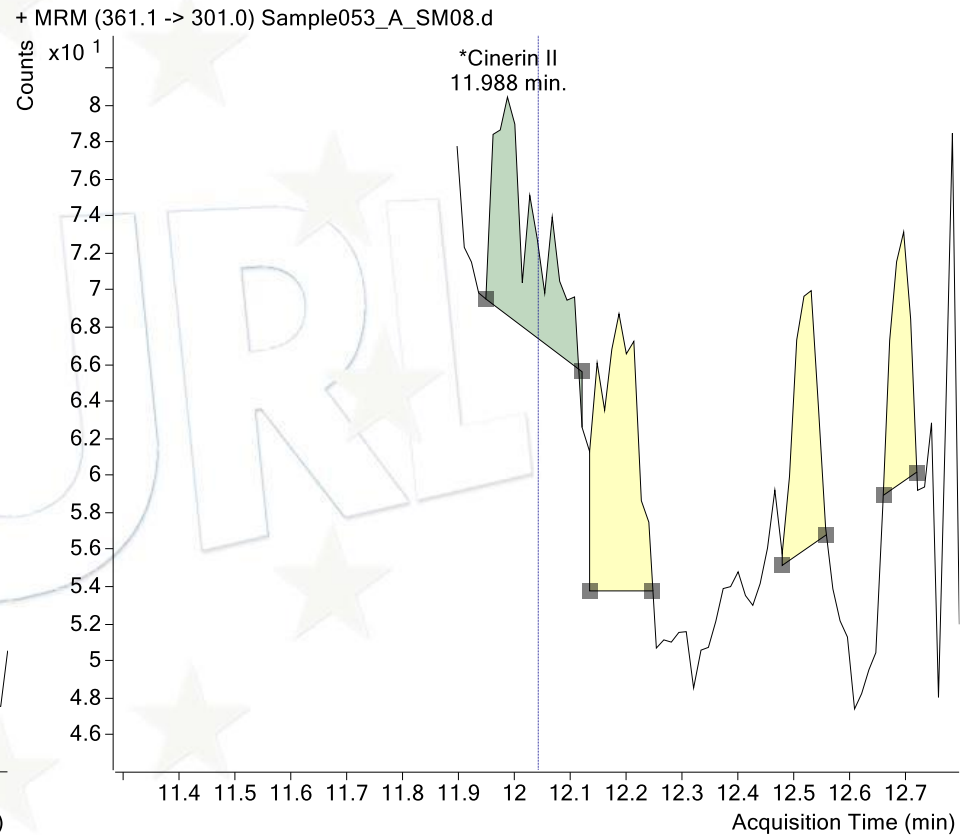


Cinerin II

Standard 15 ug/kg in Spinach



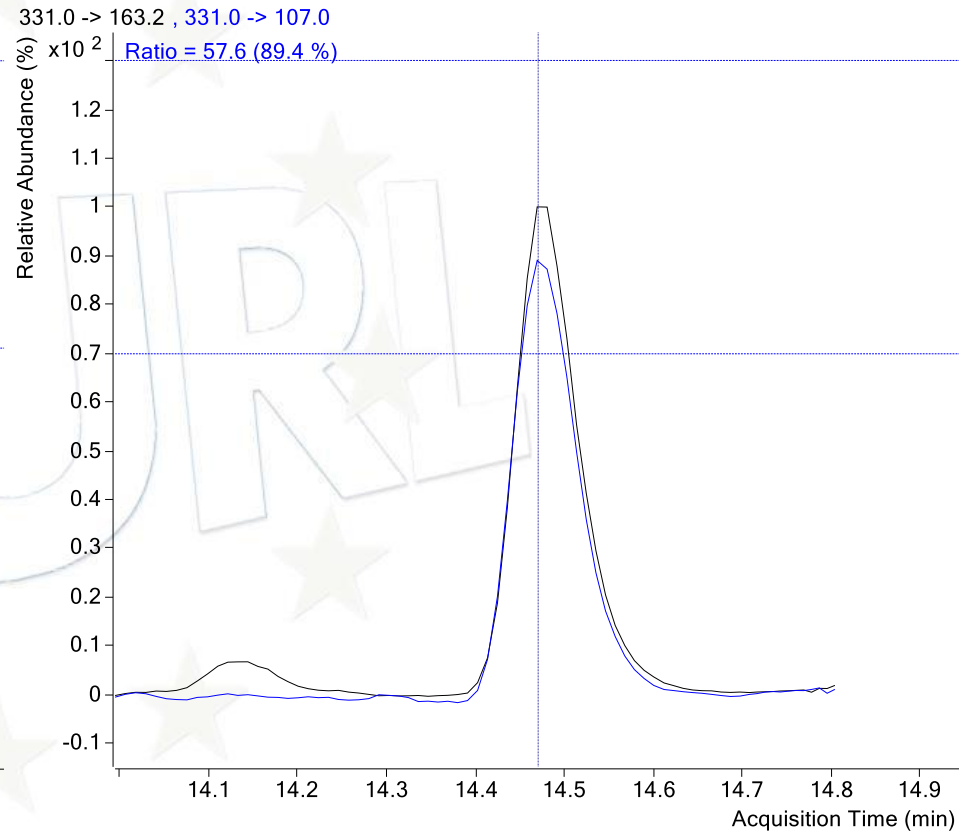
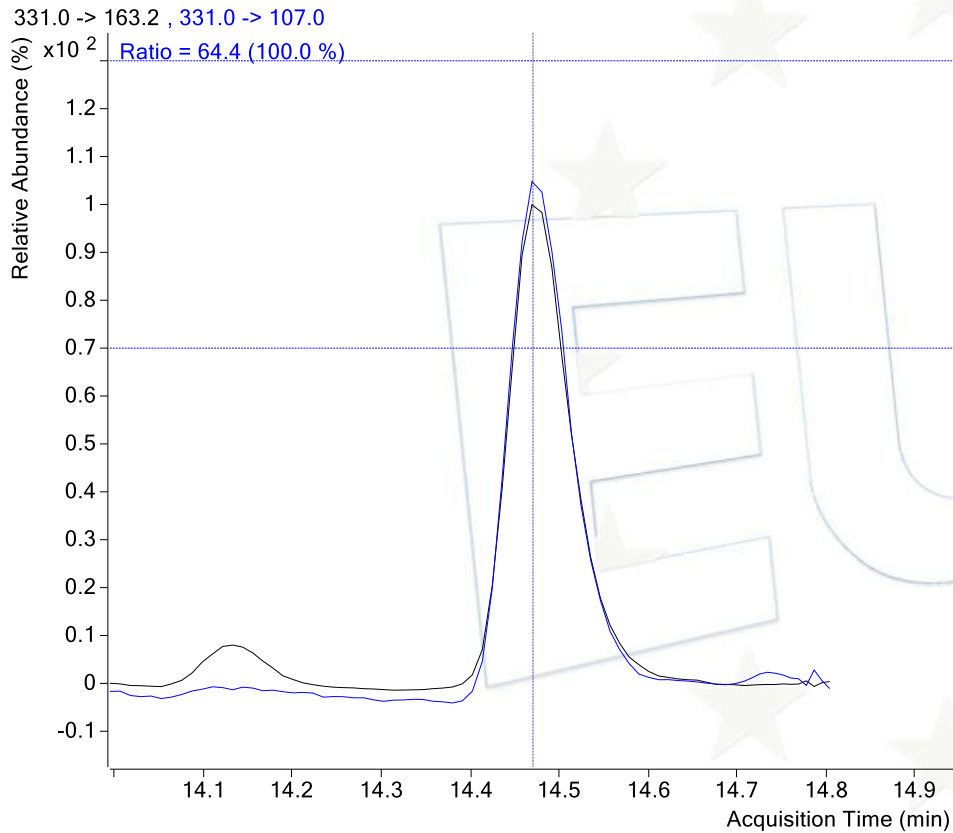
Sample 53 SM08



Jasmolin I

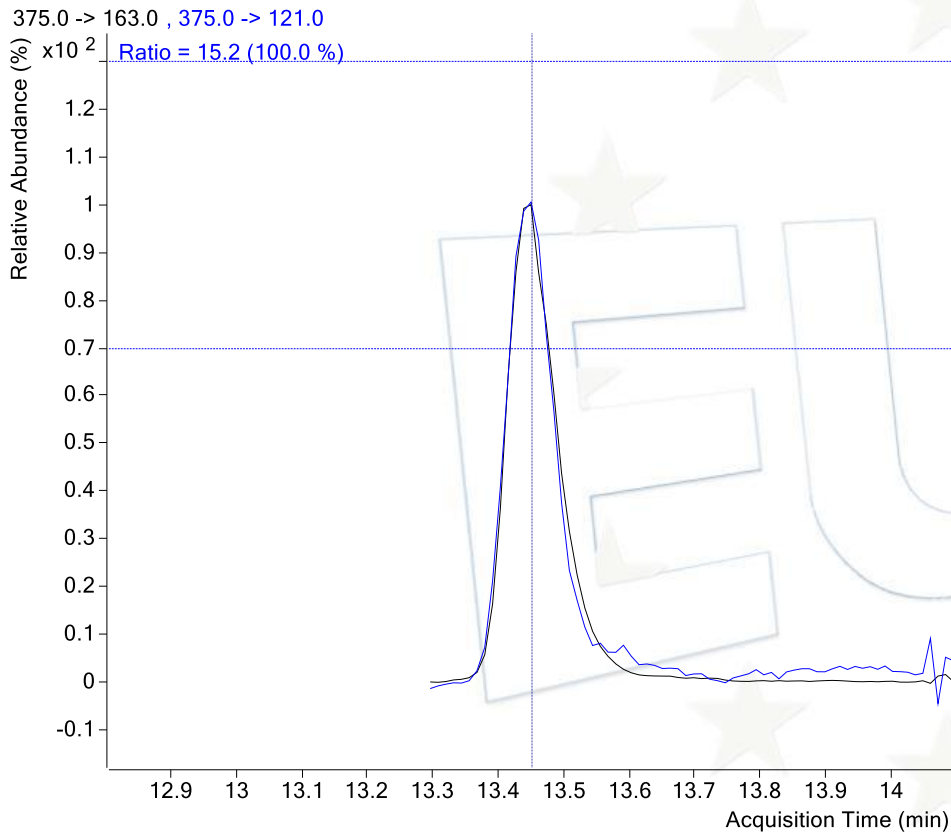
Standard 15 ug/kg in Spinach

Sample 53 SM08

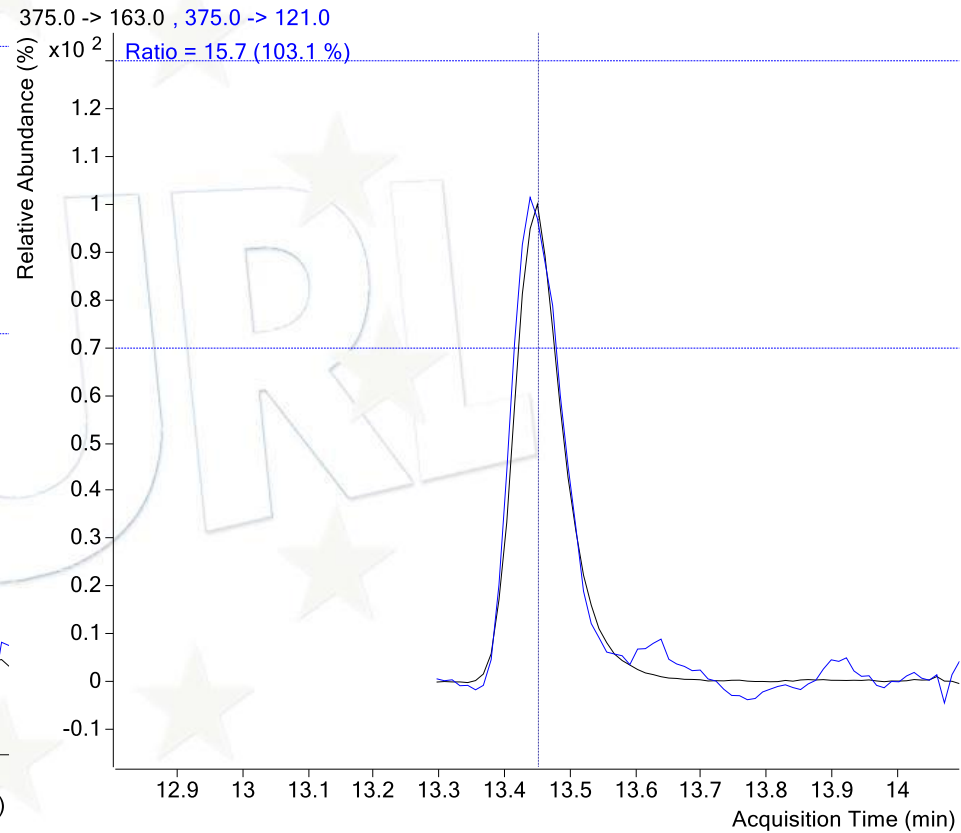


Jasmolin II

Standard 130 ug/kg in Spinach



Sample 53 SM08



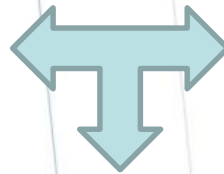
Concentration of pyrethrins reported by laboratories

53 (64%) participants reported Pyrethrins



36 participants reported concentration values for Pyrethrins

25 as “Pyrethrins”

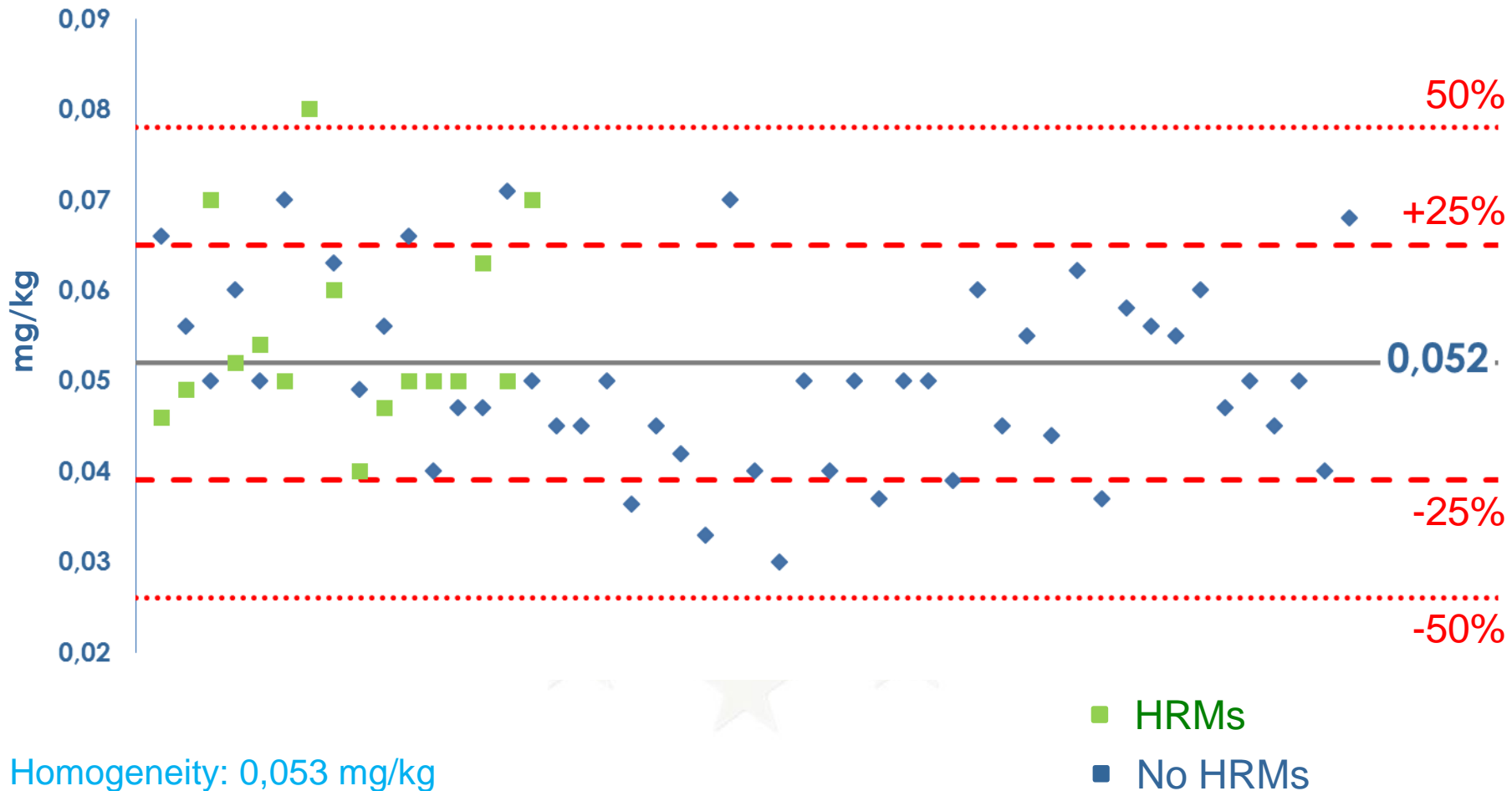


5 reported the 6 components

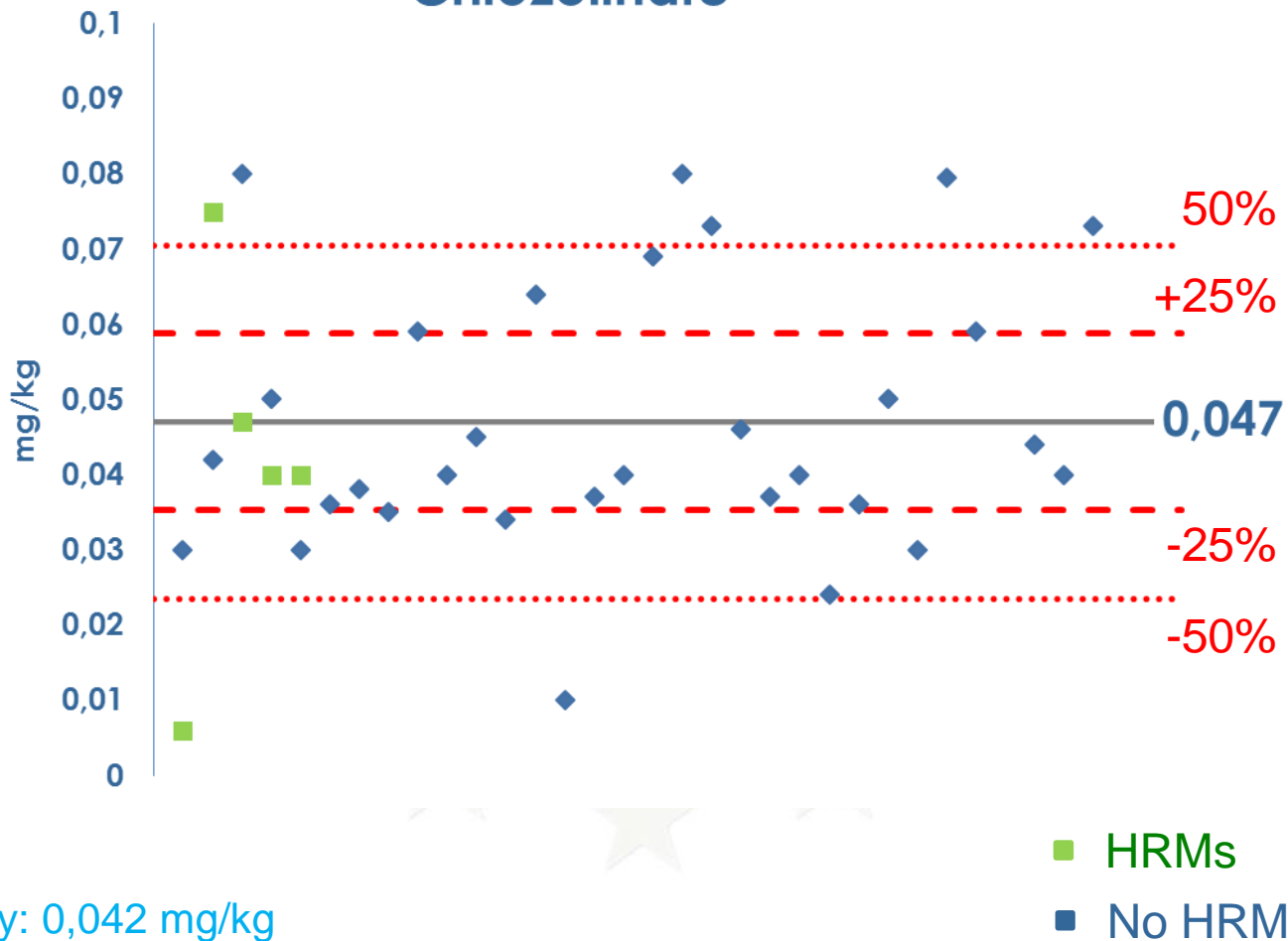
6 reported 1-5 components

	Pyrethrins	Cinerin I	Cinerin II	Jasmolin I	Jasmolin II	Pyrethrin I	Pyrethrin II
No of reports	25	9	8	7	5	13	8
% of reports	33	12	11	9	7	17	11

Benalaxyl

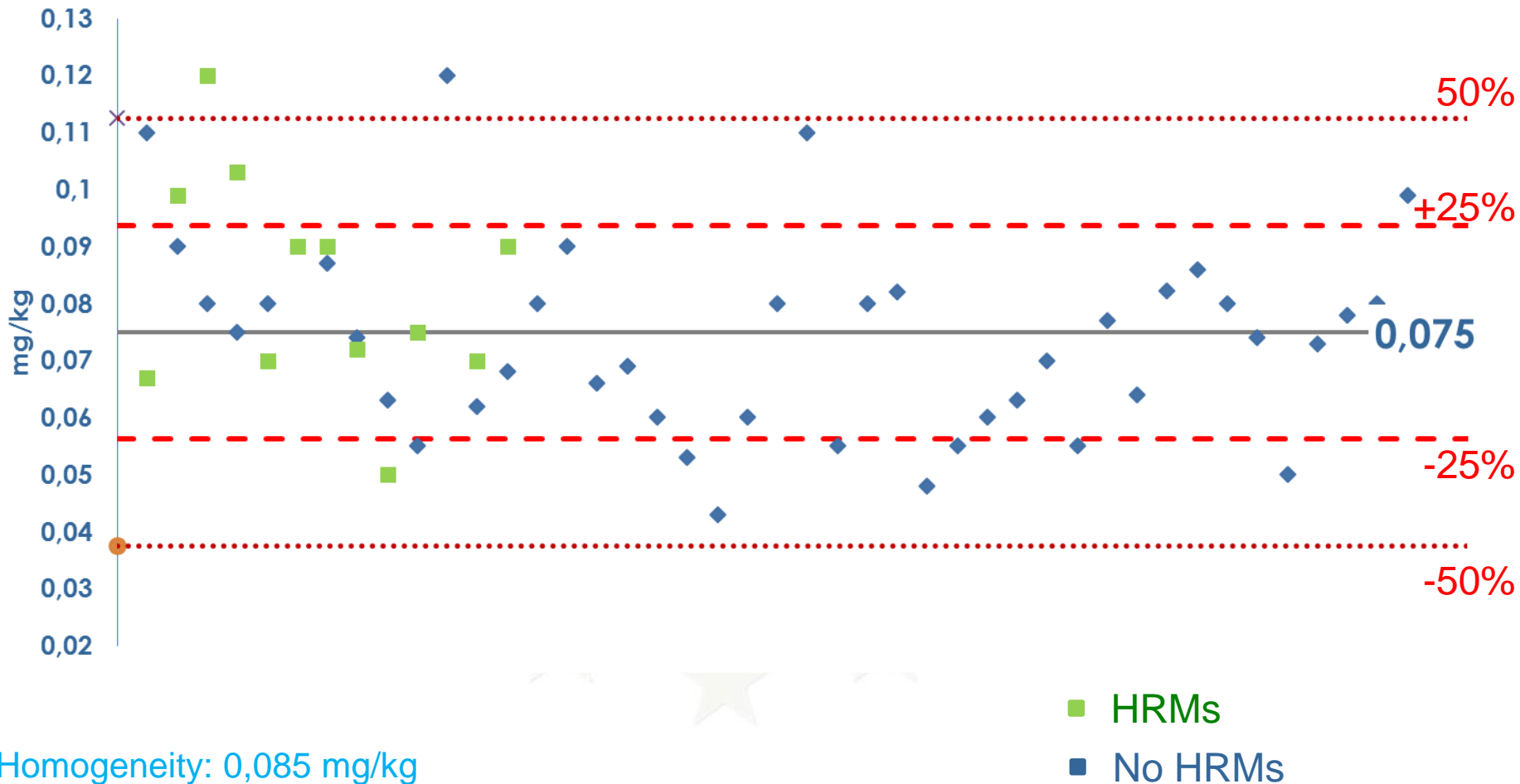


Chlozolate

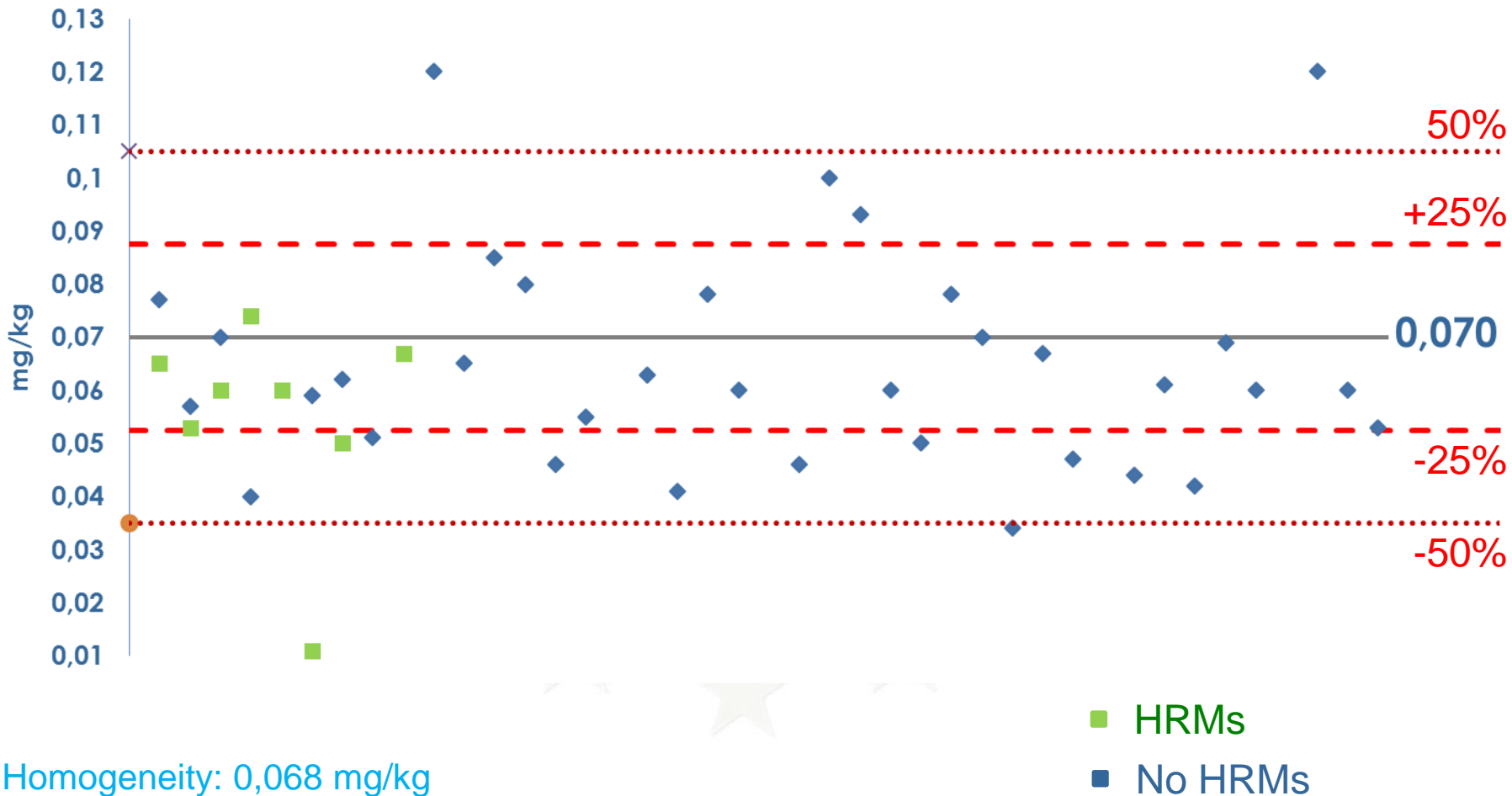


Homogeneity: 0,042 mg/kg

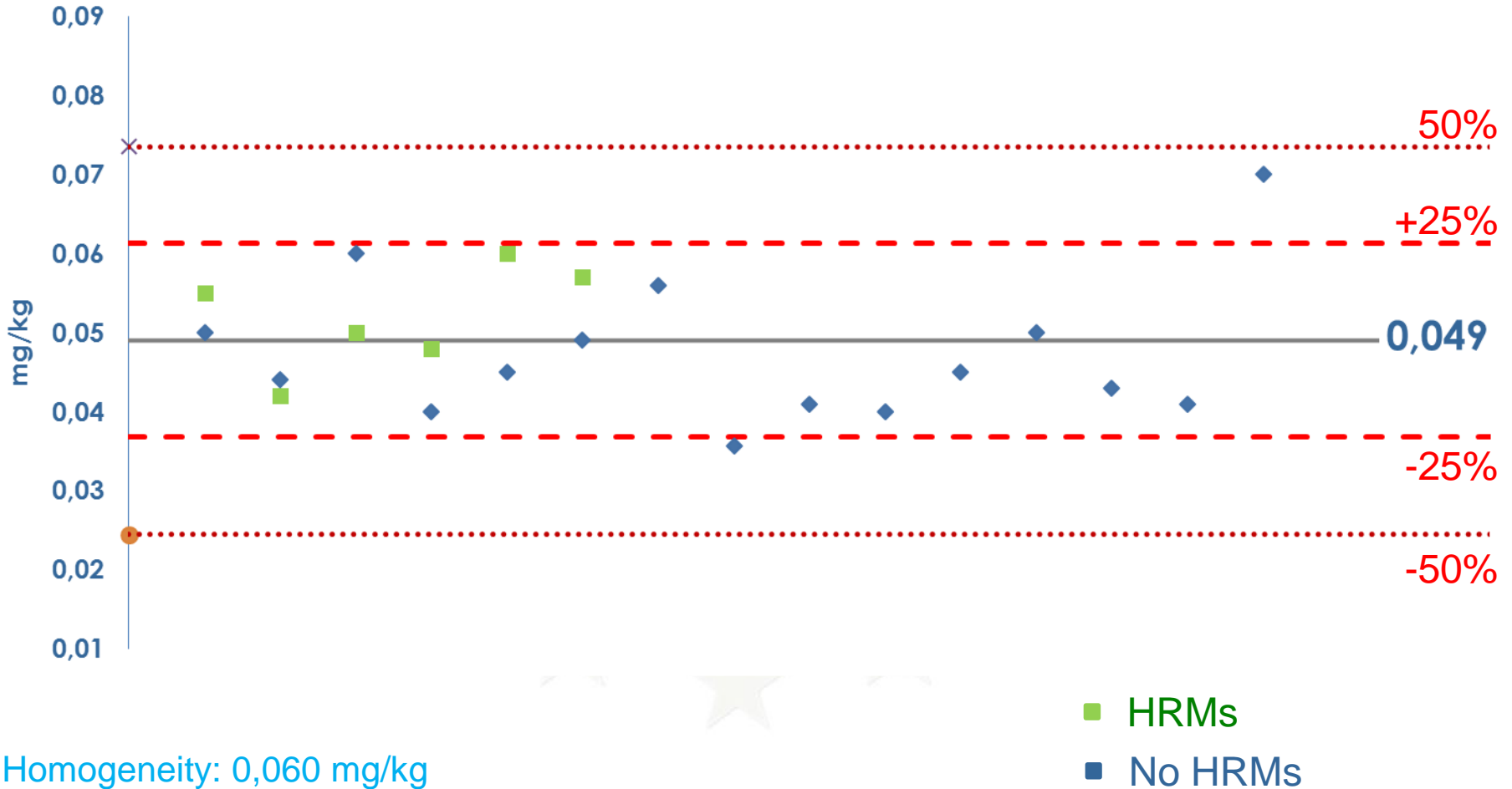
Clomazone



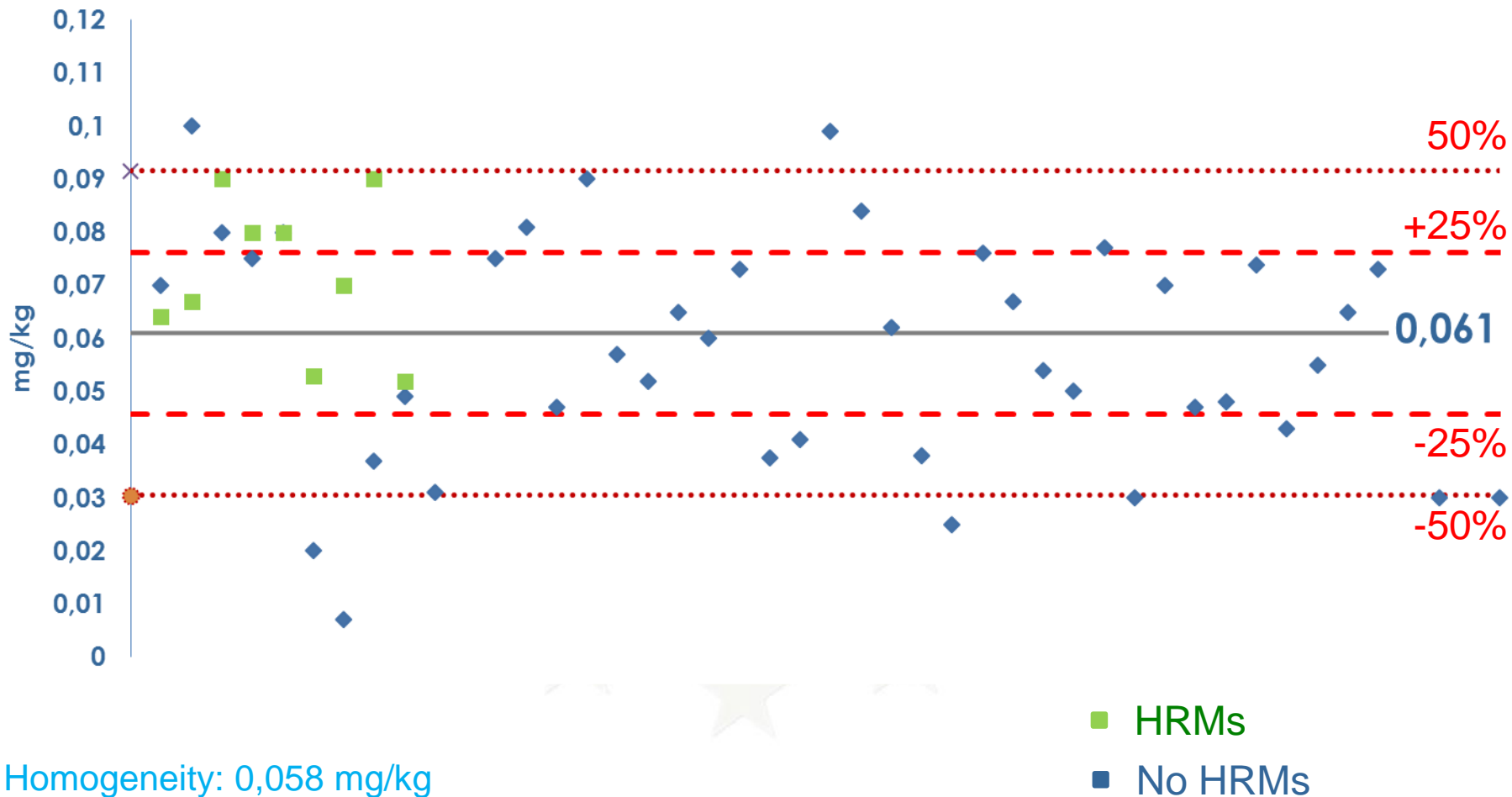
Cyazofamid



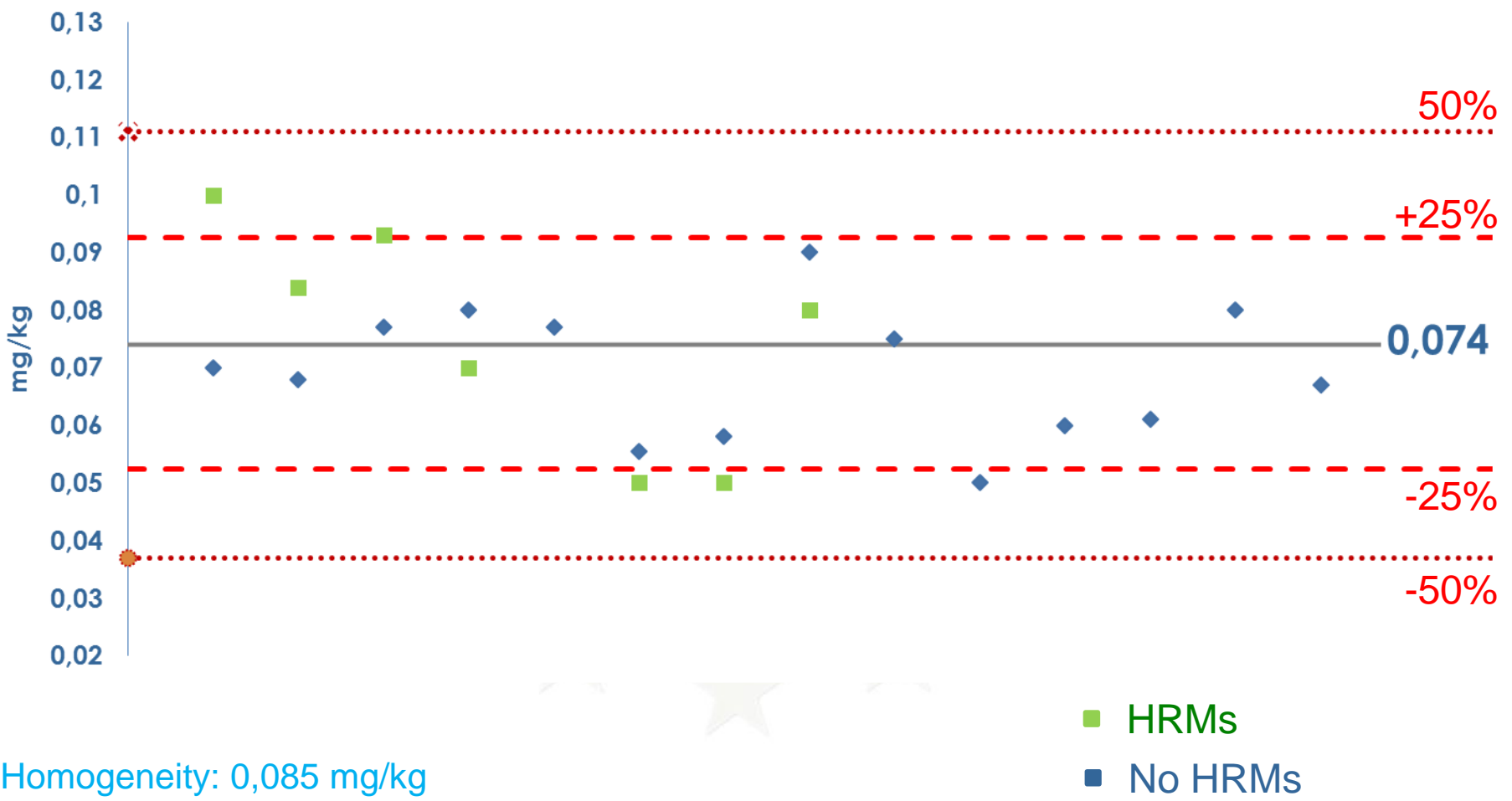
Fenpyrazamine



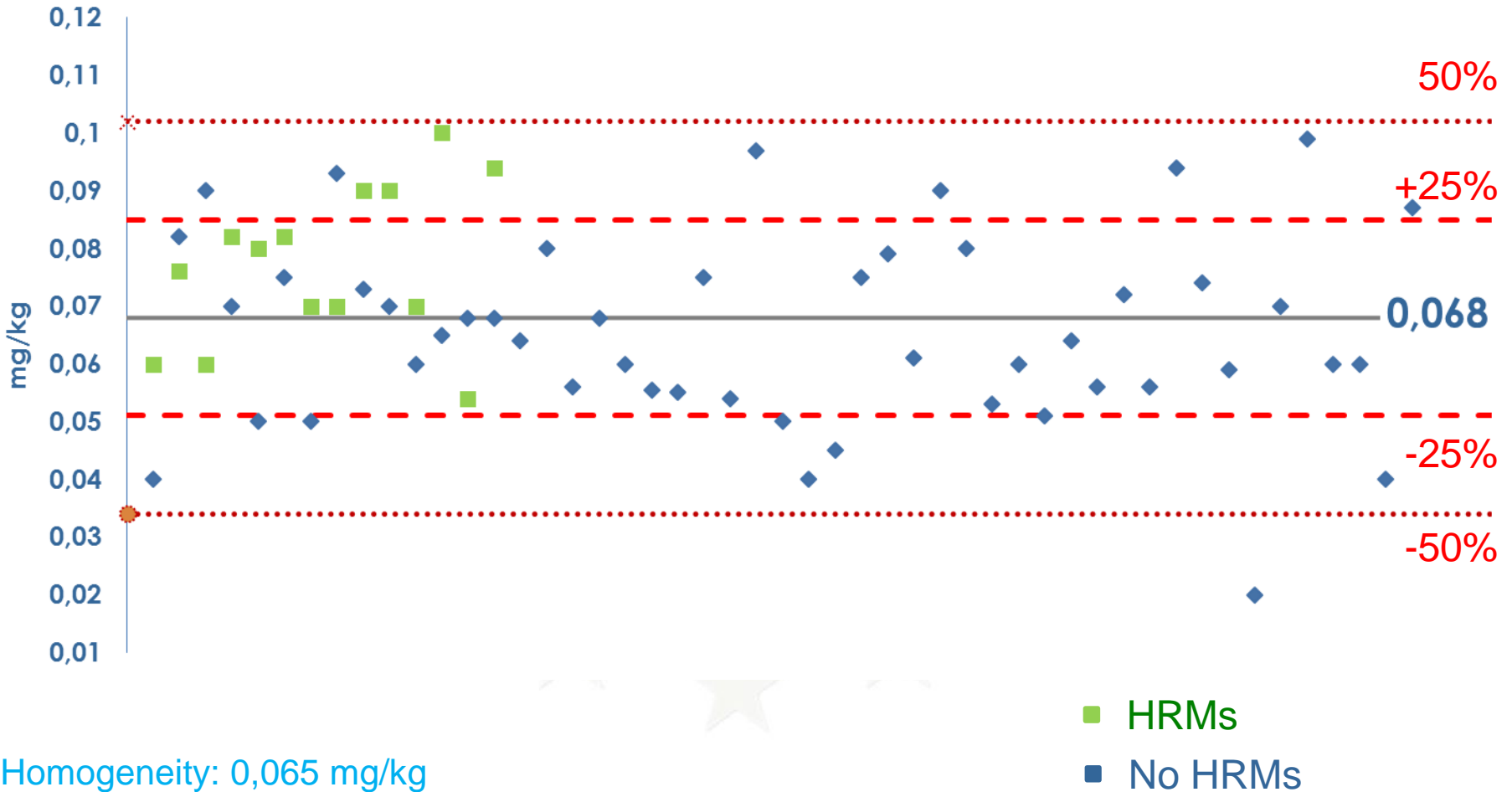
Heptachlor



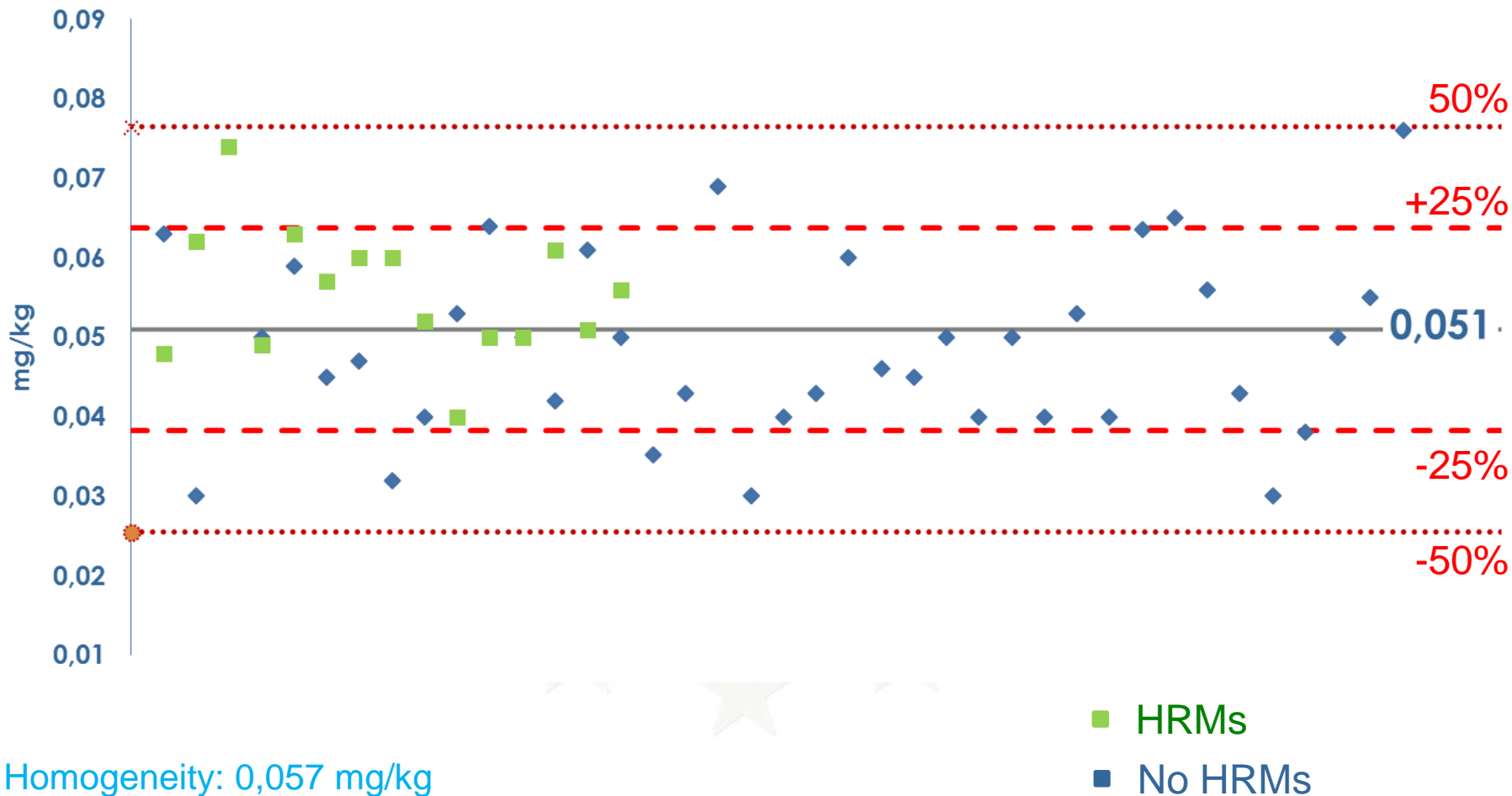
Isopyrazam



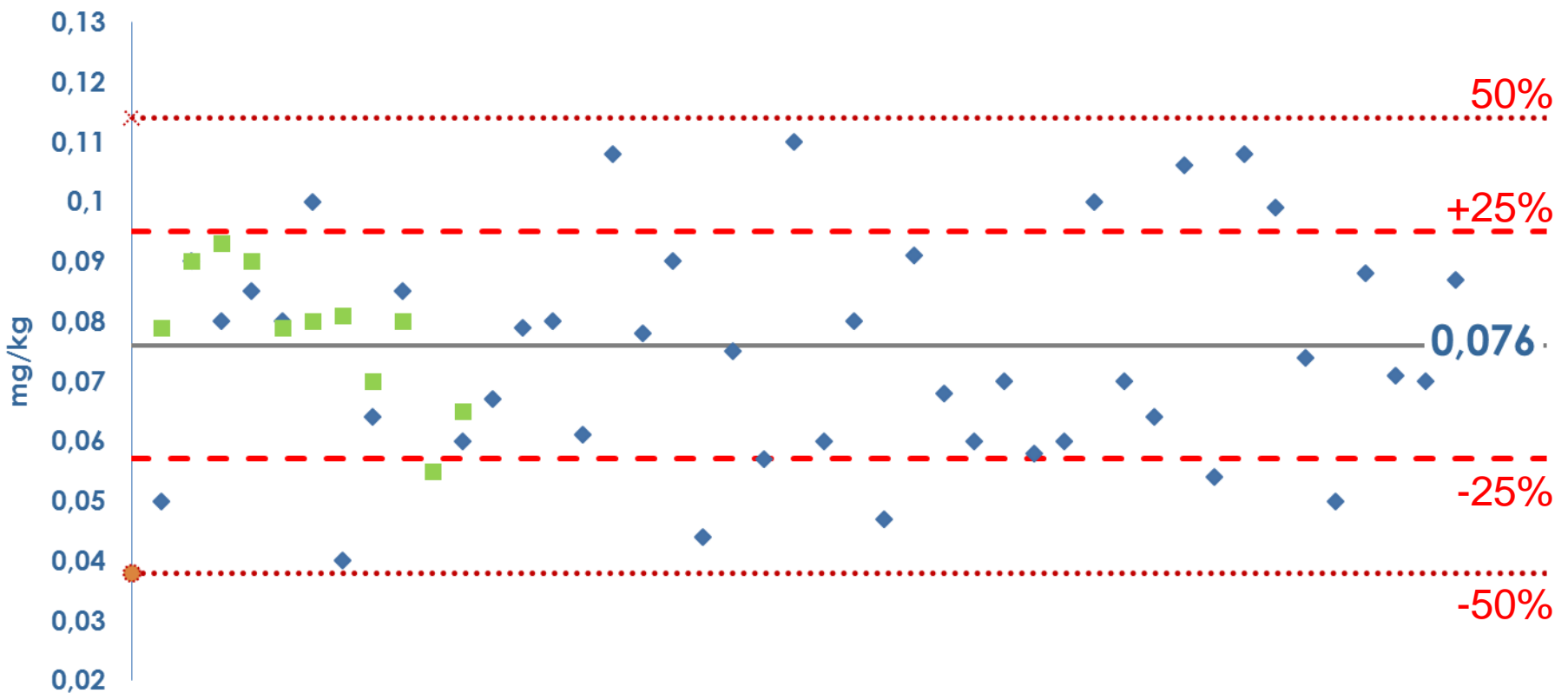
Phenthoate



Prosulfocarb



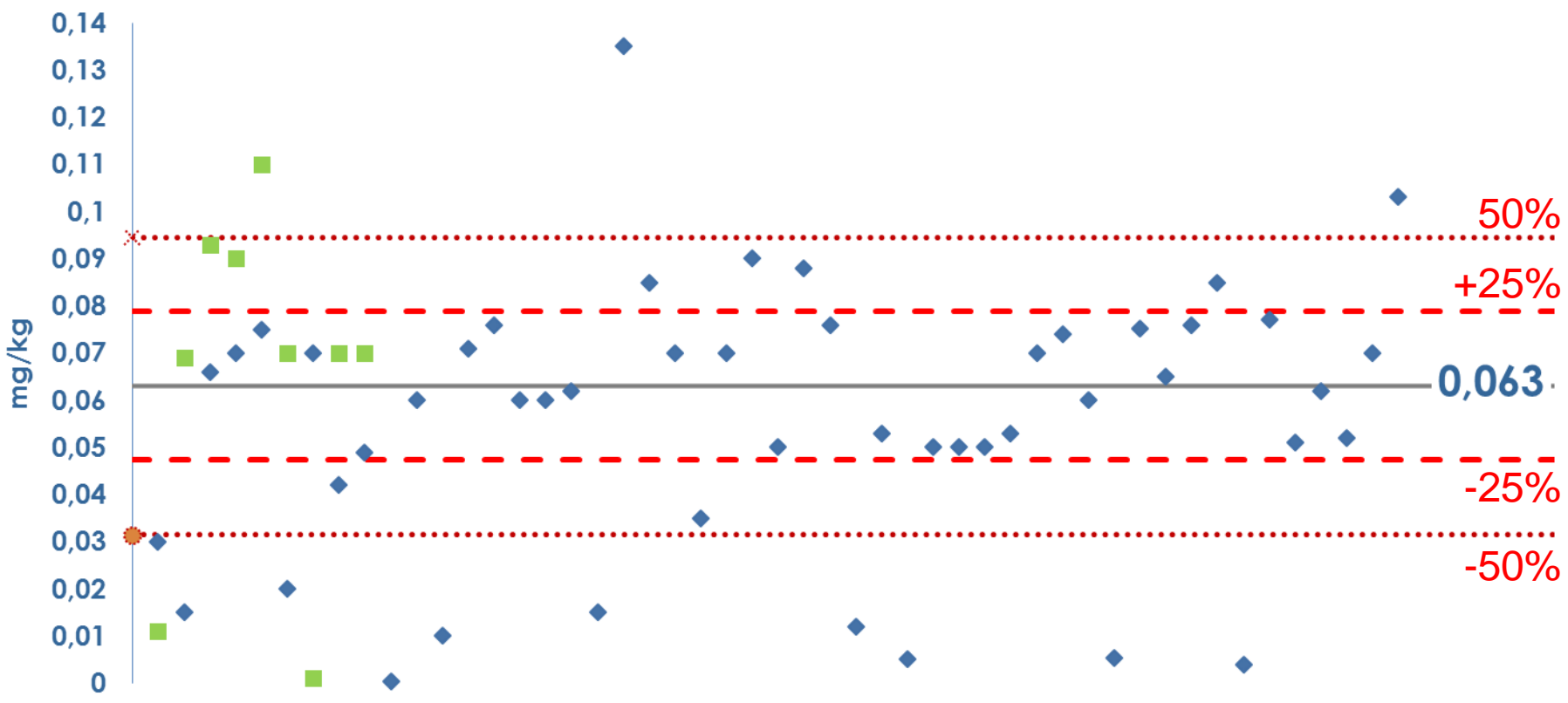
Prothiofos



Homogeneity: 0,086 mg/kg

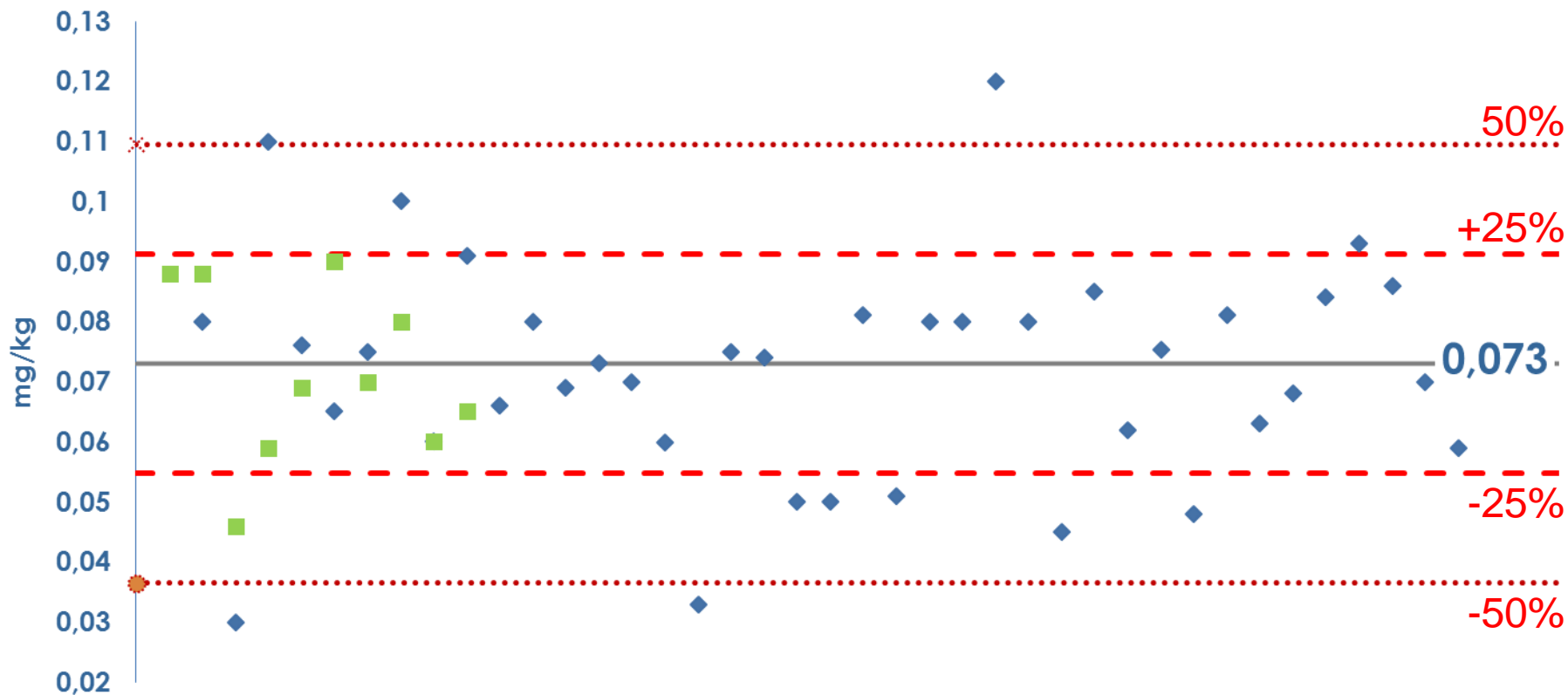
- HRMs
- No HRMs

Quintozene



Homogeneity: 0,058 mg/kg

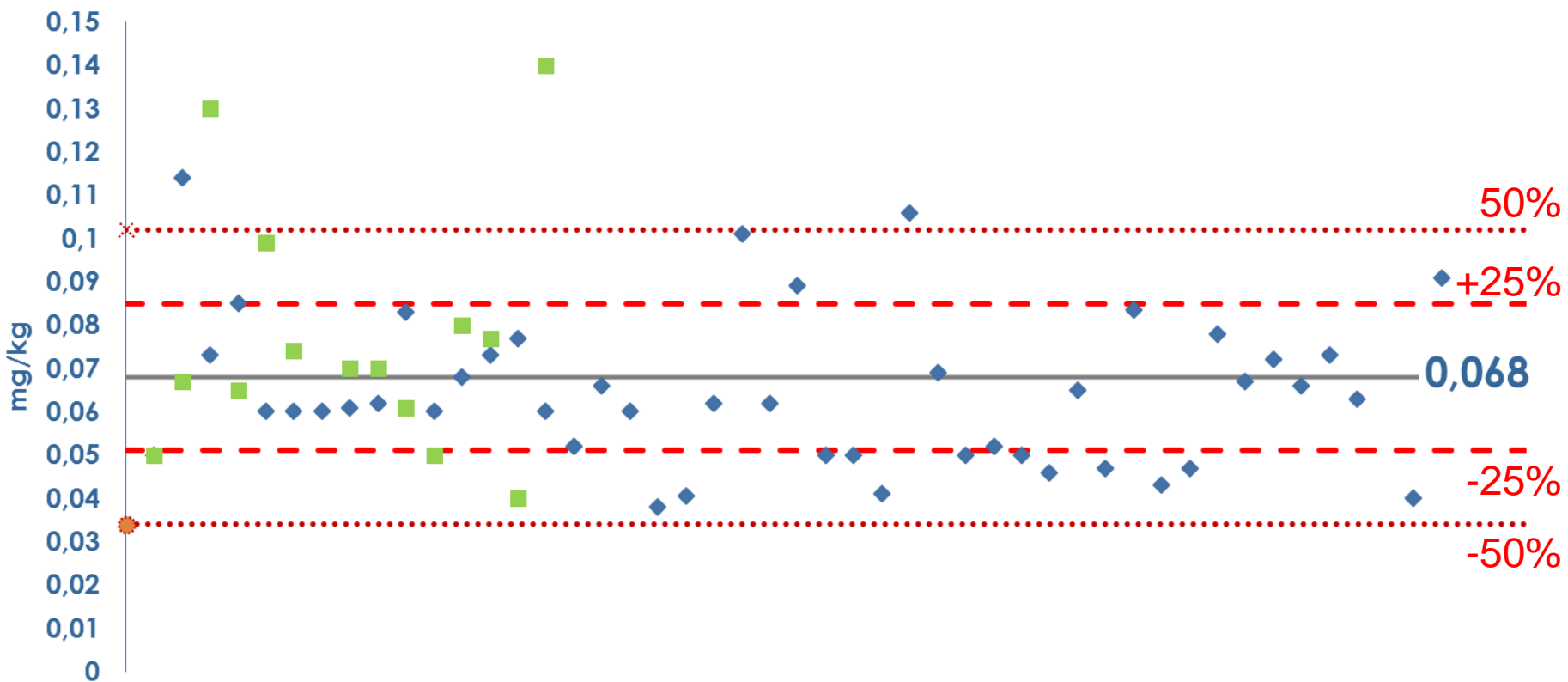
Rotenone



Homogeneity: 0,085 mg/kg

- HRMs
- No HRMs

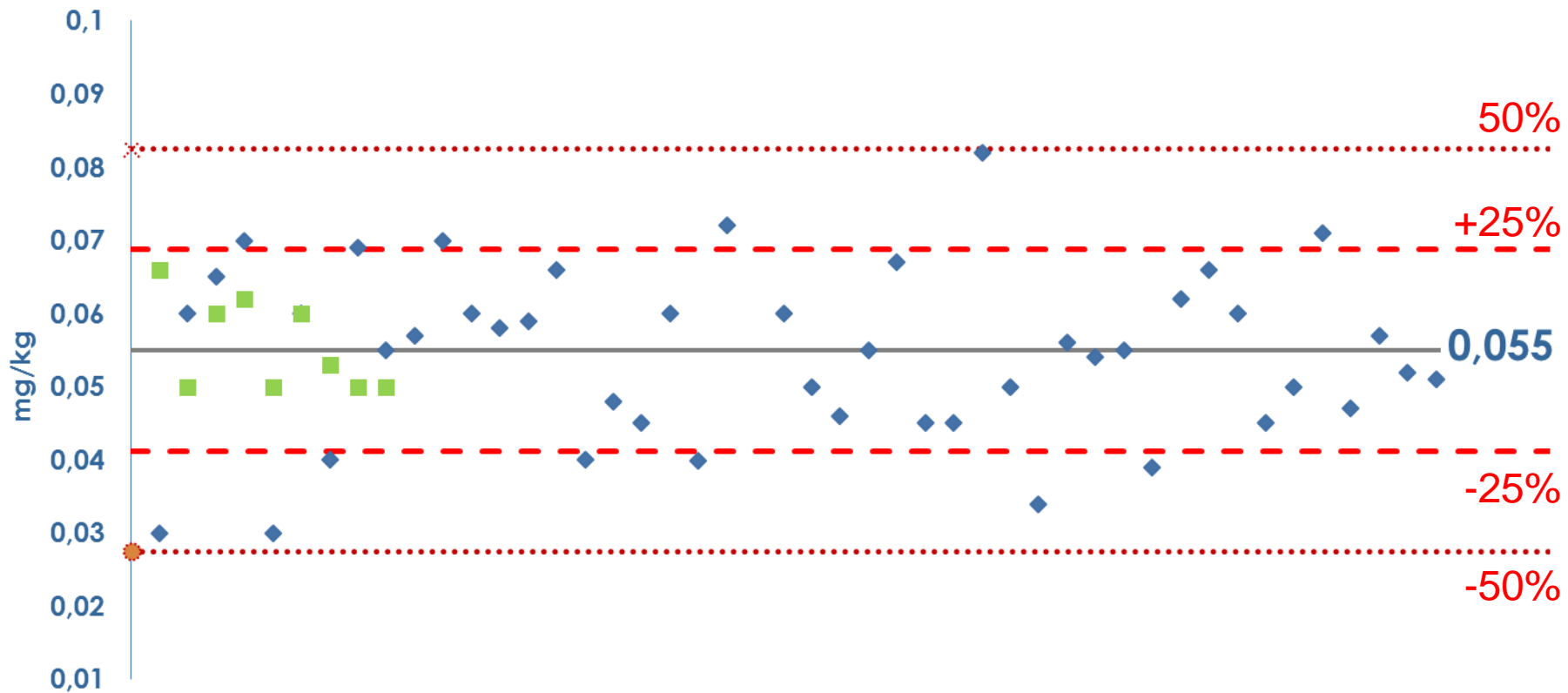
Tetramethrin



Homogeneity: 0,071 mg/kg

- HRMs
- No HRMs

Triticonazole



Homogeneity: 0,065 mg/kg

- HRMs
- No HRMs



Results

Pesticides reported by 3 or more laboratories:

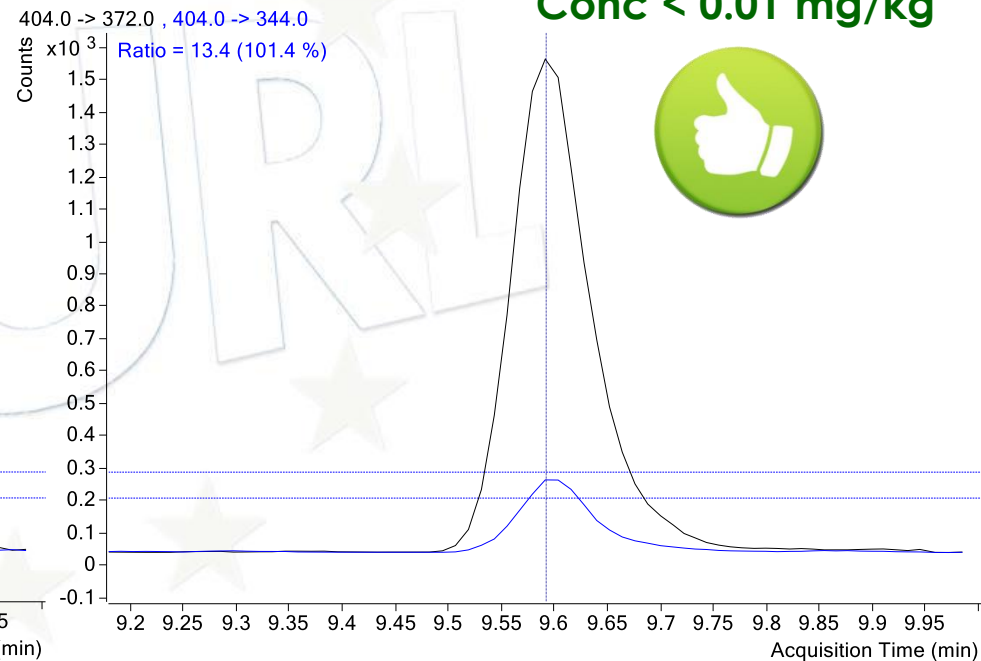
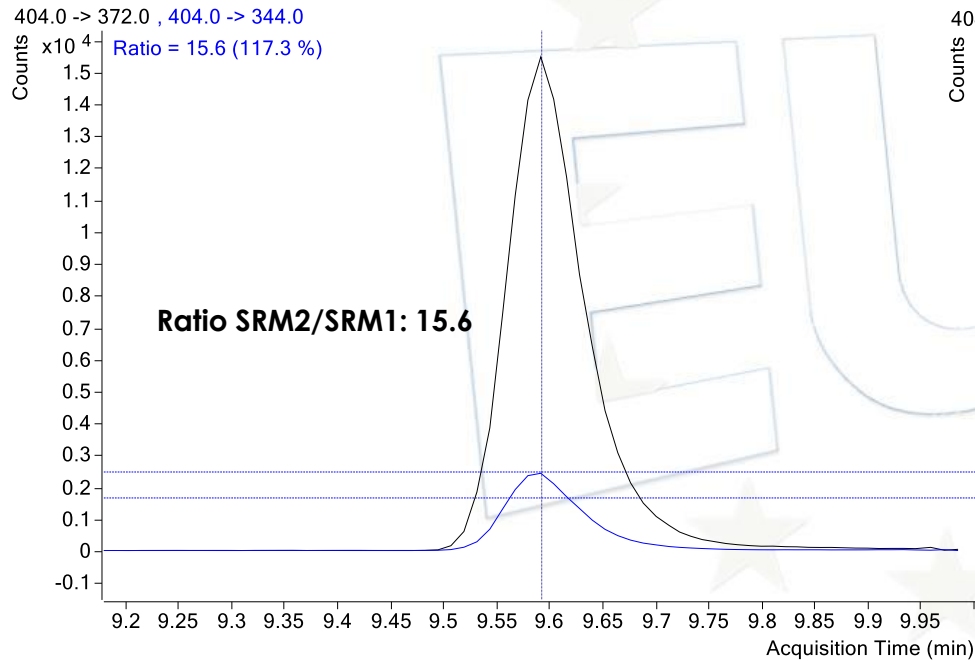
- Azoxystrobin
- Difenoconazole
- Endosulfan sulfate
- Fenamiphos sulfone
- Fenamiphos sulfoxide
- Hexachlorobenzene
- Indoxacarb
- Metconazole
- Tecnazene
- Tetraconazole
- Thiabendazole

Azoxystrobin (LC-MS/MS)

Standard in spinach
at 0.01 mg/kg

EUPT-SM Sample

Ratio SRM2/SRM1: 13.4
Conc < 0.01 mg/kg

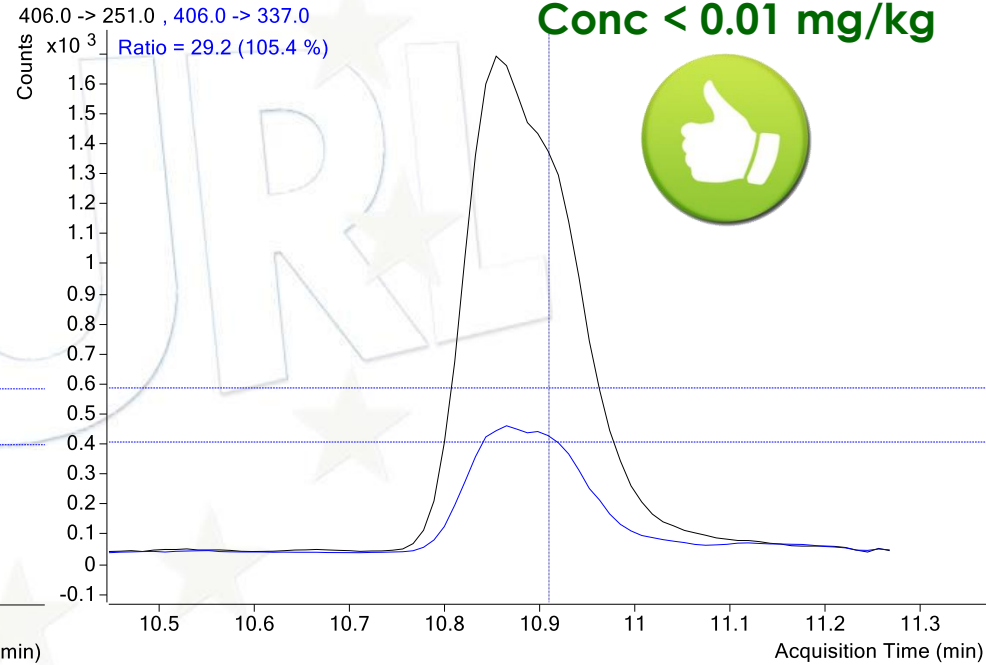
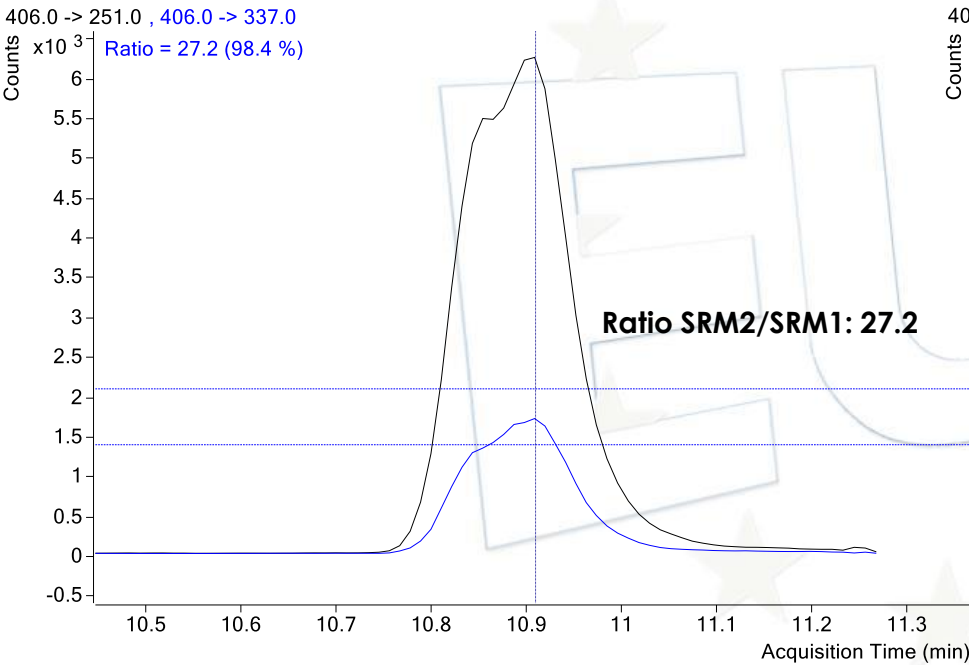


Difenoconazole (LC-MS/MS)

Standard in spinach
at 0.01 mg/kg

EUPT-SM Sample

Ratio SRM2/SRM1: 29.2
Conc < 0.01 mg/kg

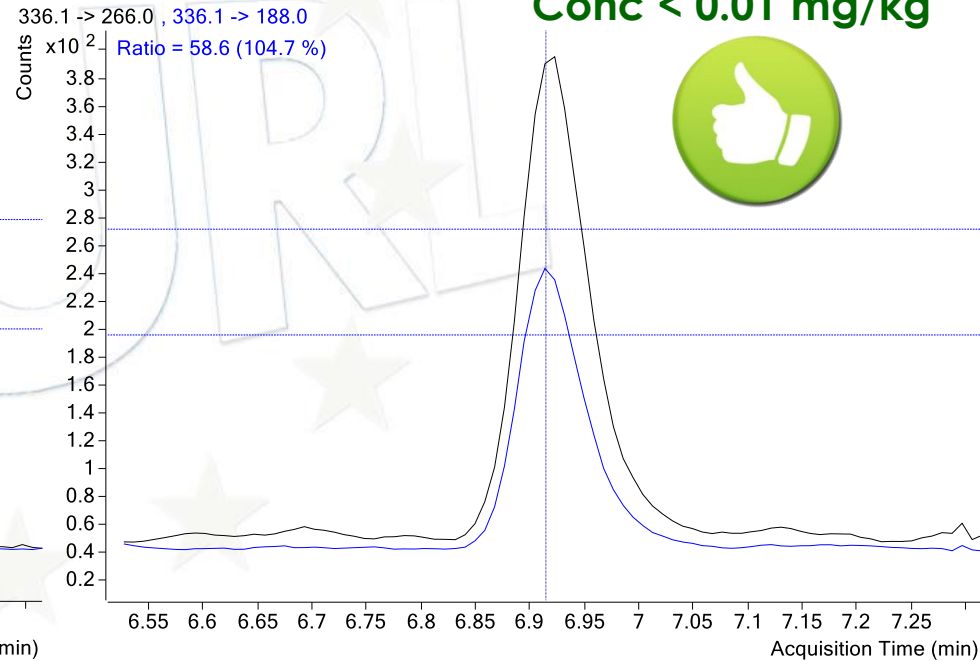
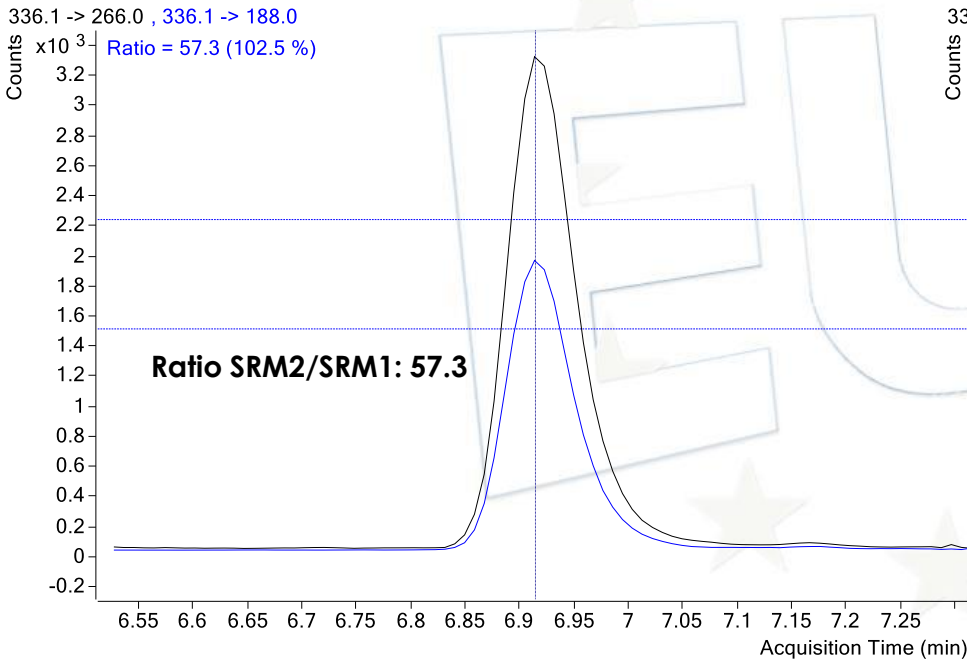


Fenamiphos sulfone (LC-MS/MS)

**Standard in spinach
 at 0.01 mg/kg**

EUPT-SM Sample

**Ratio SRM2/SRM1: 58.6
 Conc < 0.01 mg/kg**

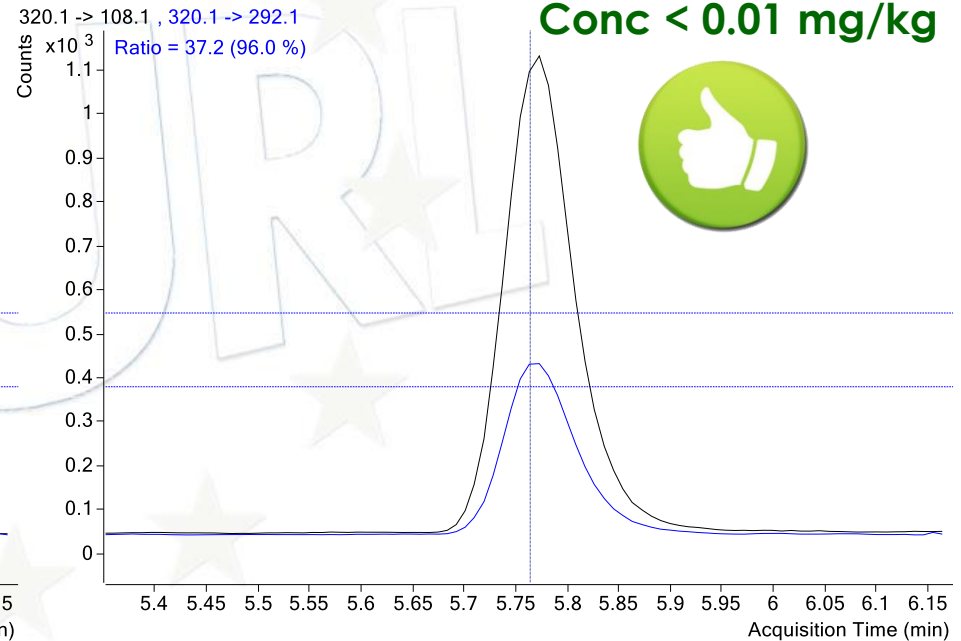
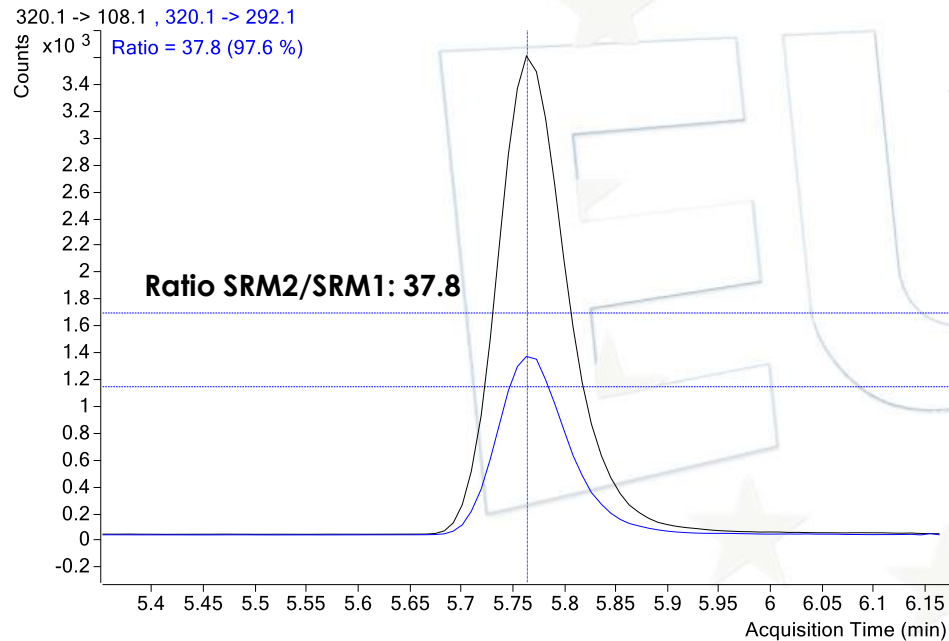


Fenamiphos sulfoxide (LC-MS/MS)

**Standard in spinach
 at 0.01 mg/kg**

EUPT-SM Sample

**Ratio SRM2/SRM1: 37.2
 Conc < 0.01 mg/kg**

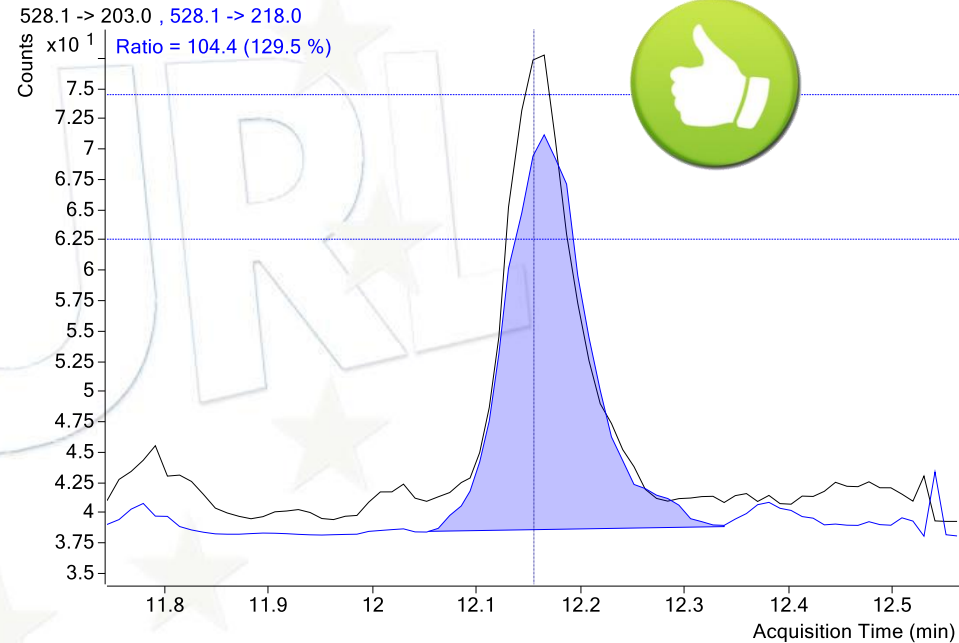
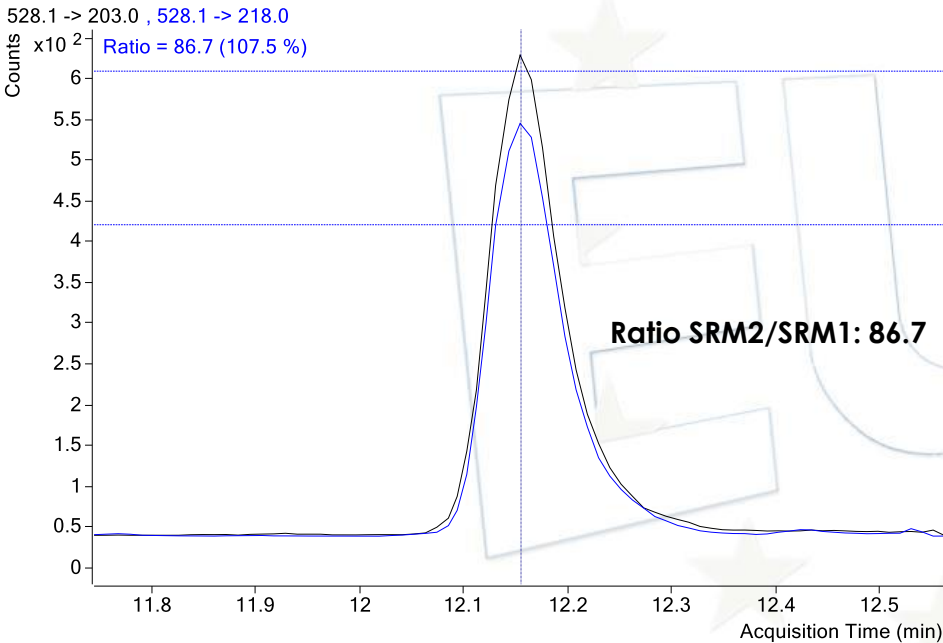


Indoxacarb (LC-MS/MS)

Standard in spinach
at 0.01 mg/kg

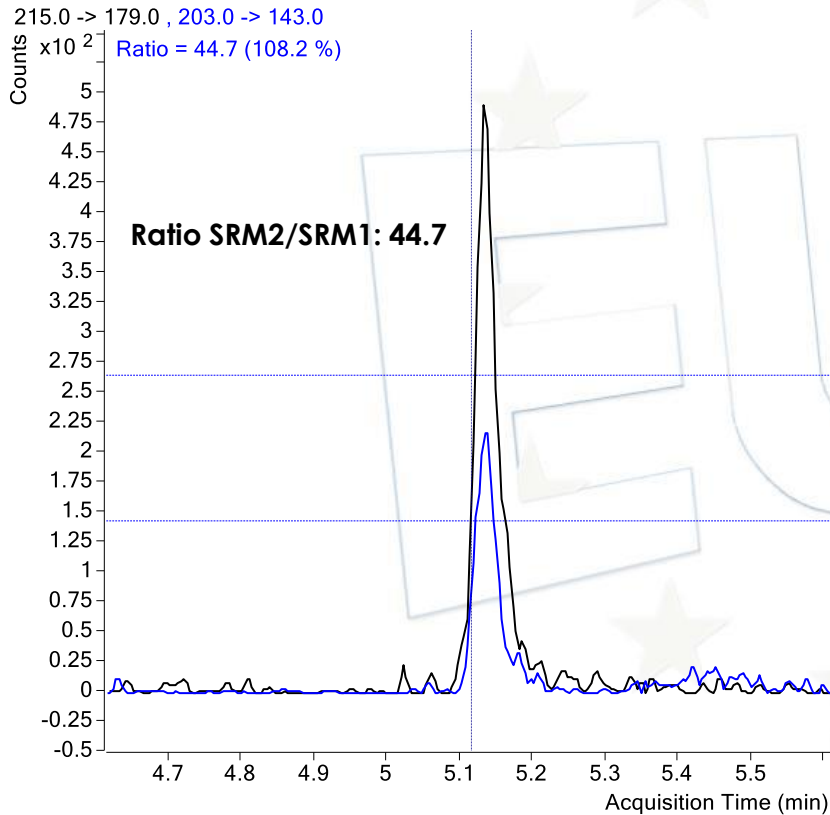
EUPT-SM Sample

Ratio SRM2/SRM1: 104.4
Conc < 0.01 mg/kg

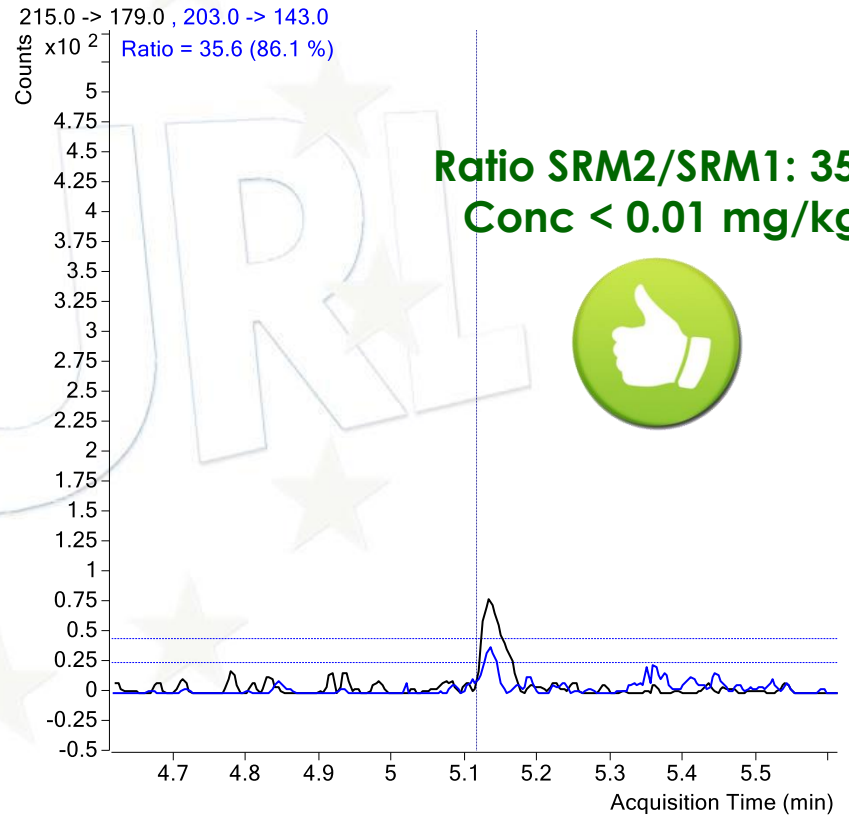


Tecnazene (GC-MS/MS)

Standard in spinach
at 0.01 mg/kg



EUPT-SM Sample

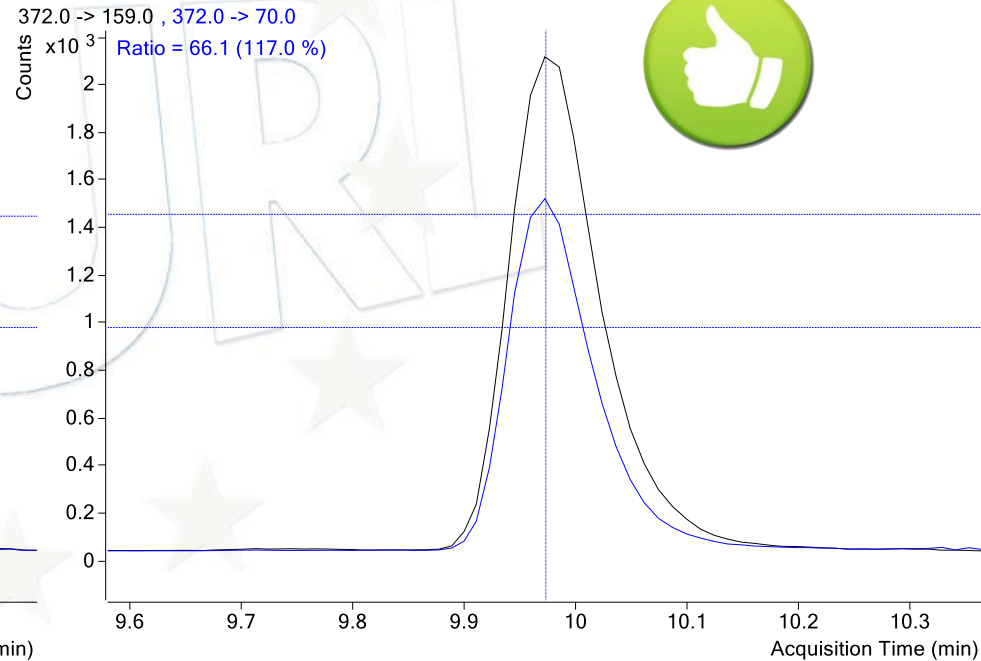
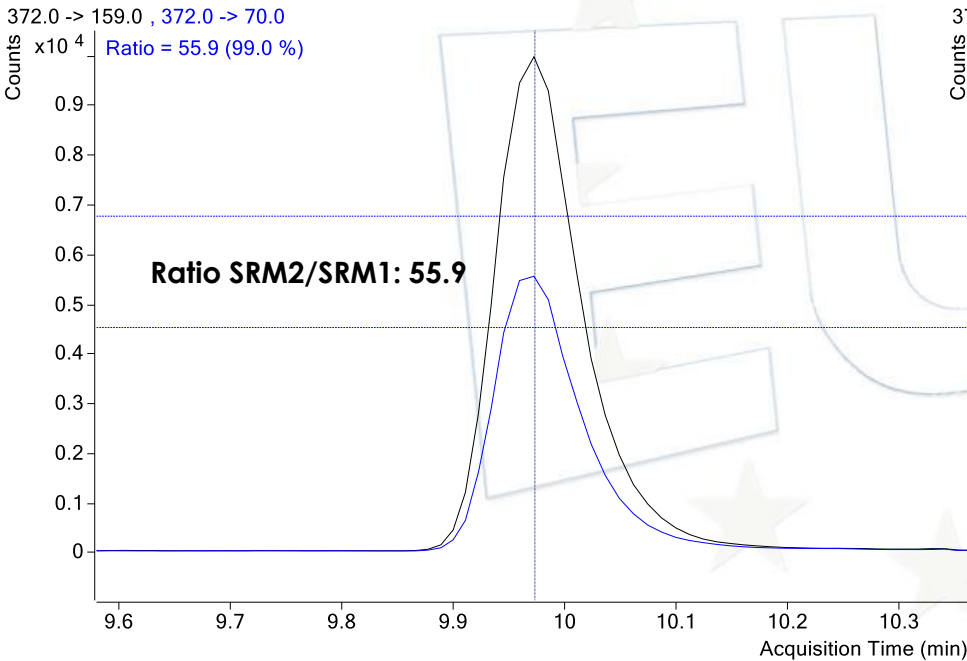


Tetraconazole (LC-MS/MS)

Standard in spinach
at 0.01 mg/kg

EUPT-SM Sample

Ratio SRM2/SRM1: 66.1
Conc < 0.01 mg/kg

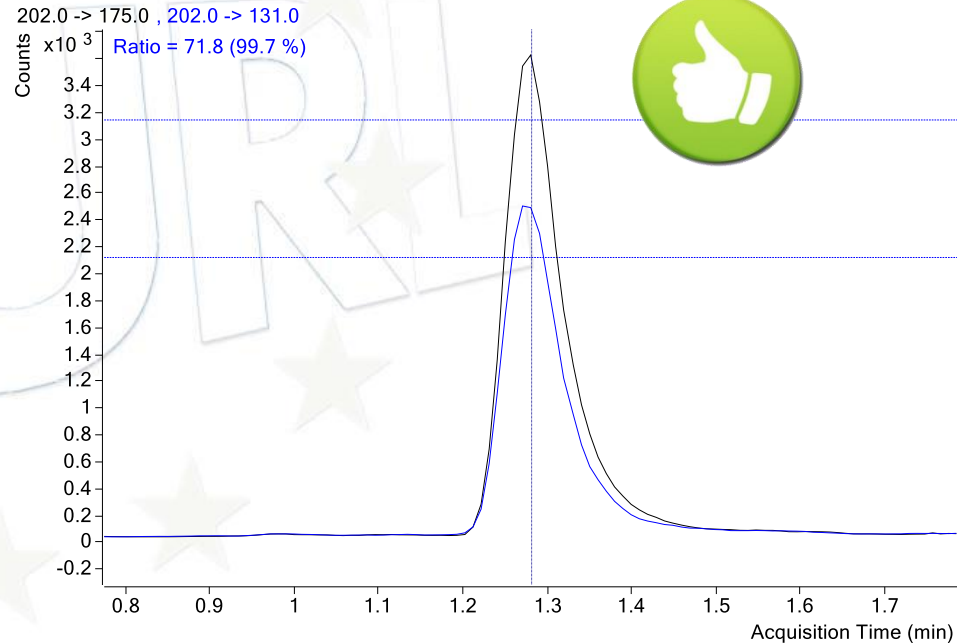
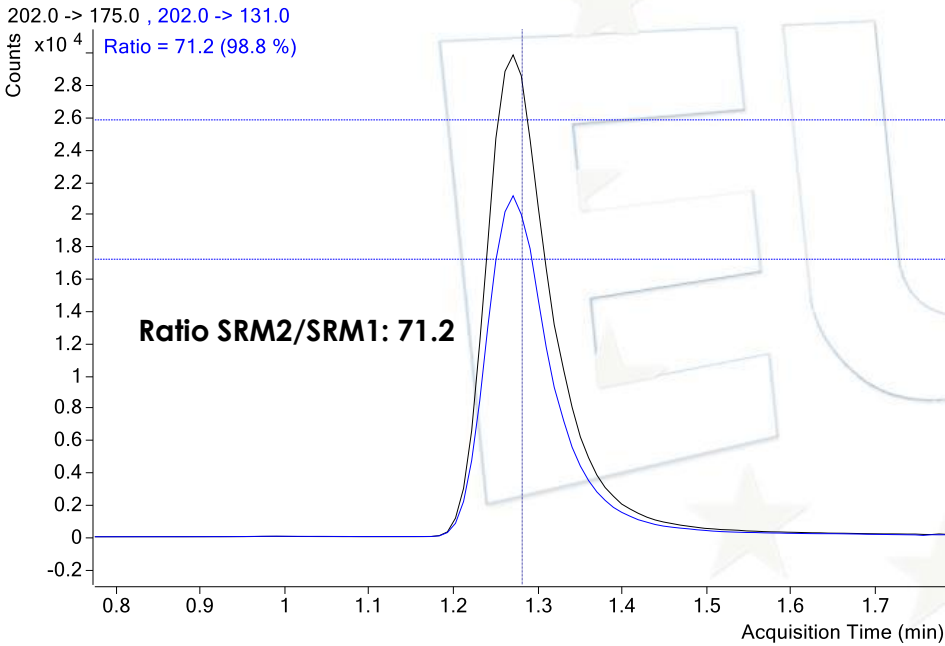


Thiabendazole (LC-MS/MS)

**Standard in spinach
at 0.01 mg/kg**

EUPT-SM Sample

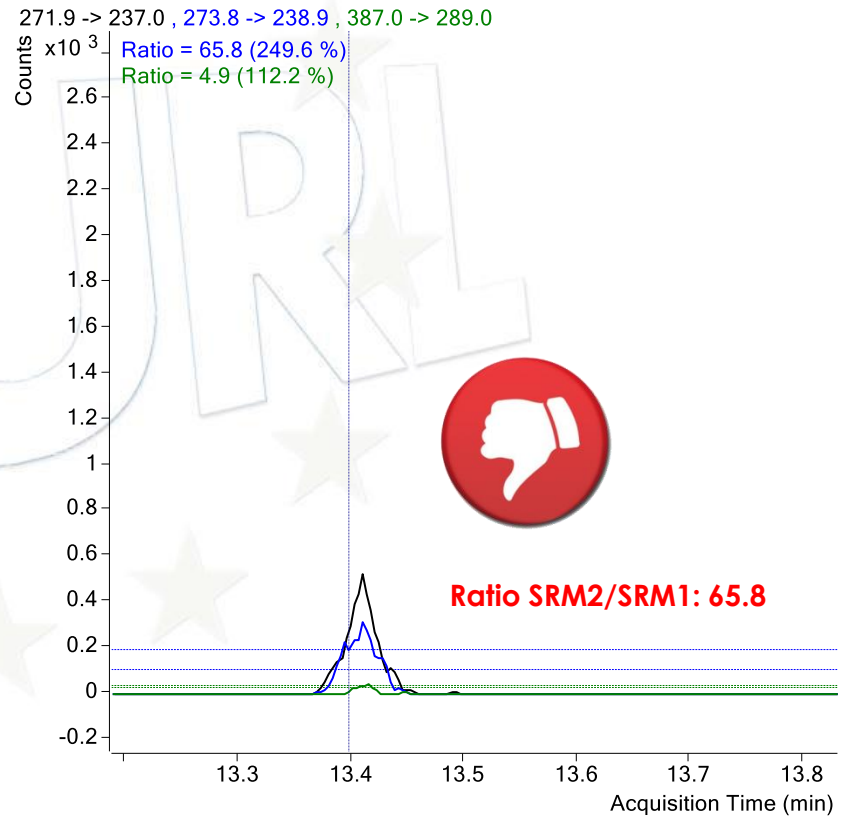
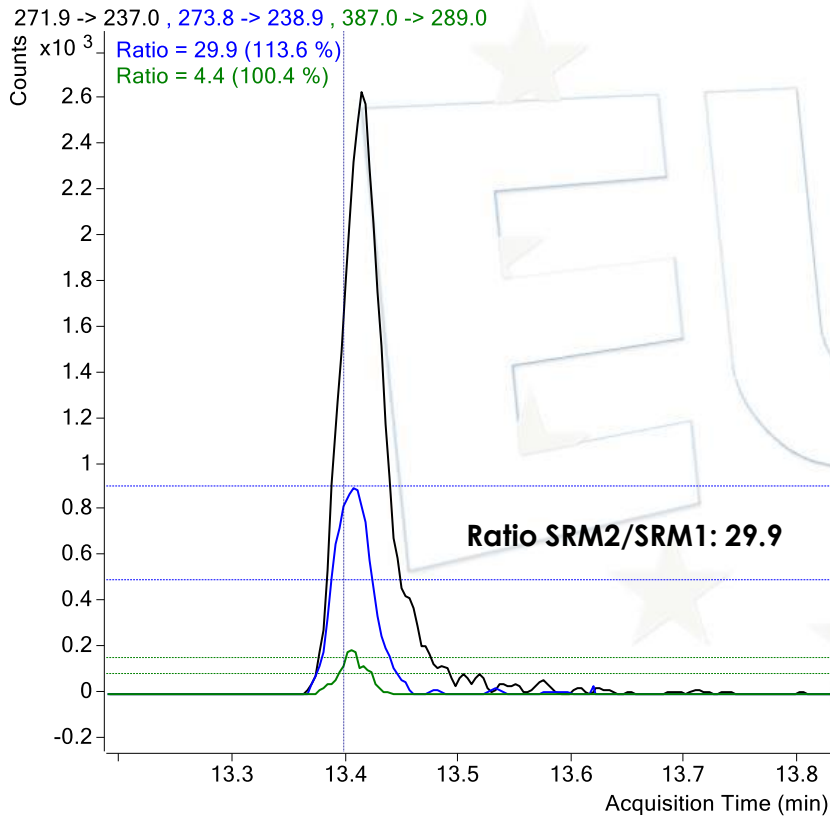
Ratio SRM2/SRM1: 71.8
Conc < 0.01 mg/kg



Endosulfan Sulfate (GC-MS/MS)

Standard in spinach
at 0.01 mg/kg

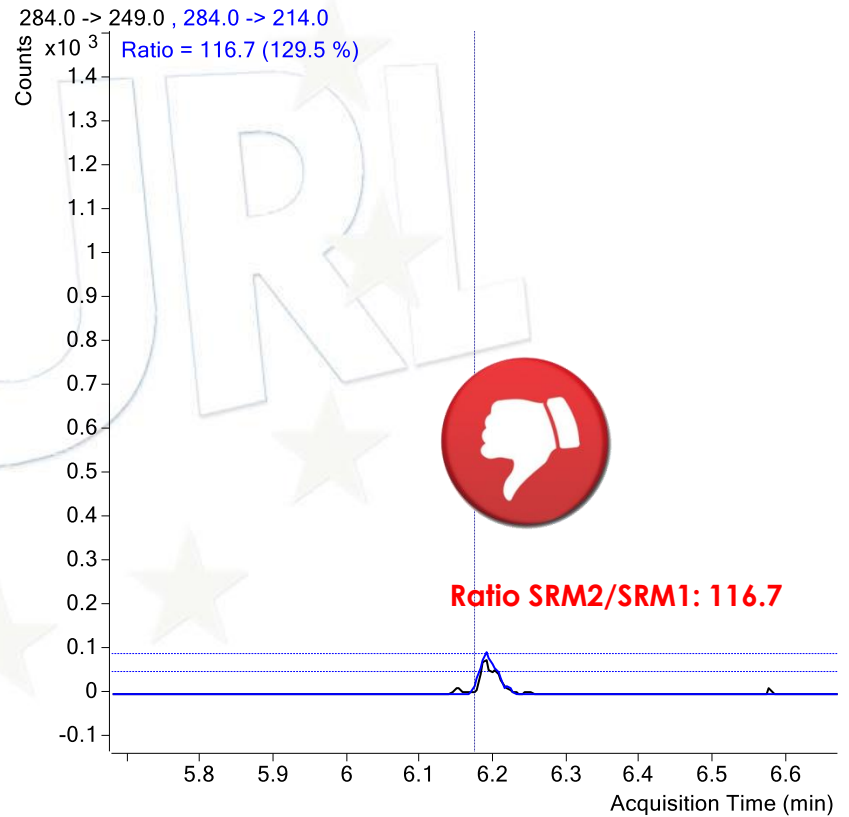
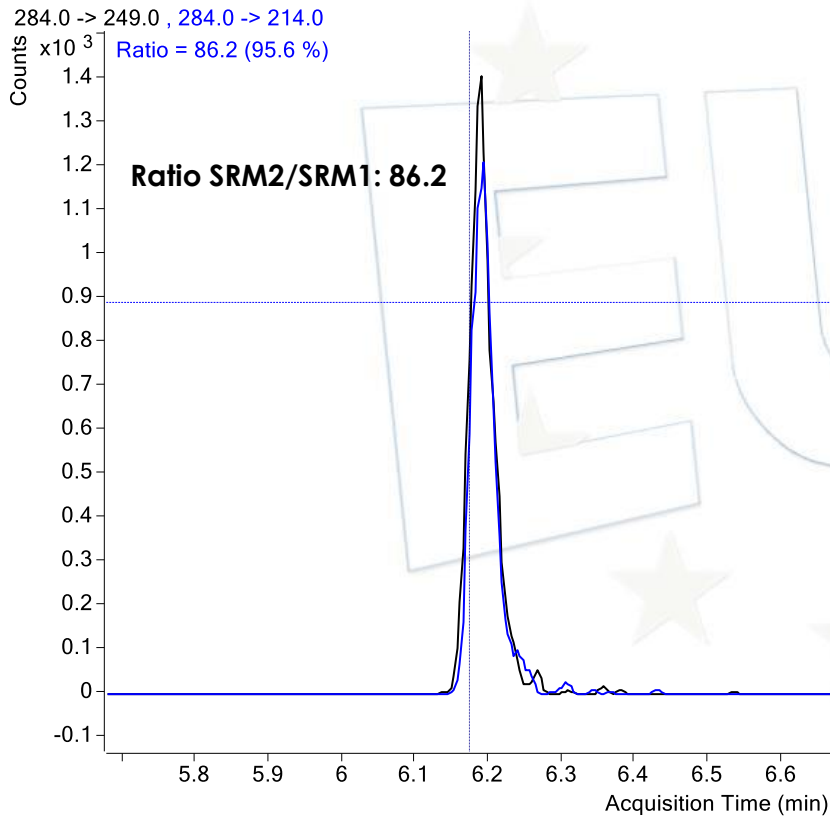
EUPT-SM Sample



Hexachlorobenzene (GC-MS/MS)

Standard in spinach at 0.01 mg/kg

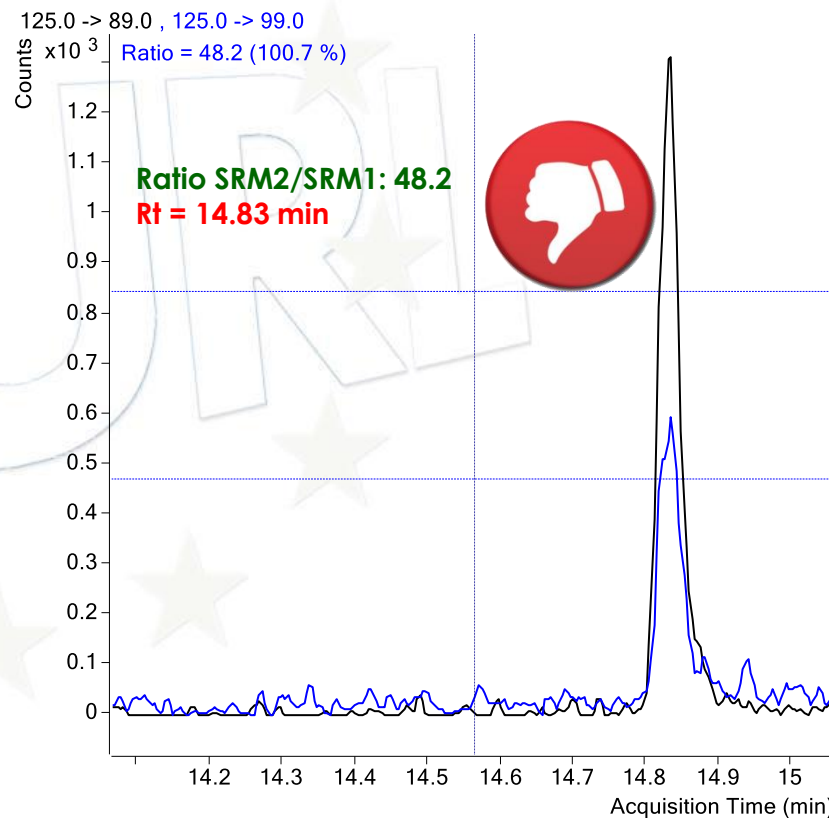
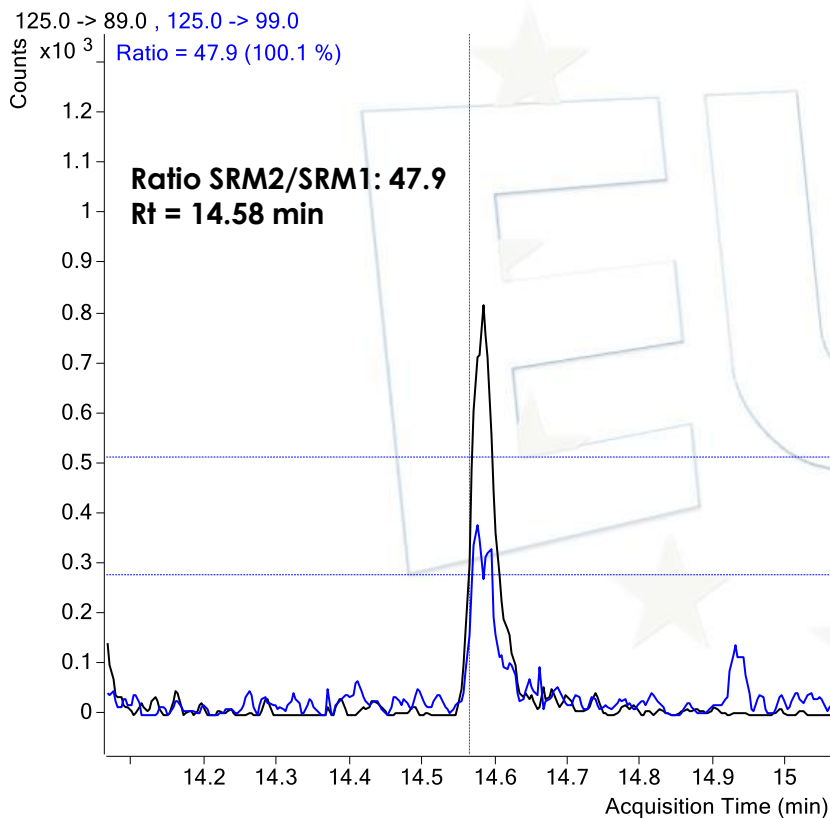
EUPT-SM Sample



Metconazole (GC-MS/MS)

Standard in spinach
at 0.01 mg/kg

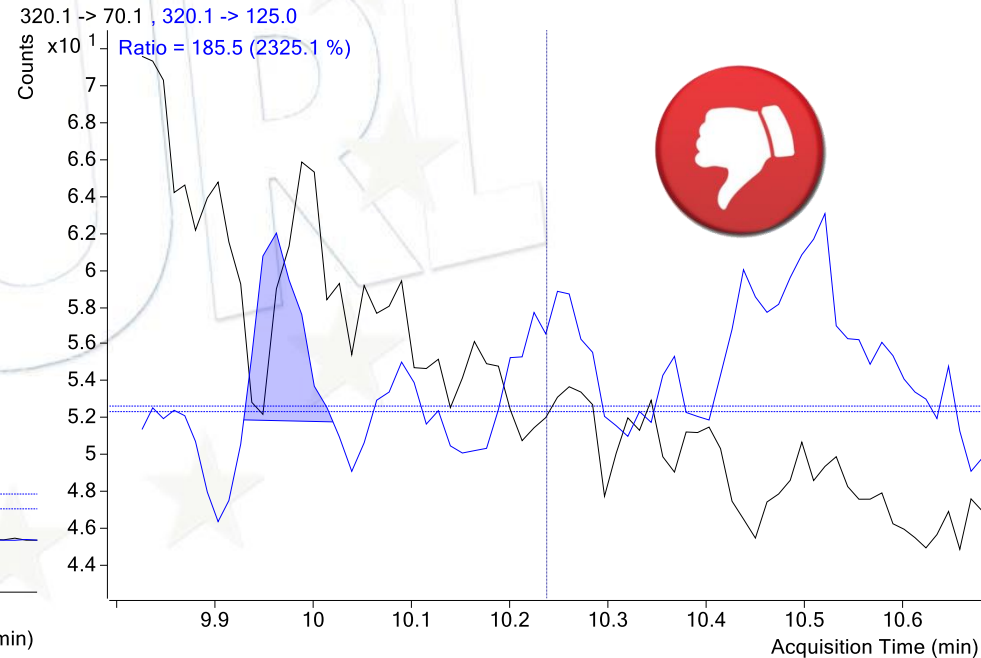
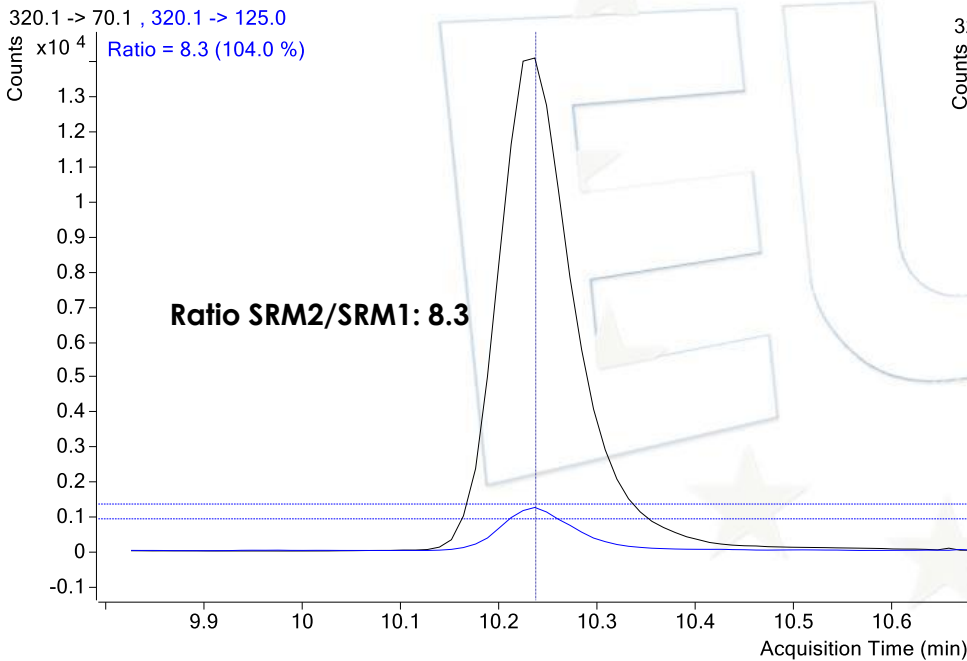
EUPT-SM Sample



Metconazole (LC-MS/MS)

Standard in spinach
at 0.01 mg/kg

EUPT-SM Sample





Results

Pesticides reported by 3 or more laboratories:

• Azoxystrobin 10

• Difenoconazole 17

• Endosulfan sulfate 10

• Fenamiphos sulfone 7

• Fenamiphos sulfoxide 9

• Hexachlorobenzene 5

• Indoxacarb 3

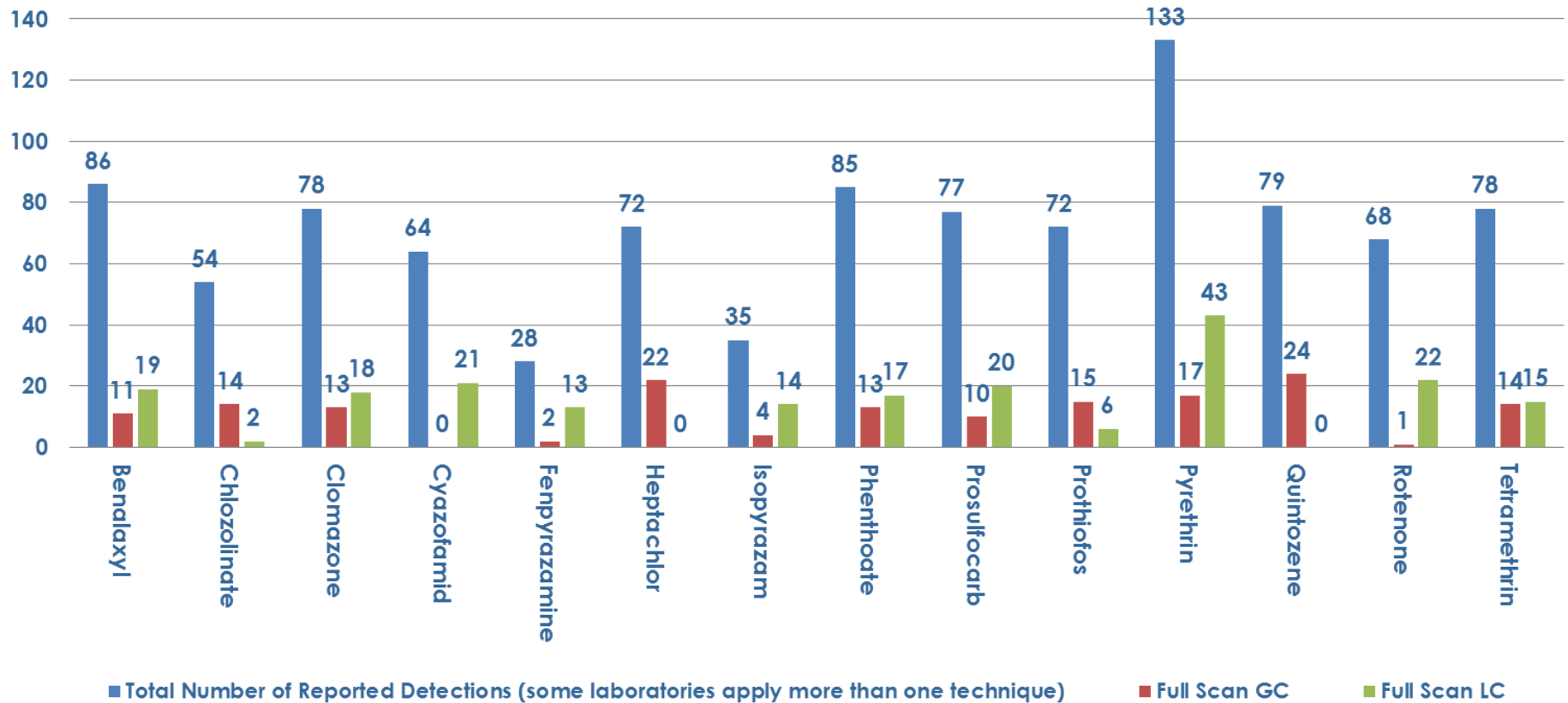
• Metconazole 3

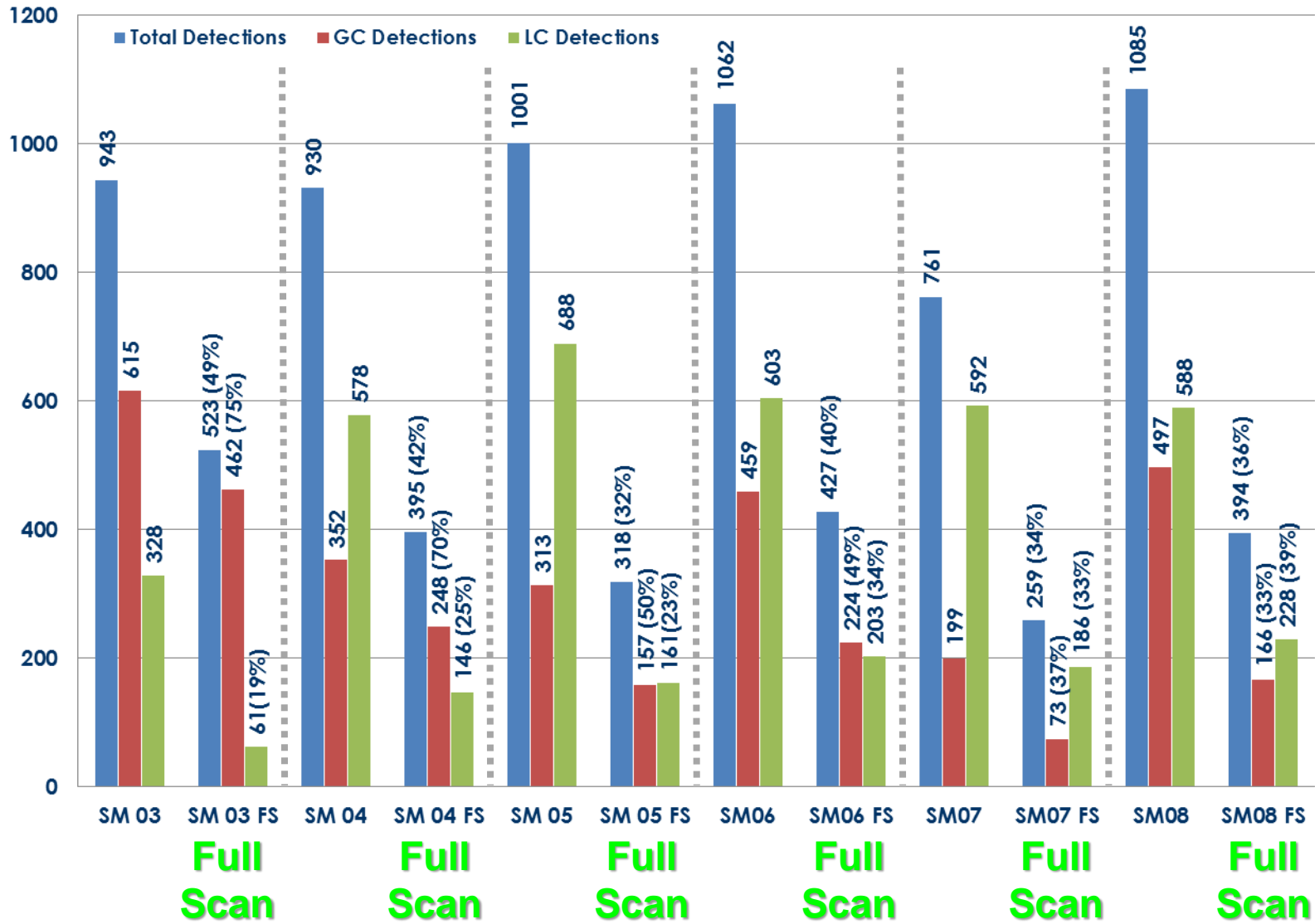
• Tecnazene 8

• Tetraconazole 18

• Thiabendazole 4

SM-08 Techniques (Full Scan)





LAB. CODE	Total Detections (all of them)	GC Detections	LC Detections	Total Full Scan	GC Full Scan	LC Full Scan
Lab001	22	10	12	22	10	12
Lab002	11	7	4	7	7	7
Lab003	15	8	7	15	8	7
Lab004	16	11	5	0	0	0
Lab005	17	6	0	0	0	0
Lab006	6	3	0	0	0	0
Lab007	14	8	0	8	8	0
Lab008	8	0	0	0	0	0
Lab009	3	0	0	0	0	0
Lab010	16	9	0	0	0	0
Lab011	19	8	0	0	0	0
Lab012	25	0	0	0	0	0
Lab013	14	1	0	14	14	10
Lab014	11	8	0	0	0	0
Lab015	14	8	0	0	0	0
Lab016	14	8	0	0	0	0
Lab017	14	3	0	21	3	18
Lab018	21	5	0	0	0	0
Lab019	10	9	0	13	9	4
Lab020	16	6	0	16	6	12
Lab021	33	14	0	0	0	0
Lab022	24	7	0	9	0	9
Lab023	14	8	0	0	0	0
Lab024	13	7	0	0	0	0
Lab025	23	8	0	0	0	0
Lab026	14	6	0	0	0	0
Lab027	13	9	0	0	0	0
Lab028	23	2	0	0	0	0
Lab029	12	6	0	0	0	0
Lab030	16	5	0	0	0	0
Lab031	22	9	0	22	9	13
Lab032	15	8	0	0	0	0
Lab033	14	3	0	14	3	11
Lab034	13	9	0	0	0	0
Lab035	0	9	0	0	0	0
Lab036	9	2	0	0	0	0
Lab037	13	4	0	11	4	7
Lab038	13	8	0	13	8	5
Lab039	21	15	0	0	0	0
Lab040	12	3	0	12	3	9
Lab041	5	2	0	0	0	0
Lab042	9	6	0	0	0	0
Lab043	7	7	0	0	0	0
Lab044	12	1	0	0	0	0
Lab045	7	5	0	0	0	0
Lab046	7	1	0	0	0	0
Lab047	1	5	0	0	0	0
Lab048	10	3	0	0	0	0
Lab049	8	0	0	0	0	0
Lab050	8	8	0	0	0	0
Lab051	3	0	0	0	0	0
Lab052	13	1	0	0	0	0
Lab053	14	7	0	0	0	0
Lab054	14	6	0	9	1	8
Lab055	15	6	0	4	0	0
Lab056	15	7	0	0	0	0
Lab057	8	7	0	0	0	0
Lab058	14	4	0	0	0	0
Lab059	15	9	0	0	0	0
Lab060	14	9	0	0	0	0
Lab061	14	4	0	0	0	0
Lab062	14	9	0	0	0	0
Lab063	11	4	0	0	0	0
Lab064	15	13	0	13	8	15
Lab065	8	0	0	0	0	0
Lab066	20	6	0	0	0	0
Lab067	14	5	0	12	0	0
Lab068	26	9	0	0	0	0
Lab069	15	7	0	0	0	0
Lab070	23	5	0	0	0	0
Lab071	16	9	0	9	25	0
Lab072	10	5	0	35	0	0
Lab073	35	11	0	0	0	0
Lab074	15	6	0	0	0	0
Lab075	11	3	0	0	0	0
Lab076	8	11	0	5	1	0
Lab077	16	5	0	0	0	0
Lab078	15	5	0	0	0	0
Lab079	15	8	0	0	0	0
Lab080	9	5	0	0	0	0
Lab081	13	8	0	0	0	0
Lab082	14	12	0	14	0	0
Lab083	2	2	0	0	0	0
Lab084	19	0	0	16	0	0
Lab085	6	4	0	0	0	0
Lab086	4	7	0	0	0	0
Lab087	14	0	0	11	0	0
Lab089	12	0	5	13	0	0

Total Detections: 1085 **GC Detections: 497** **LC Detections: 588**
Total Full Scan: 394 **GC Full Scan: 166** **LC Full Scan: 228**
(36% of the Total) **(42% of the Full Scan)** **(58% of the Full Scan)**

**Thank You
for Your Attention**



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