



EURL

European Union Reference Laboratory for Pesticide Residues in Fruits & Vegetables

EUPT-FV-SM12

European Proficiency Test FV-SM12

*EUROPEAN COMMISSION PROFICIENCY TEST
FOR PESTICIDE RESIDUES IN FRUITS AND
VEGETABLES*

**SCREENING METHODS 12
ONION**



RESULTS

ACTIVITY	DATE
Publishing the Calendar and Matrix on the Web page.	January 2020
Receiving Application Form from invited laboratories.	8 th January – 24 th January 2019
Specific Protocol published on the Web site.	10 th Feb 2020 at the latest
Sample distribution.	2 nd March 2020
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 2020
Final Report distributed to the Laboratories.	December 2020



Pesticides in this EUPT

Alachlor

Metamitron

Cyanofenphos

Metazachlor

Diuron

Metobromuron

Dodemorph

Monolinuron

Endrin

Prometryne

Fluacrypyrim

Propazine

Fonofos

Propoxur

Isoprocarb

Simazine

Tetrachlorvinphos

EUPT-FV-SM012- Participants

62 Participants

COUNTRY	No.	COUNTRY	No.
Austria	1	Italy	6
Belgium	5	Kenia	1
China	3	Latvia	1
Croatia	1	Lithuania	2
Czech Republic	2	Norway	1
Denmark	1	Spain	12
Finland	1	Sweden	2
France	4	Switzerland	2
Germany	10	The Netherlands	1
Hungary	3	Turkey	1
Ireland	1	UK	1

64 Registered – 62 Sent Results

**Austria
Belgium
Croatia
Czech Republic
Denmark
Finland
France
Germany
Hungary
Ireland
Italy
Latvia
Lithuania
Norway
Spain
Sweden
Switzerland
The Netherlands
United Kingdom**

**19 EU/EFTA
Countries**

**China
Kenya
Turkey**

**3 Non EU/EFTA
Countries**

RESULTS



Pesticides	Conc. Homogeneity test (mg/kg)	Robust mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Alachlor	0.039	0.041	20.5	48	44	71	37
Cyanofenphos	0.060	0.057	25.2	41	37	60	29
Diuron	0.079	0.078	35.3	55	53	85	43
Dodemorph	0.037	0.037	16.0	45	39	63	28
Endrin	0.052	0.054	22.1	66	53	85	51
Fluacrypyrim	0.032	0.030	22.6	22	20	32	12
Fonofos	0.059	0.062	23.2	62	57	92	53
Isoproc carb	0.031	0.033	35.9	55	50	81	47
Metamitron	0.042	0.038	32.0	57	47	76	40
Metazachlor	0.044	0.042	27.5	61	56	90	50
Metobromuron	0.057	0.057	34.5	60	55	89	49
Monolinuron	0.059	0.054	36.1	51	47	76	39
Prometryne	0.038	0.038	19.5	62	55	89	52
Propazine	0.044	0.043	25.0	55	50	81	41
Propoxur	0.065	0.059	37.2	66	60	97	57
Simazine	0.037	0.033	40.2	58	53	85	49
Tetrachlorvinphos	0.054	0.051	36.3	63	58	94	46

Pesticides	Conc. Homogeneity test (mg/kg)	Robust mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Alachlor	0.039	0.041	20.5	48	44	71	37
Cyanofenphos	0.060	0.057	25.2	41	37	60	29
Diuron	0.079	0.078	35.3	55	53	85	43
Dodemorph	0.037	0.037	16.0	45	39	63	28
Endrin	0.052	0.054	22.1	66	53	85	51
Fluacrypyrim	0.032	0.030	22.6	22	20	32	12
Fonofos	0.059	0.062	23.2	62	57	92	53
Isoproc carb	0.031	0.033	35.9	55	50	81	47
Metamitron	0.042	0.038	32.0	57	47	76	40
Metazachlor	0.044	0.042	27.5	61	56	90	50
Metobromuron	0.057	0.057	34.5	60	55	89	49
Monolinuron	0.059	0.054	36.1	51	47	76	39
Prometryne	0.038	0.038	19.5	62	55	89	52
Propazine	0.044	0.043	25.0	55	50	81	41
Propoxur	0.065	0.059	37.2	66	60	97	57
Simazine	0.037	0.033	40.2	58	53	85	49
Tetrachlorvinphos	0.054	0.051	36.3	63	58	94	46

Pesticides	Conc. Homogeneity test (mg/kg)	Robust mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Alachlor	0.039	0.041	20.5	48	44	71	37
Cyanofenphos	0.060	0.057	25.2	41	37	60	29
Diuron	0.079	0.078	35.3	55	53	85	43
Dodemorph	0.037	0.037	16.0	45	39	63	28
Endrin	0.052	0.054	22.1	66	53	85	51
Fluacrypyrim	0.032	0.030	22.6	22	20	32	12
Fonofos	0.059	0.062	23.2	62	57	92	53
Isoproc carb	0.031	0.033	35.9	55	50	81	47
Metamitron	0.042	0.038	32.0	57	47	76	40
Metazachlor	0.044	0.042	27.5	61	56	90	50
Metobromuron	0.057	0.057	34.5	60	55	89	49
Monolinuron	0.059	0.054	36.1	51	47	76	39
Prometryne	0.038	0.038	19.5	62	55	89	52
Propazine	0.044	0.043	25.0	55	50	81	41
Propoxur	0.065	0.059	37.2	66	60	97	57
Simazine	0.037	0.033	40.2	58	53	85	49
Tetrachlorvinphos	0.054	0.051	36.3	63	58	94	46

Pesticides	Conc. Homogeneity test (mg/kg)	Robust mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Alachlor	0.039	0.041	20.5	48	44	71	37
Cyanofenphos	0.060	0.057	25.2	41	37	60	29
Diuron	0.079	0.078	35.3	55	53	85	43
Dodemorph	0.037	0.037	16.0	45	39	63	28
Endrin	0.052	0.054	22.1	66	53	85	51
Fluacrypyrim	0.032	0.030	22.6	22	20	32	12
Fonofos	0.059	0.062	23.2	62	57	92	53
Isoproc carb	0.031	0.033	35.9	55	50	81	47
Metamitron	0.042	0.038	32.0	57	47	76	40
Metazachlor	0.044	0.042	27.5	61	56	90	50
Metobromuron	0.057	0.057	34.5	60	55	89	49
Monolinuron	0.059	0.054	36.1	51	47	76	39
Prometryne	0.038	0.038	19.5	62	55	89	52
Propazine	0.044	0.043	25.0	55	50	81	41
Propoxur	0.065	0.059	37.2	66	60	97	57
Simazine	0.037	0.033	40.2	58	53	85	49
Tetrachlorvinphos	0.054	0.051	36.3	63	58	94	46

Pesticides	Conc. Homogeneity test (mg/kg)	Robust mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Alachlor	0.039	0.041	20.5	48	44	71	37
Cyanofenphos	0.060	0.057	25.2	41	37	60	29
Diuron	0.079	0.078	35.3	55	53	85	43
Dodemorph	0.037	0.037	16.0	45	39	63	28
Endrin	0.052	0.054	22.1	66	53	85	51
Fluacrypyrim	0.032	0.030	22.6	22	20	32	12
Fonofos	0.059	0.062	23.2	62	57	92	53
Isoproc carb	0.031	0.033	35.9	55	50	81	47
Metamitron	0.042	0.038	32.0	57	47	76	40
Metazachlor	0.044	0.042	27.5	61	56	90	50
Metobromuron	0.057	0.057	34.5	60	55	89	49
Monolinuron	0.059	0.054	36.1	51	47	76	39
Prometryne	0.038	0.038	19.5	62	55	89	52
Propazine	0.044	0.043	25.0	55	50	81	41
Propoxur	0.065	0.059	37.2	66	60	97	57
Simazine	0.037	0.033	40.2	58	53	85	49
Tetrachlorvinphos	0.054	0.051	36.3	63	58	94	46

Pesticides	Conc. Homogeneity test (mg/kg)	Robust mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Alachlor	0.039	0.041	20.5	48	44	71	37
Cyanofenphos	0.060	0.057	25.2	41	37	60	29
Diuron	0.079	0.078	35.3	55	53	85	43
Dodemorph	0.037	0.037	16.0	45	39	63	28
Endrin	0.052	0.054	22.1	66	53	85	51
Fluacrypyrim	0.032	0.030	22.6	22	20	32	12
Fonofos	0.059	0.062	23.2	62	57	92	53
Isoproc carb	0.031	0.033	35.9	55	50	81	47
Metamitron	0.042	0.038	32.0	57	47	76	40
Metazachlor	0.044	0.042	27.5	61	56	90	50
Metobromuron	0.057	0.057	34.5	60	55	89	49
Monolinuron	0.059	0.054	36.1	51	47	76	39
Prometryne	0.038	0.038	19.5	62	55	89	52
Propazine	0.044	0.043	25.0	55	50	81	41
Propoxur	0.065	0.059	37.2	66	60	97	57
Simazine	0.037	0.033	40.2	58	53	85	49
Tetrachlorvinphos	0.054	0.051	36.3	63	58	94	46

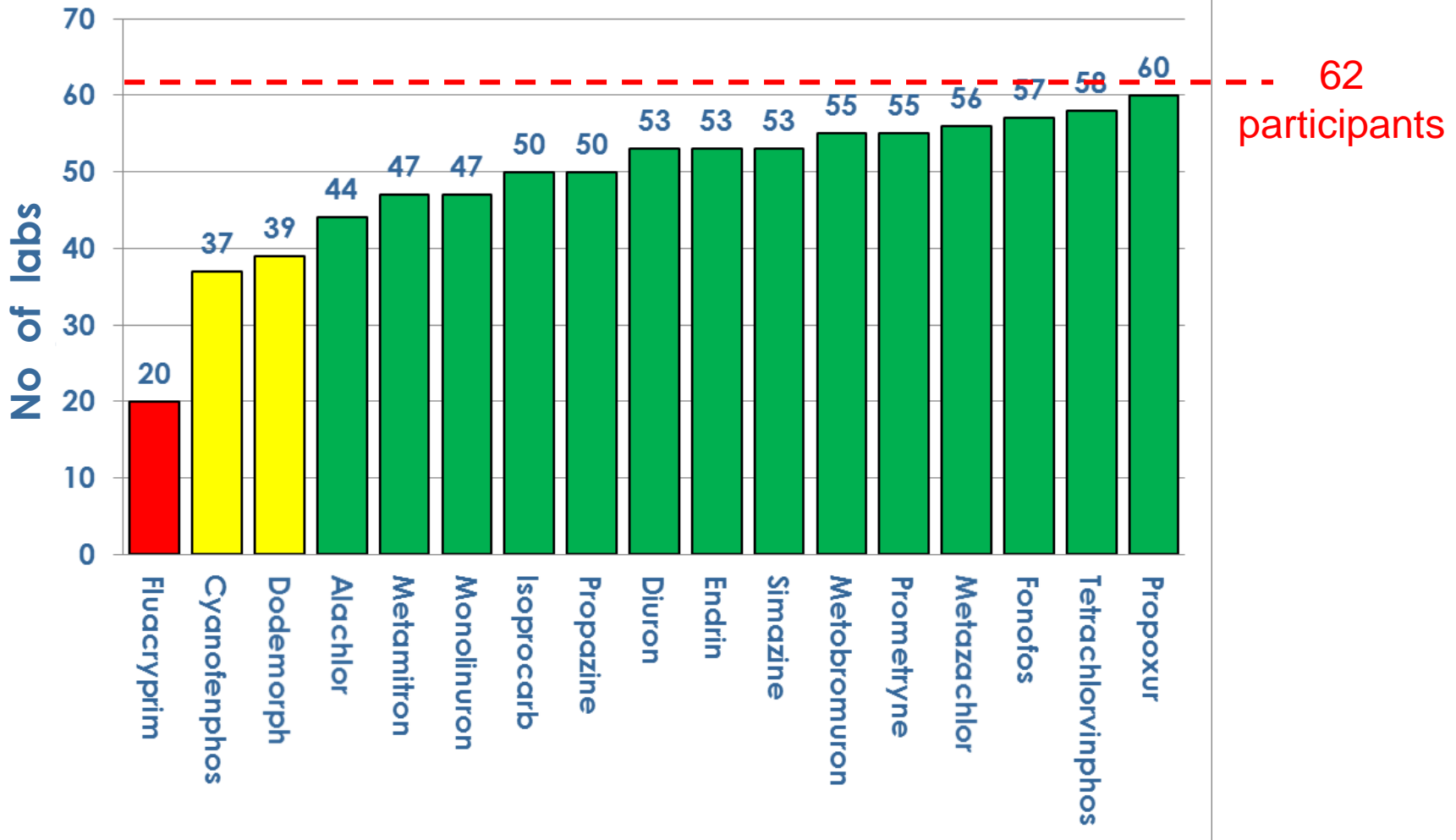
Results

17 Evaluated Pesticides
62 Laboratories

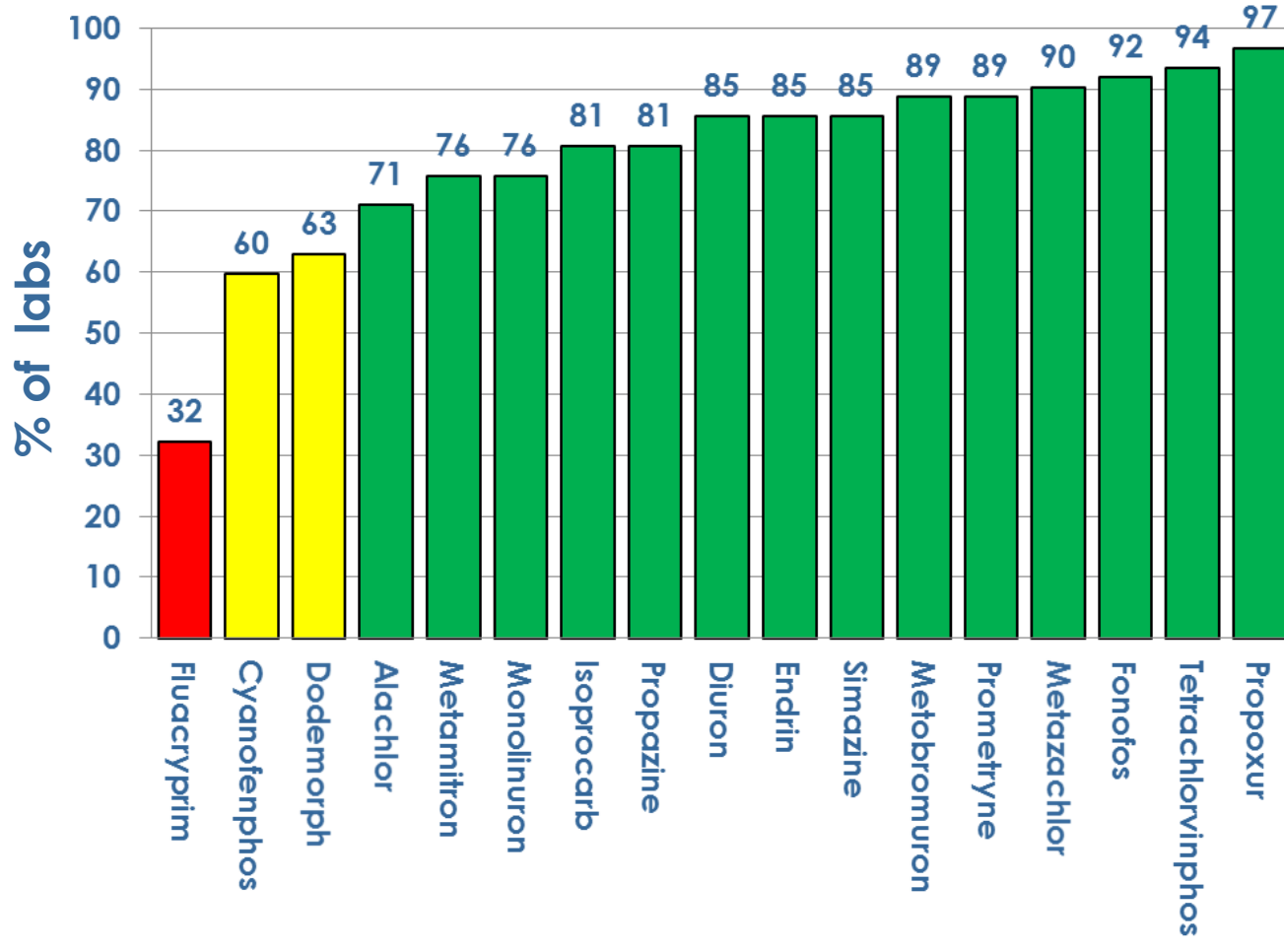
17 Pesticides = 1+2+14

	Alachlor	Cyanofenphos	Diuron	Dodemorph	Endrin	Fluacrypyrim	Fonofos	Isoprocarb	Metamitron	Metazachlor	Metobromuron	Monolinuron	Prometryne	Propazine	Propoxur	Simazine	Tetrachlorvinphos
Total Number of Labs reporting	44	37	53	39	53	20	57	50	47	56	55	47	55	50	60	53	58
% of labs reporting	71	60	85	63	85	32	92	81	76	90	89	76	89	81	97	85	94

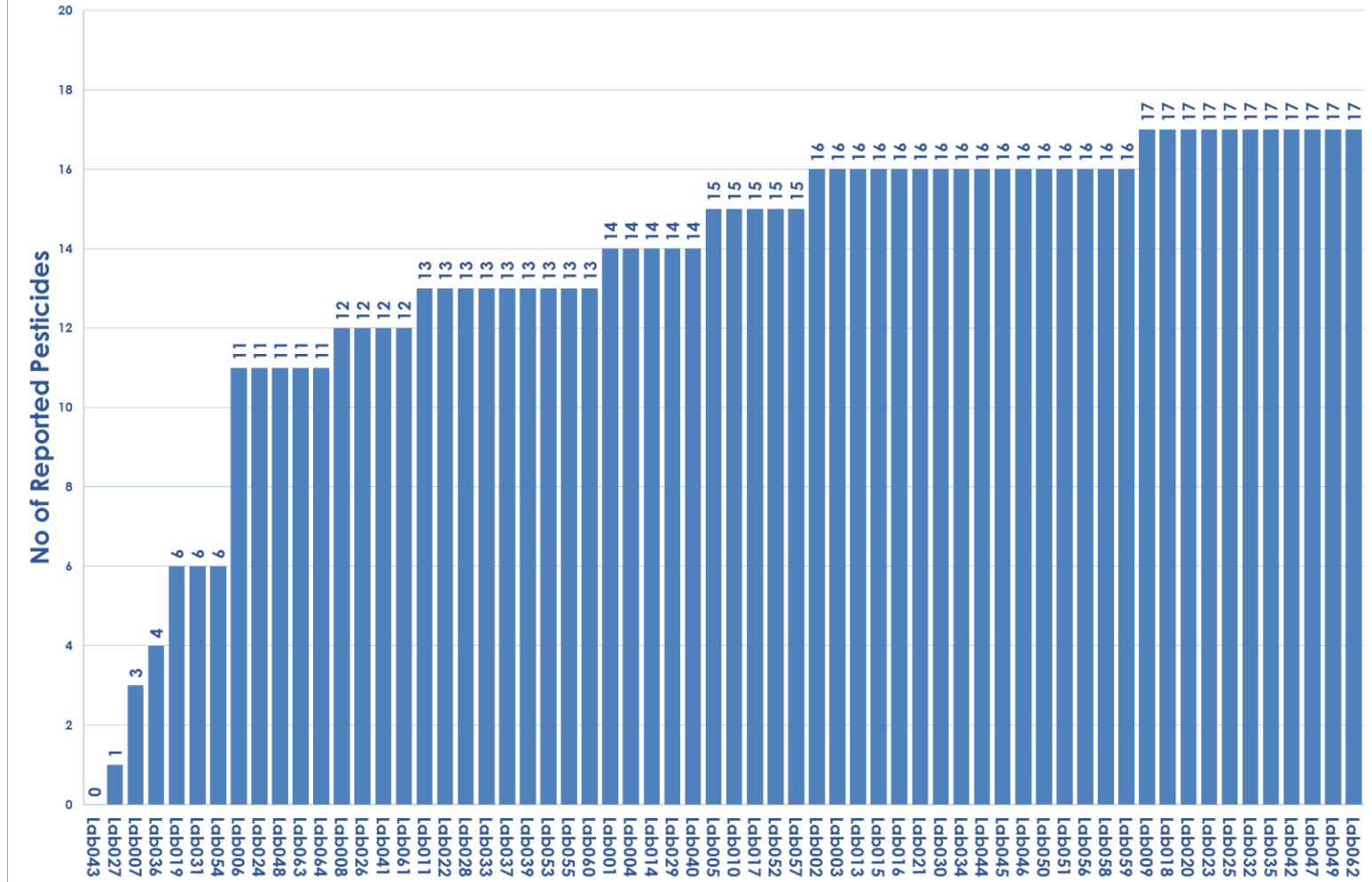
SM12 No of Reported Pesticides
(62 Laboratories Reported Data)

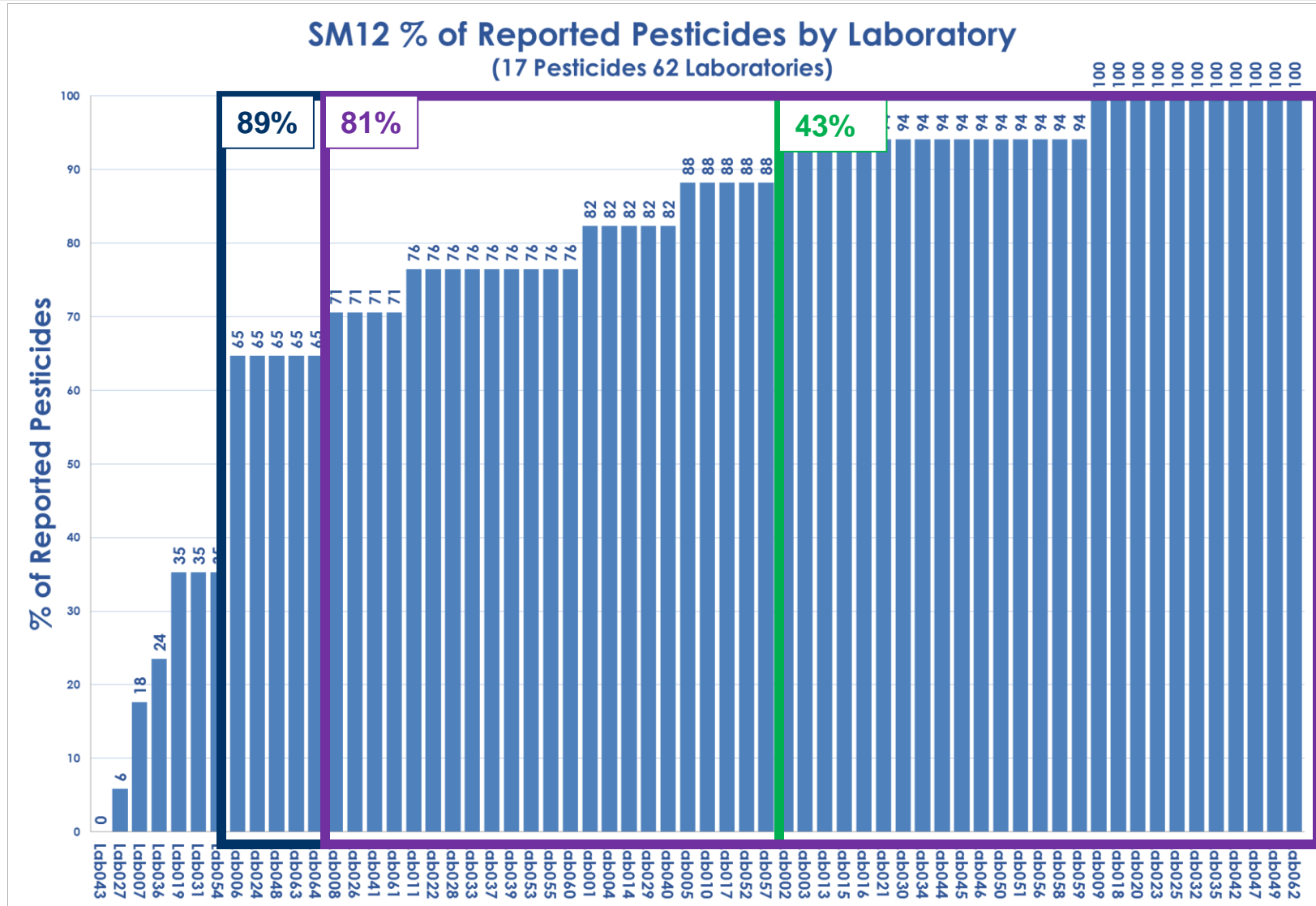


**SM12 % of Reported Pesticides
(62 Laboratories Reported Data)**

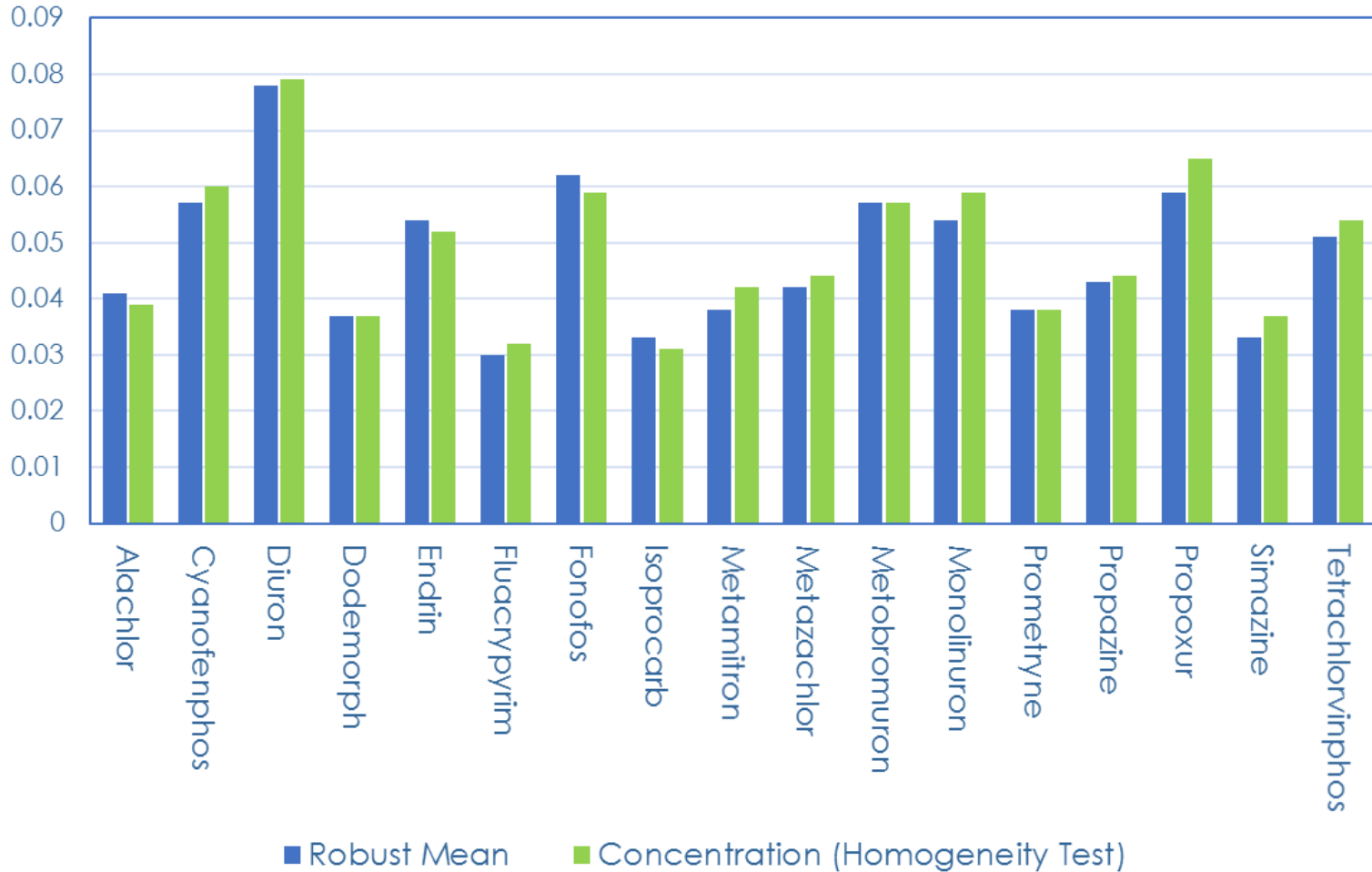


SM12 No of Reported Pesticides by Laboratory (17 Pesticides 62 Laboratories)



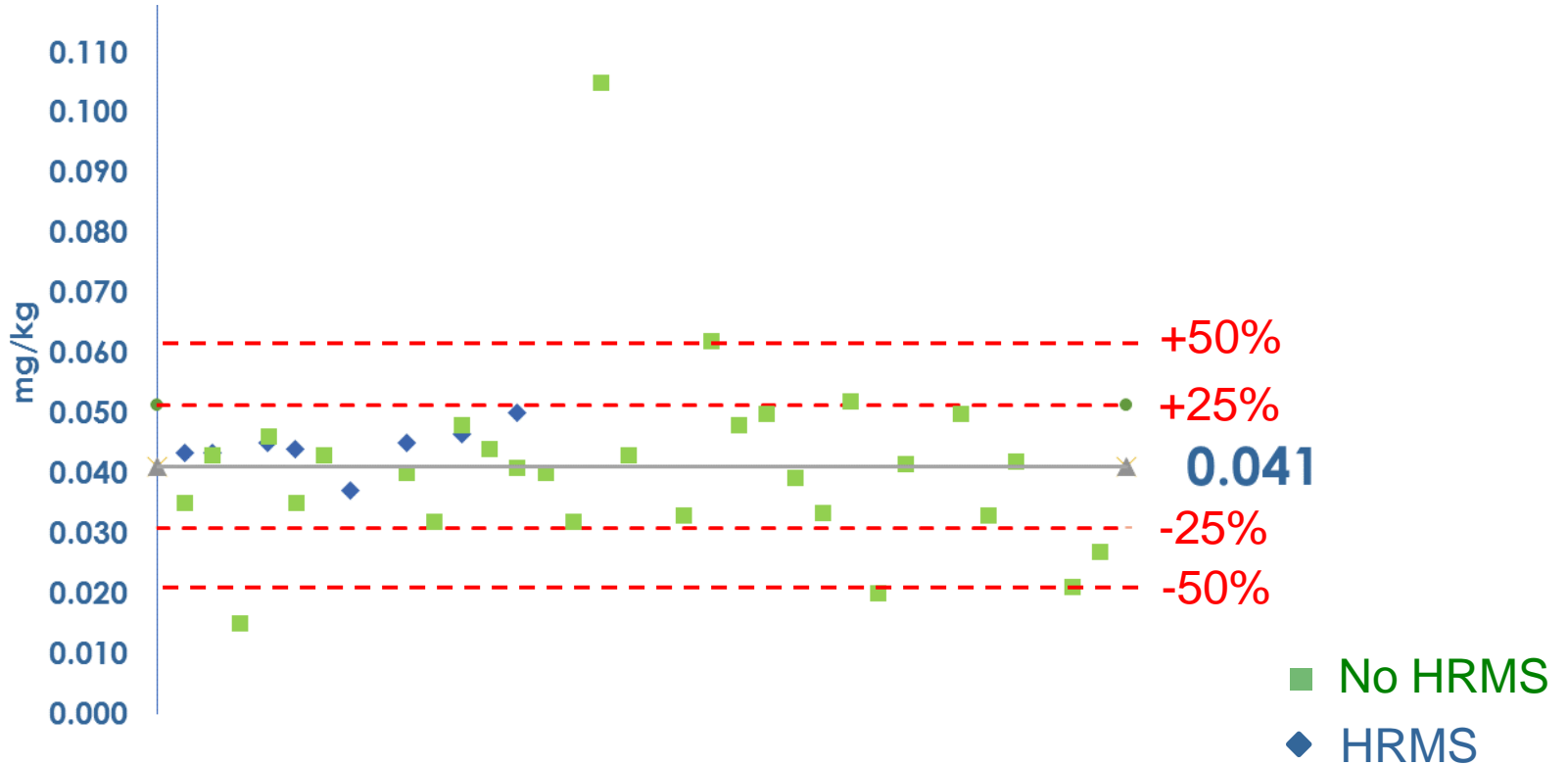


CONCENTRATIONS (mg/kg)



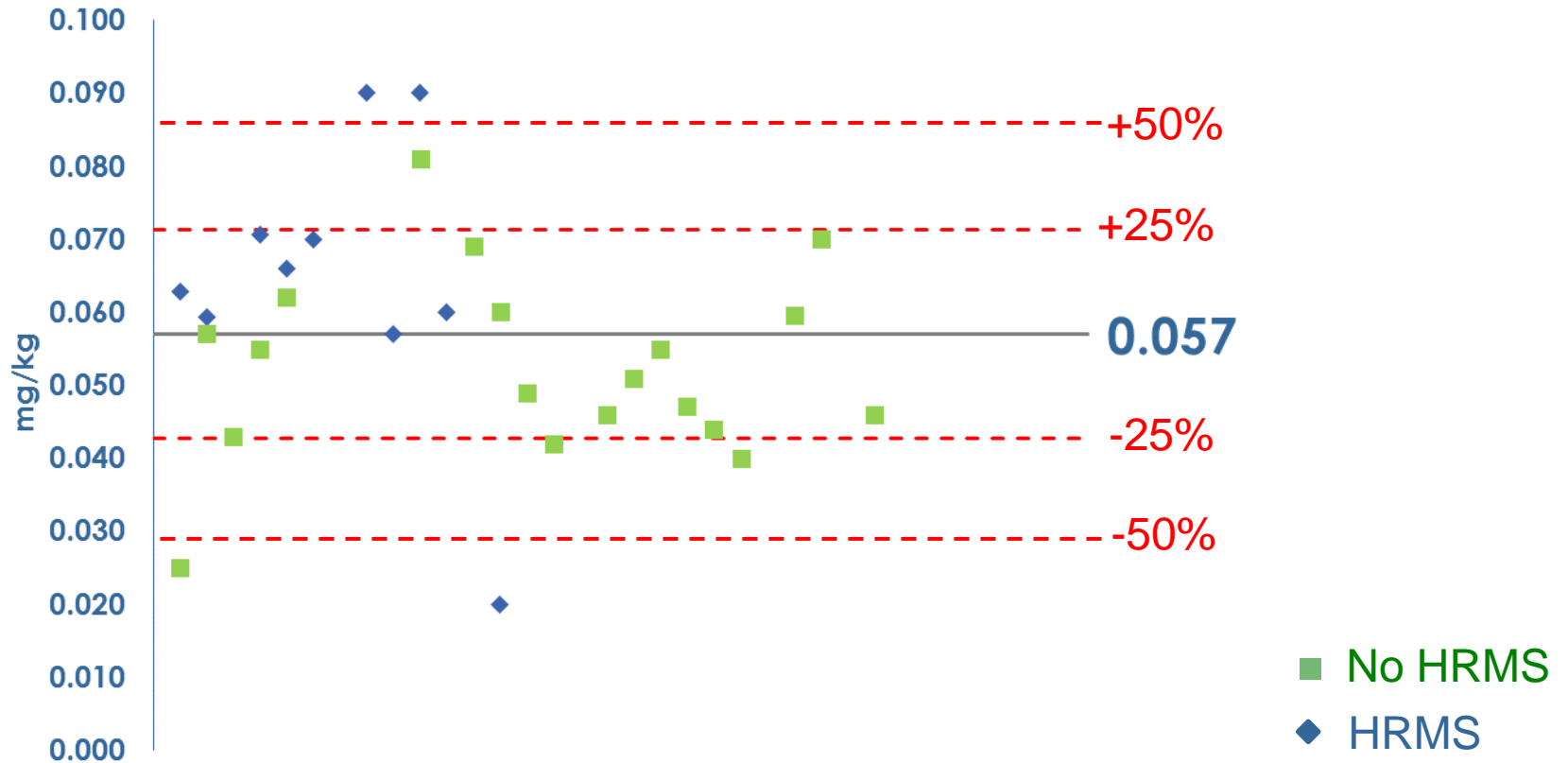
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Alachlor	0.039	0.041	20.5	48	44	71	37

Alachlor



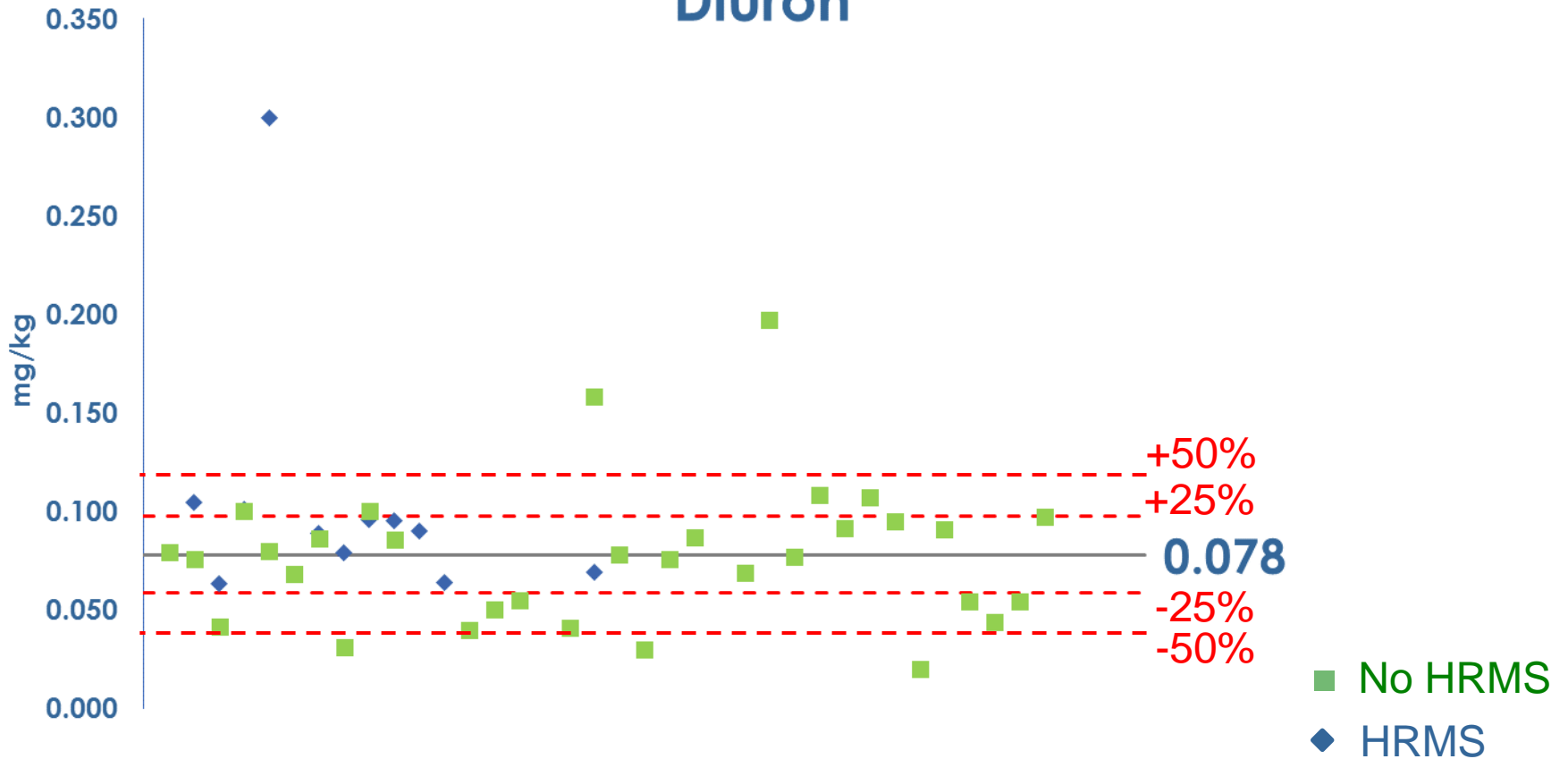
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Cyanofenphos	0.060	0.057	25.2	41	37	60	29

Cyanofenphos



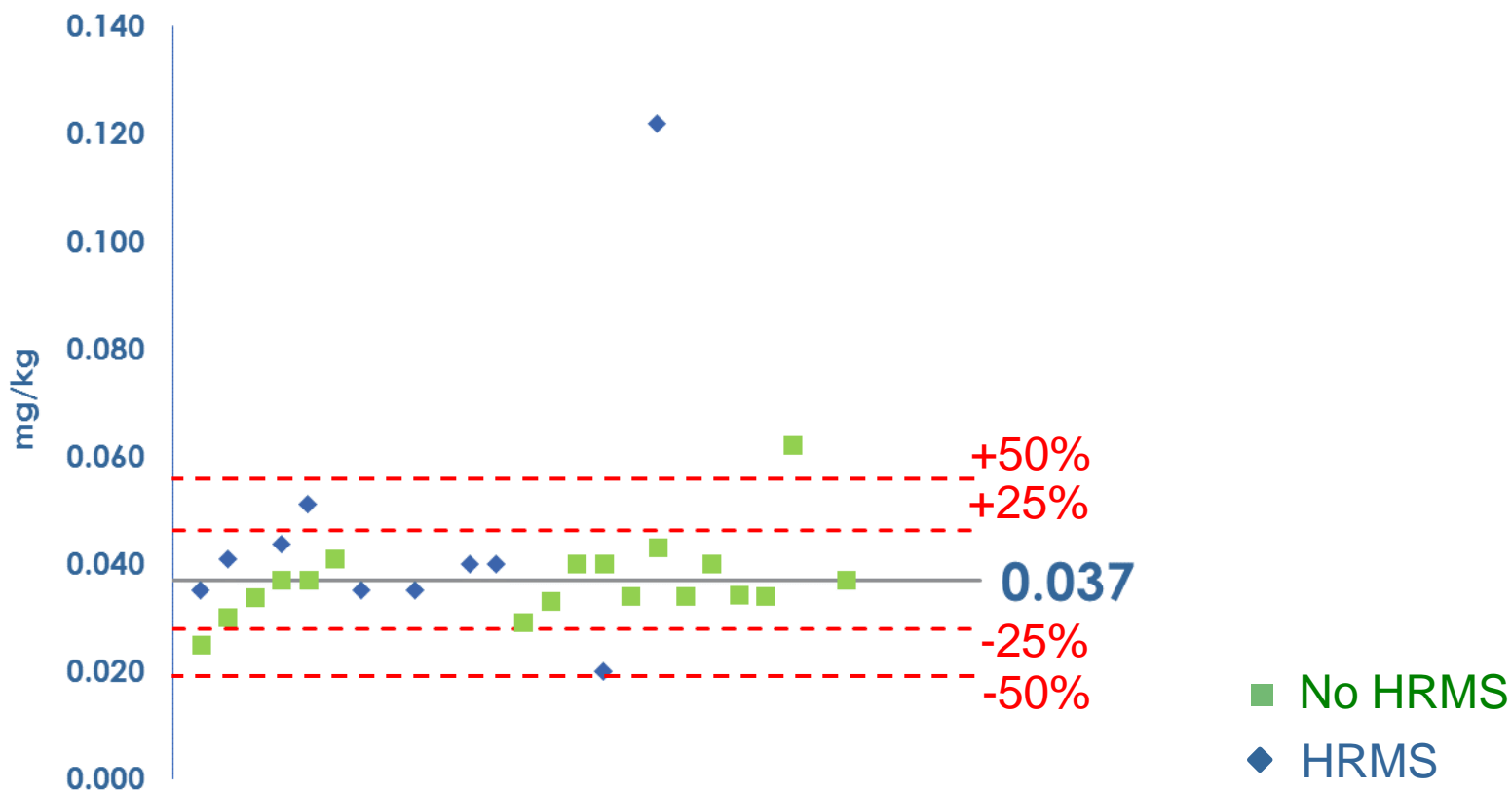
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Diuron	0.079	0.078	35.3	55	53	85	43

Diuron



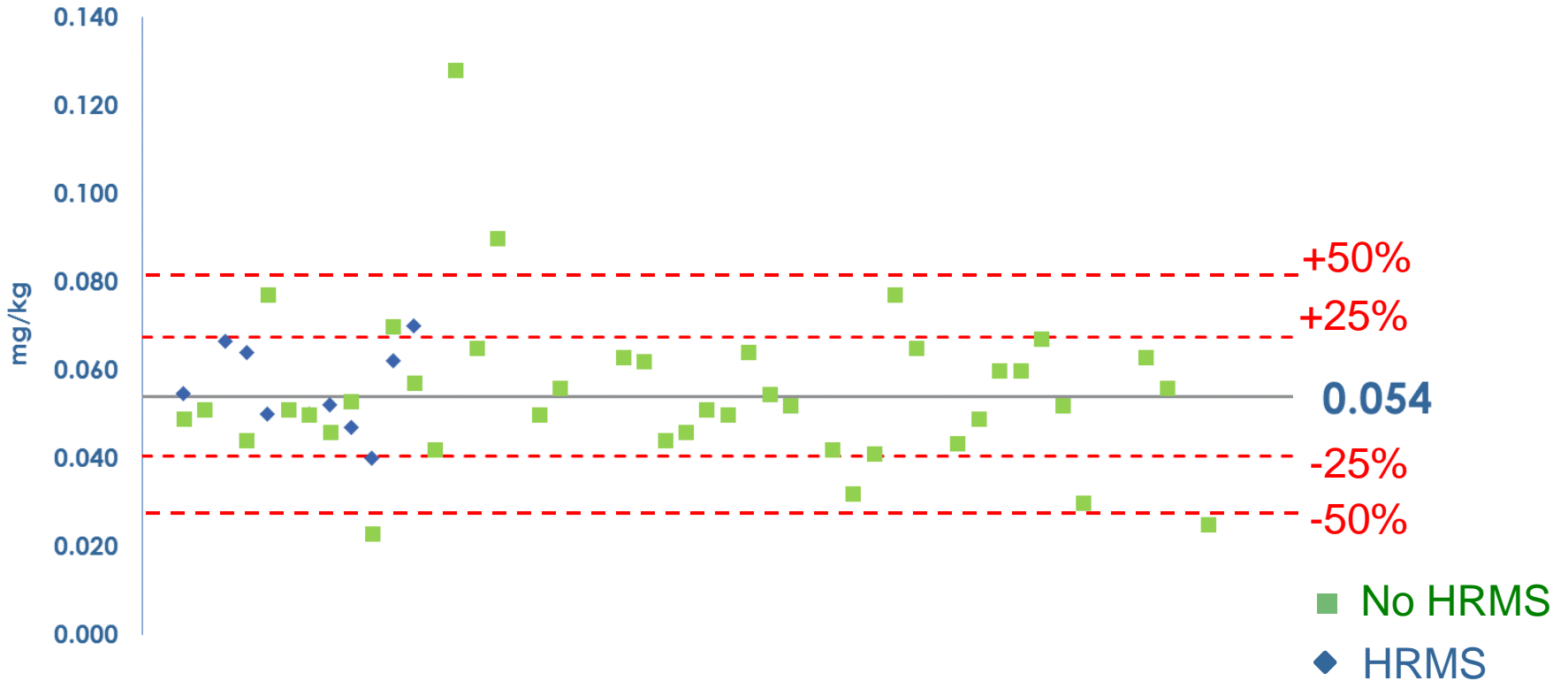
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Dodemorph	0.037	0.037	16.0	45	39	63	28

Dodemorph



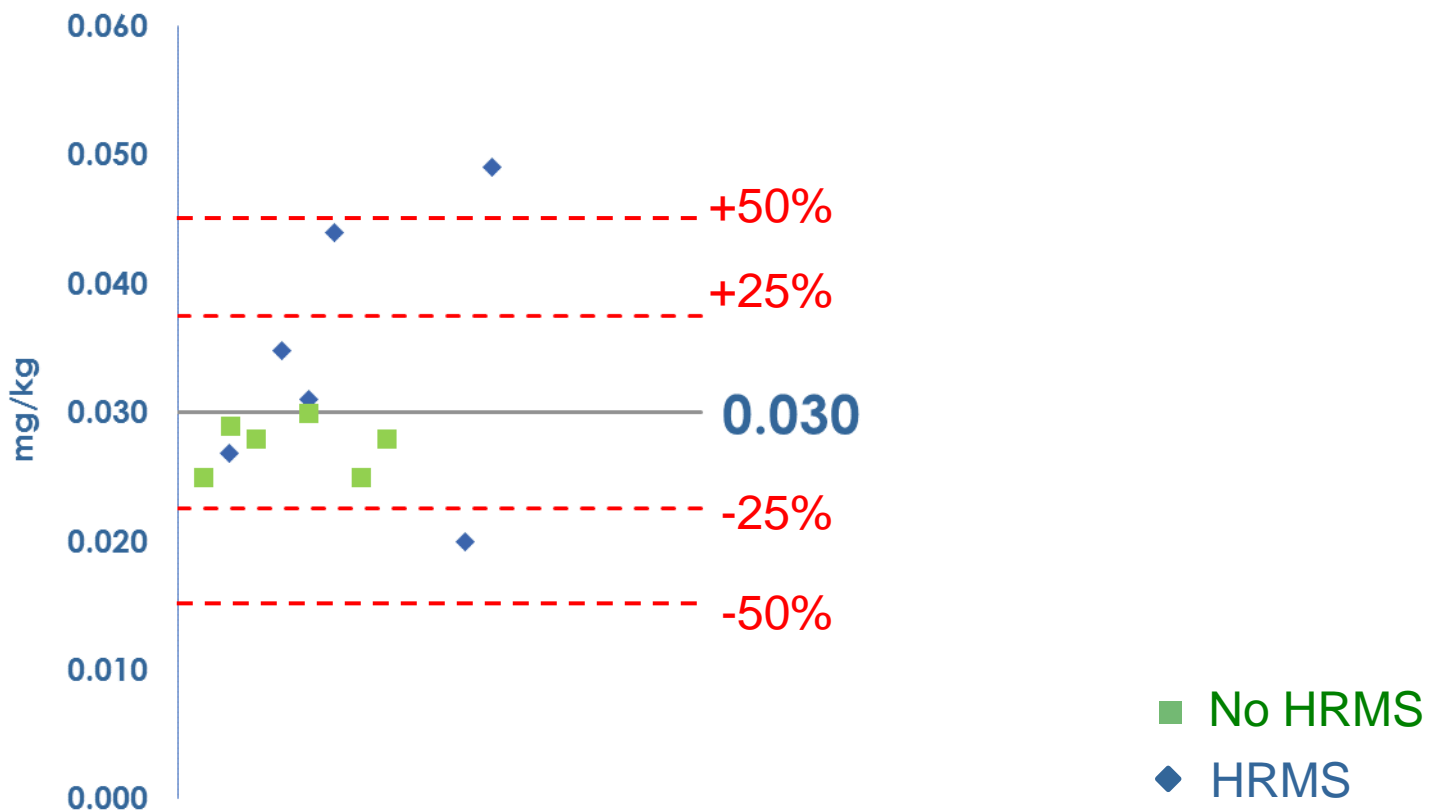
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Endrin	0.052	0.054	22.1	66	53	85	51

Endrin

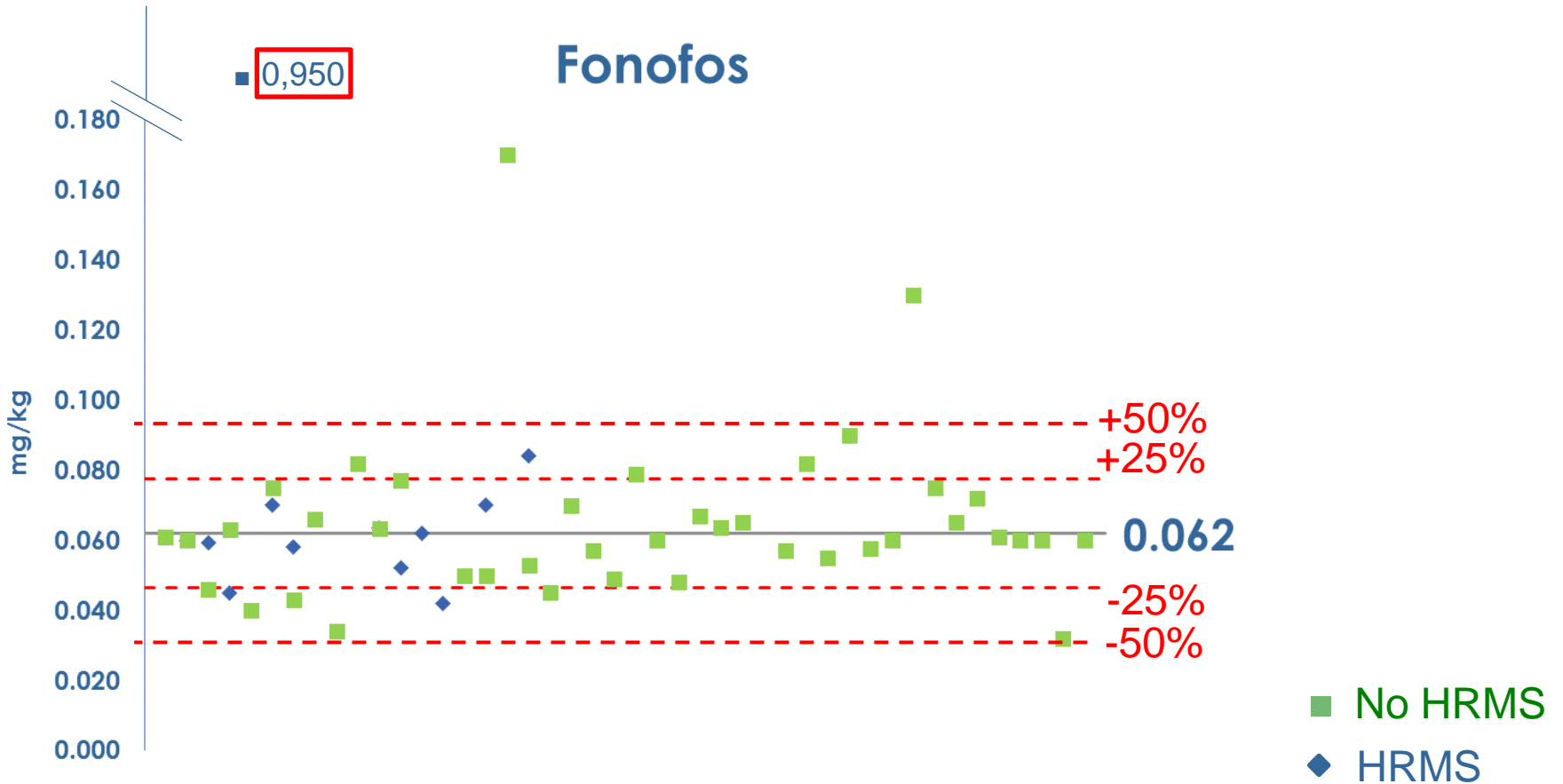


Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Fluacrypyrim	0.032	0.030	22.6	22	20	32	12

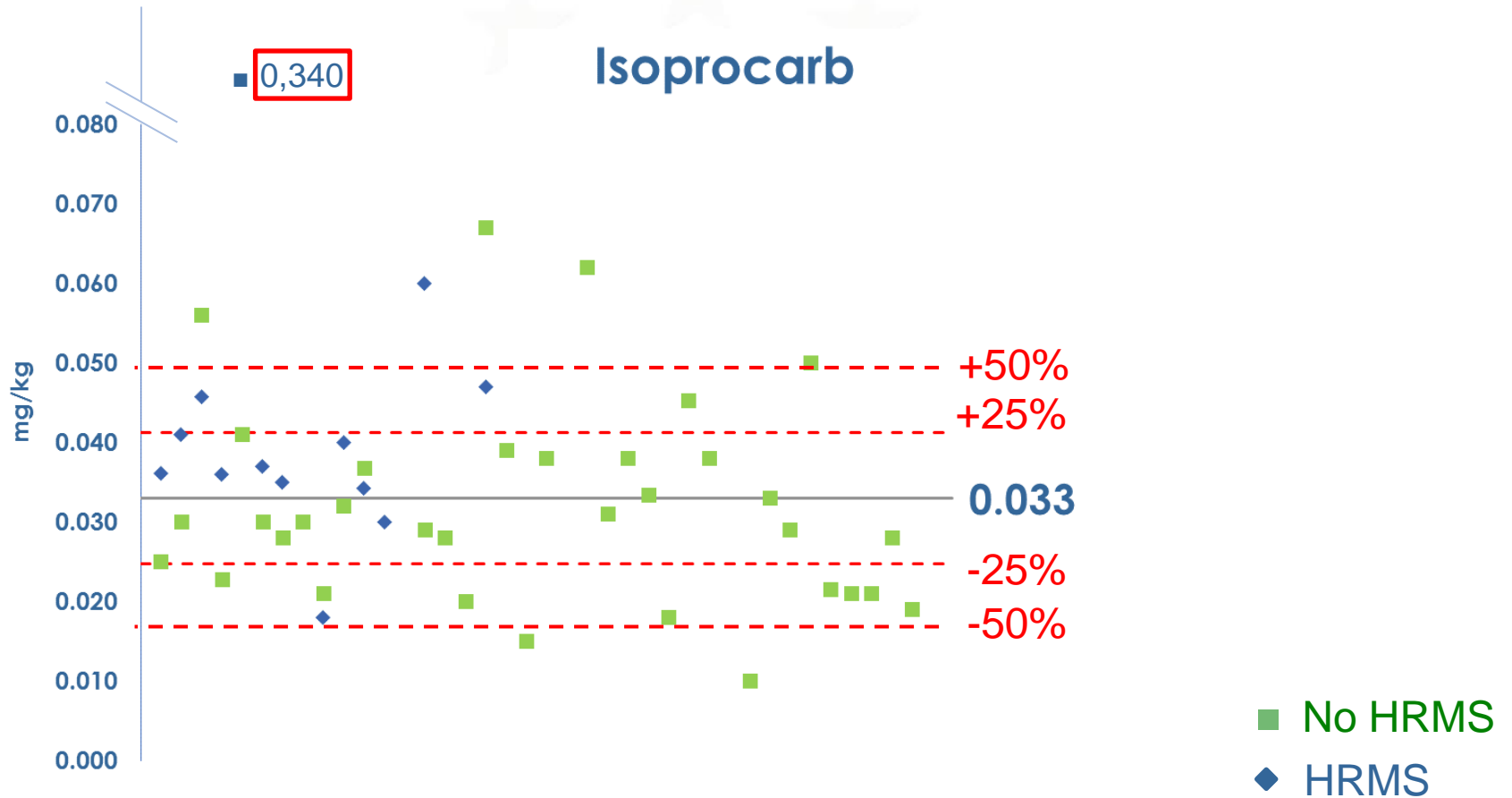
Fluacryprim



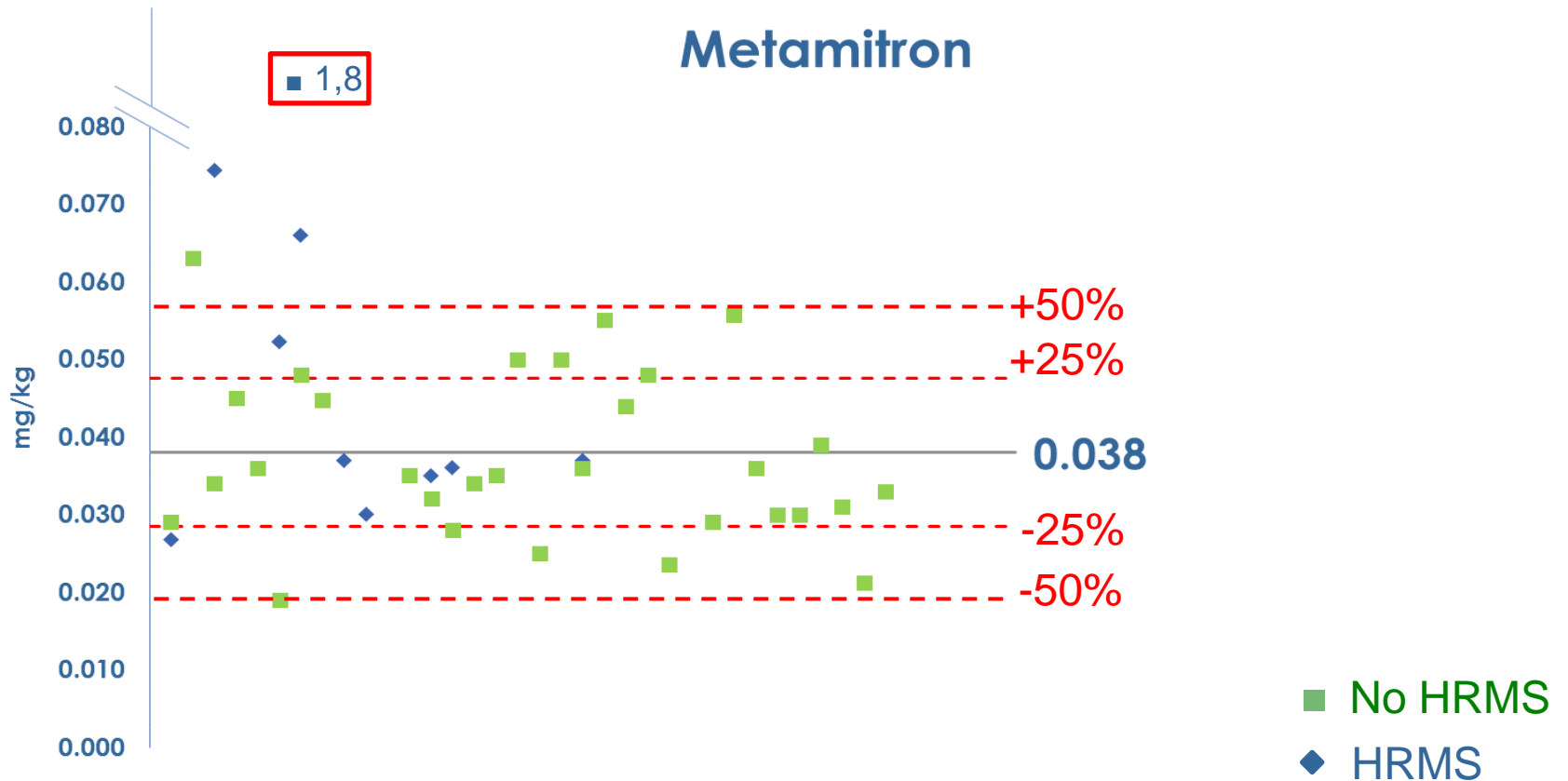
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Fonofos	0.059	0.062	23.2	62	57	92	53



Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Isoproc carb	0.031	0.033	35.9	55	50	81	47

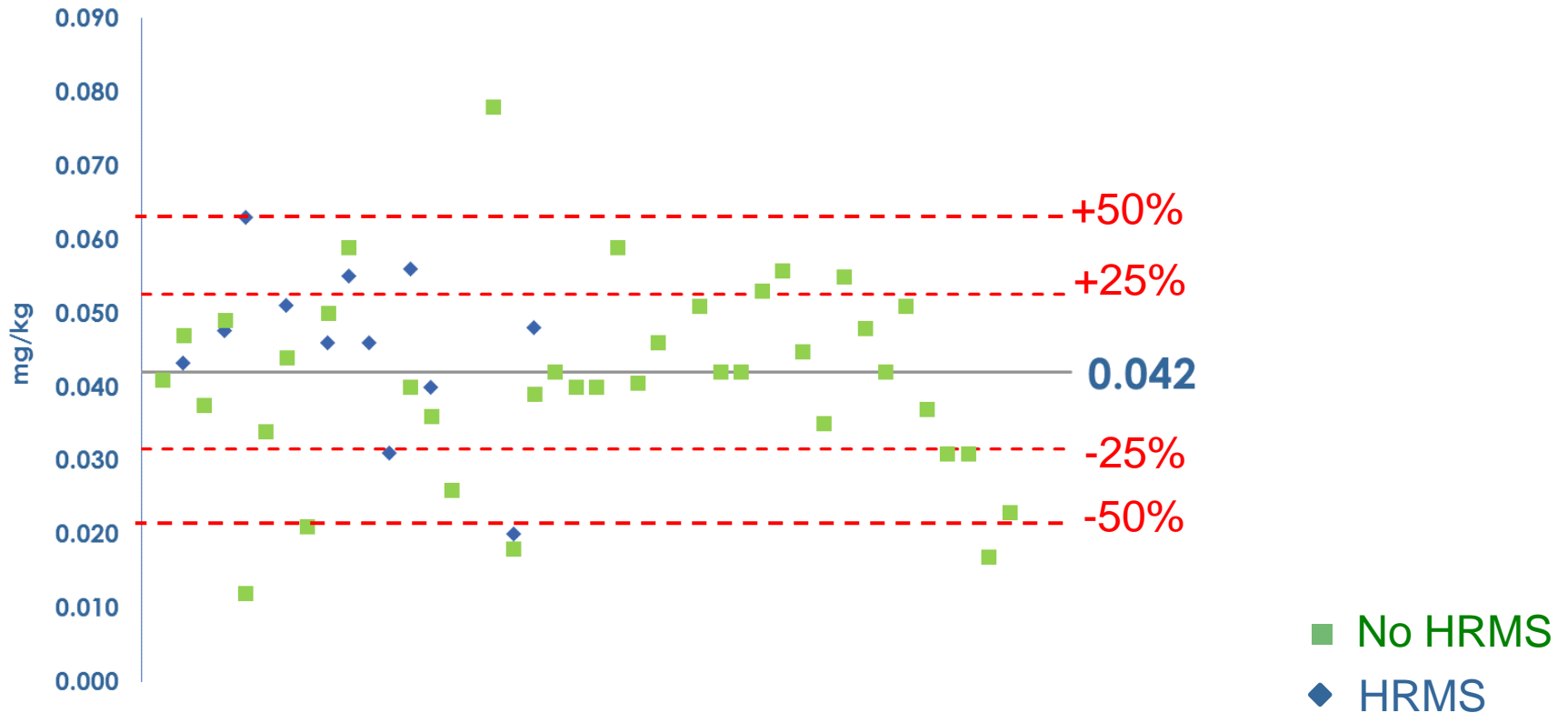


Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Metamitron	0.042	0.038	32.0	57	47	76	40



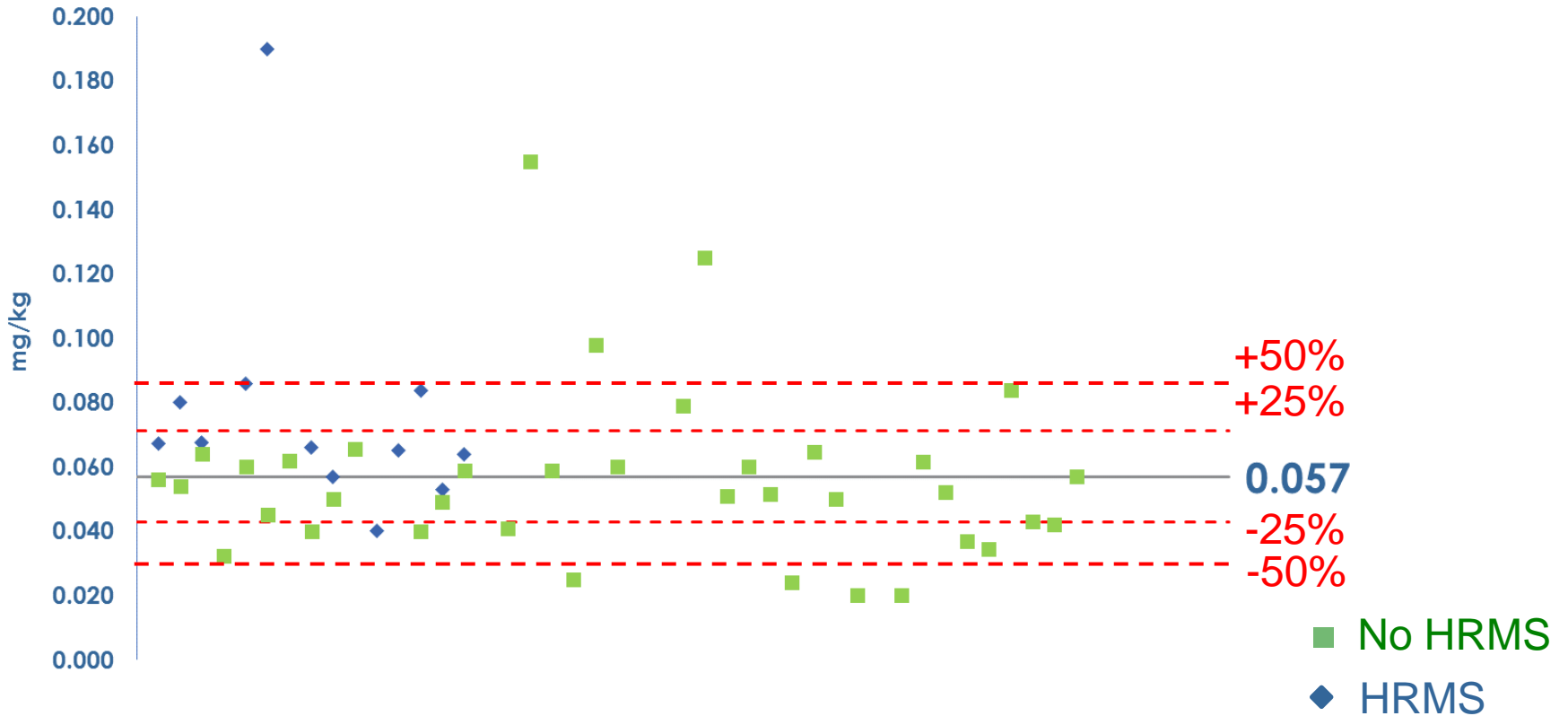
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Metazachlor	0.044	0.042	27.5	61	56	90	50

Metazachlor



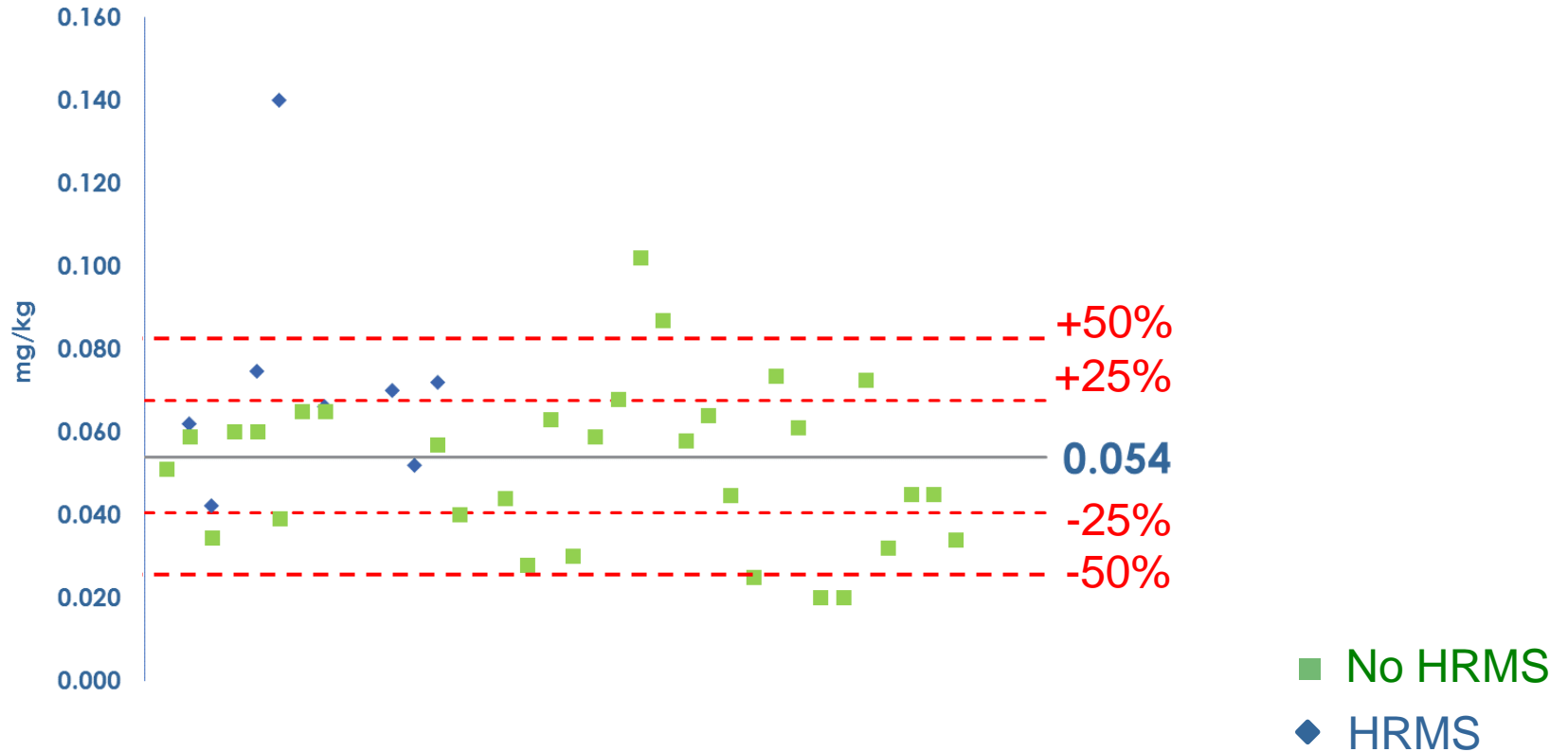
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Metobromuron	0.057	0.057	34.5	60	55	89	49

Metobromuron



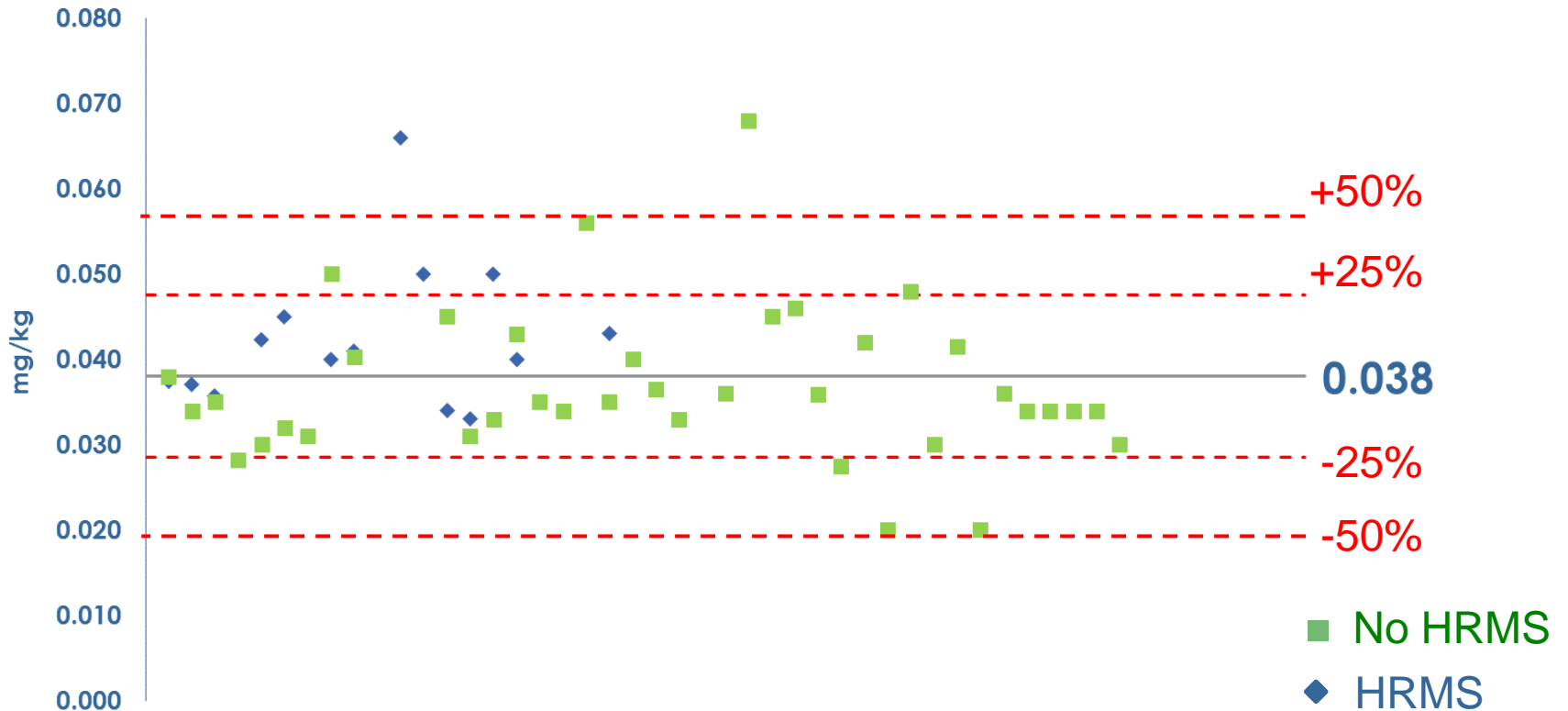
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Monolinuron	0.059	0.054	36.1	51	47	76	39

Monolinuron



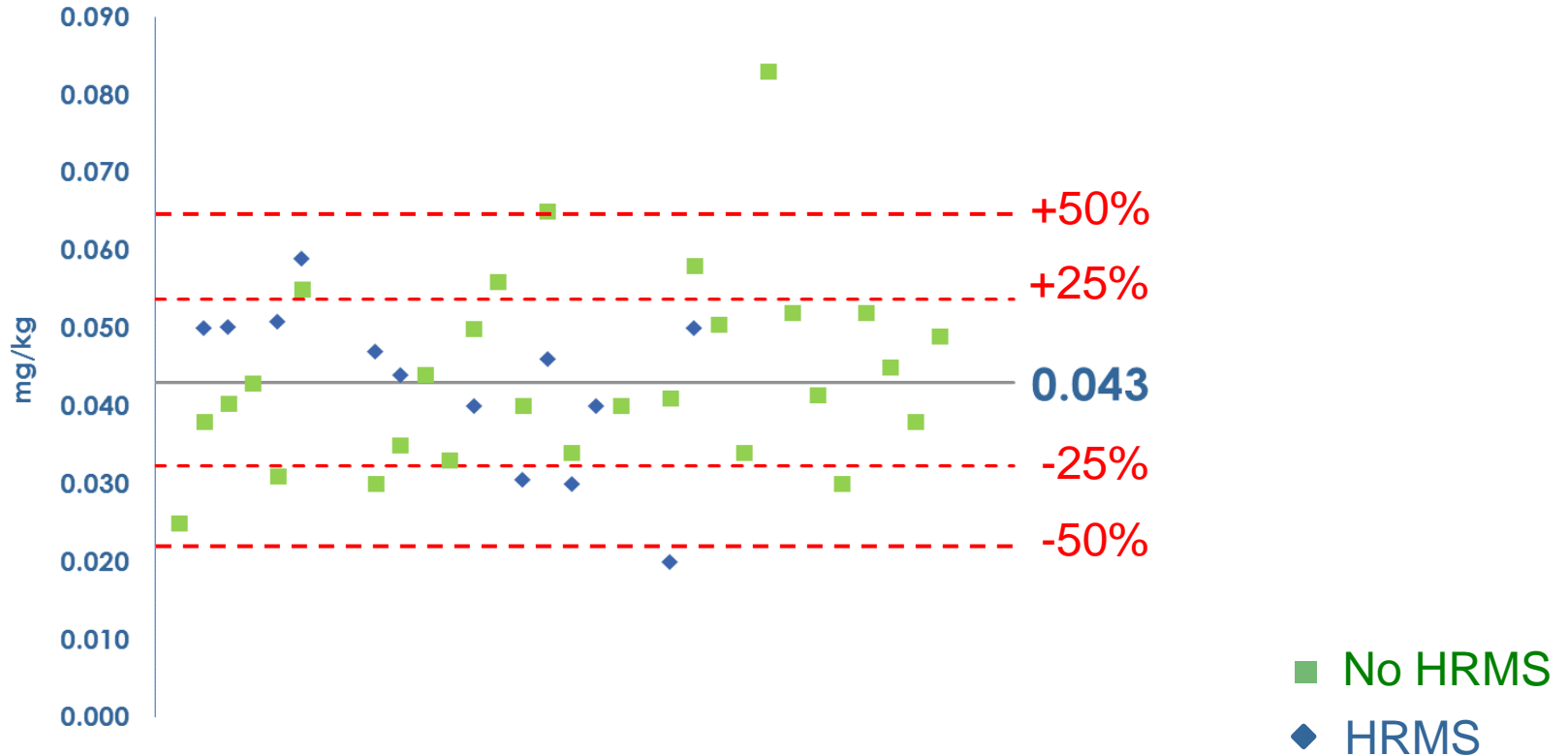
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Prometryne	0.038	0.038	19.5	62	55	89	52

Prometryne



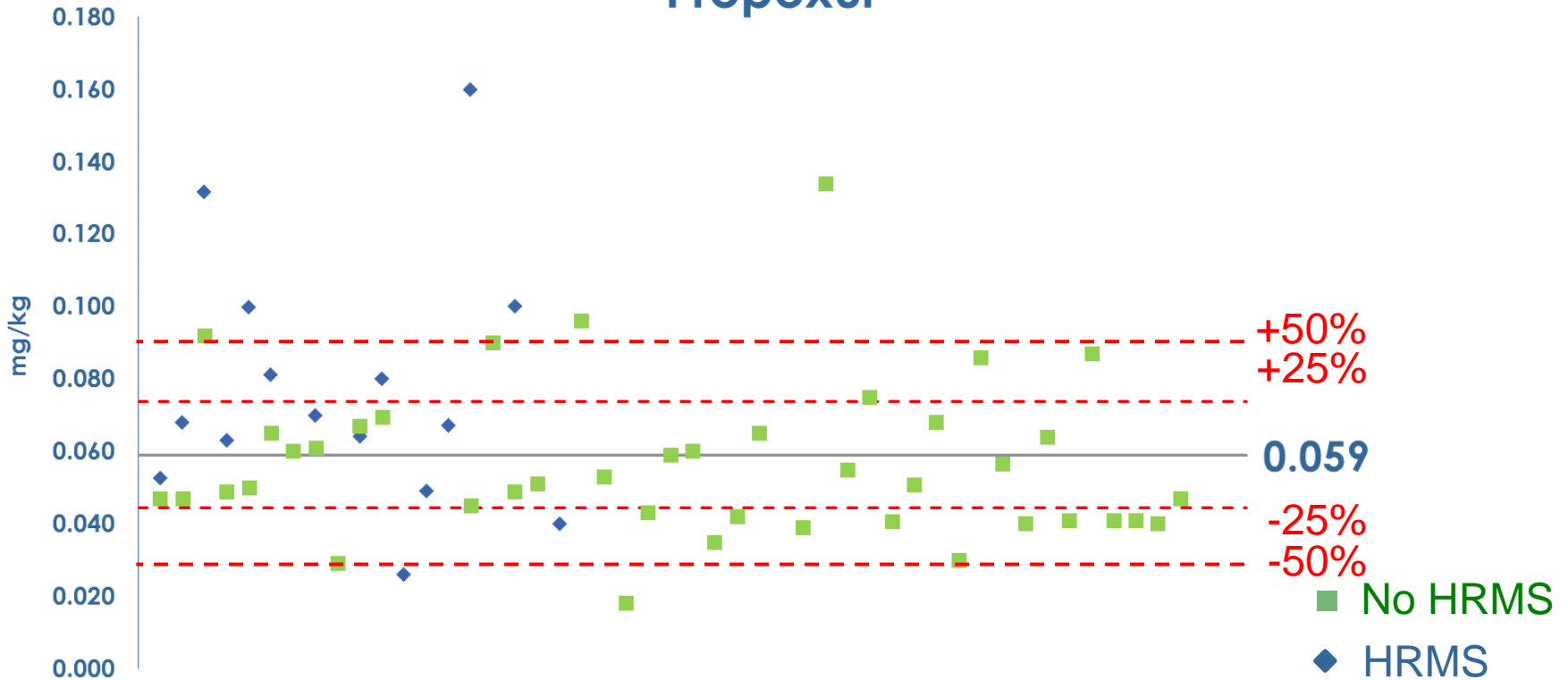
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Propazine	0.044	0.043	25.0	55	50	81	41

Propazine



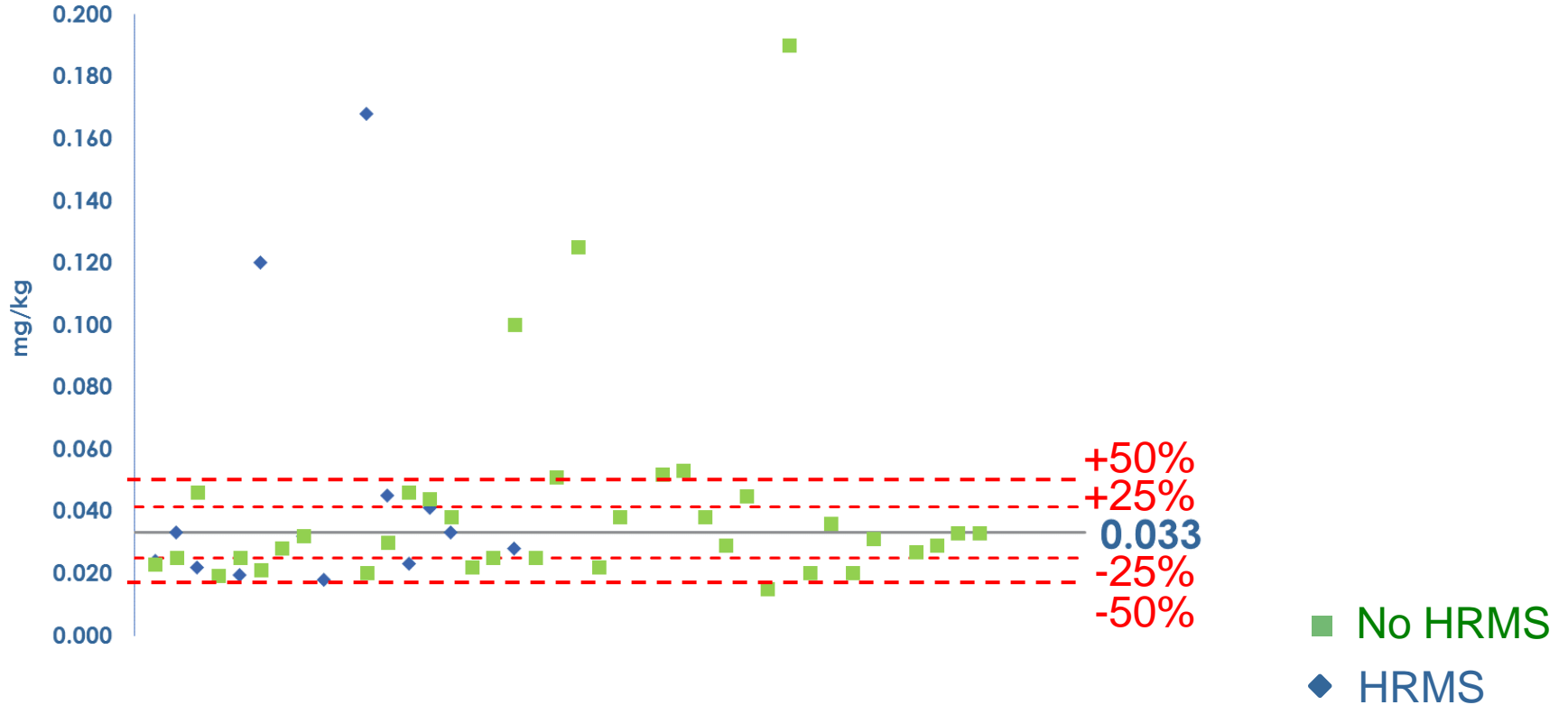
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Propoxur	0.065	0.059	37.2	66	60	97	57

Propoxur



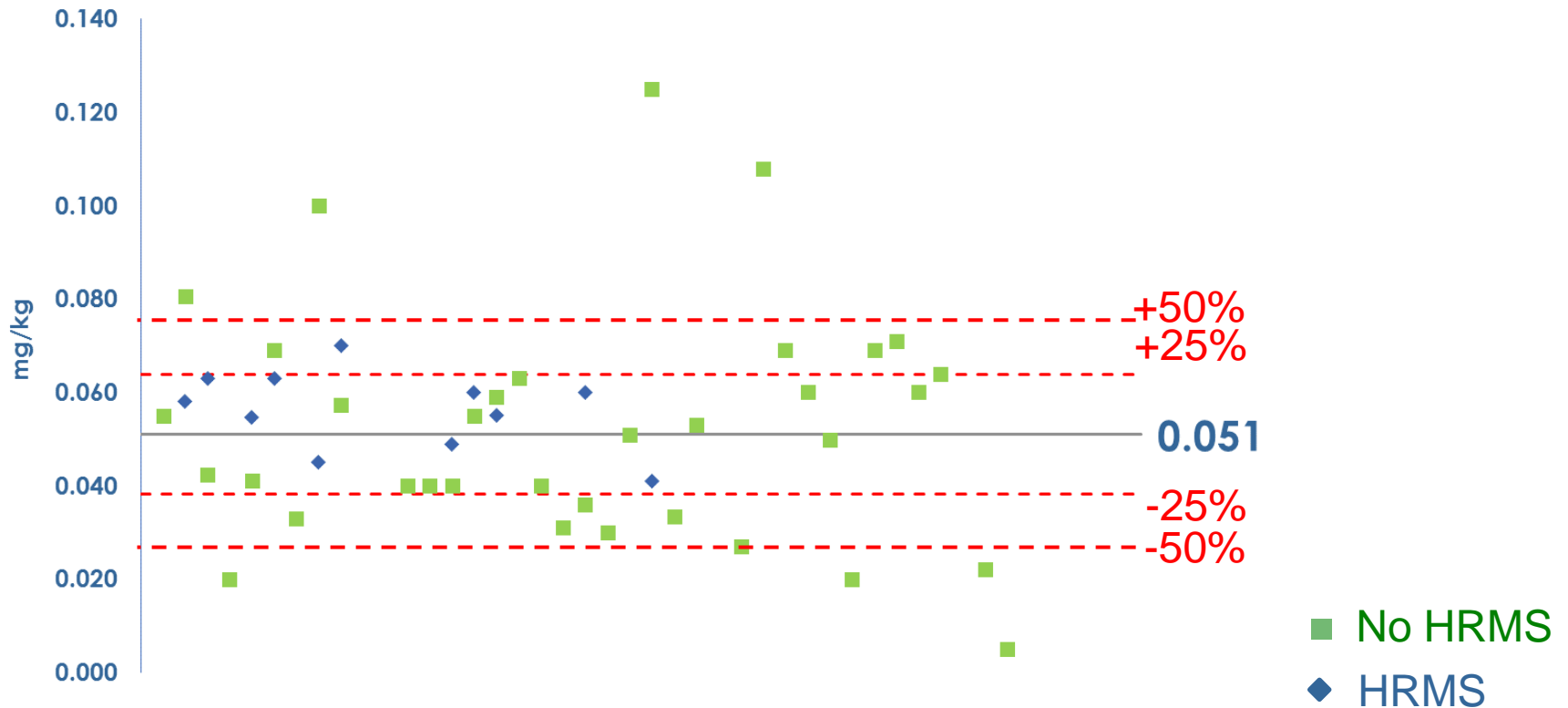
Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Simazine	0.037	0.033	40.2	58	53	85	49

Simazine



Pesticide	Conc. Homogeneity Test (mg/kg)	Robust Mean (mg/kg)	CV (%)	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported
Tetrachlorvinphos	0.054	0.051	36.3	63	58	94	46

Tetrachlorvinphos



RESULTS

Not spiked pesticides reported by
3 or more laboratories:

Chlorbufam (3 laboratories)

3,4-Dichloraniline (4 laboratories)

Chlorbufam

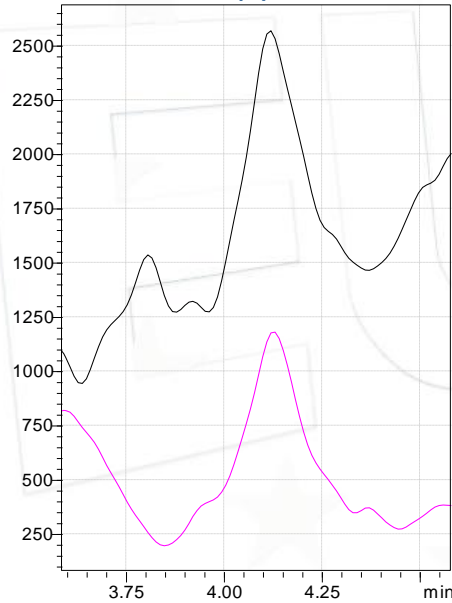
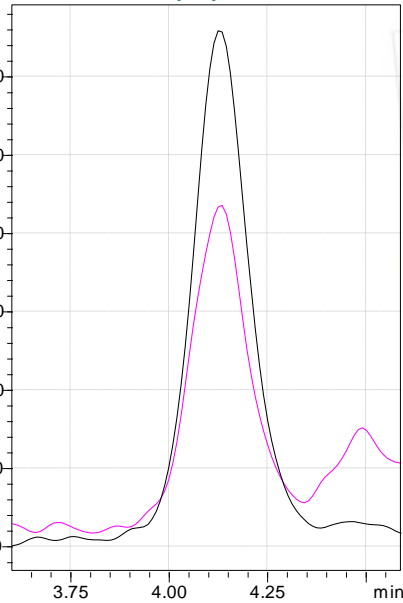
SFC-MS/MS

STD Chlorbufam (10ppb)
ONION

(+)

ONION

(-)



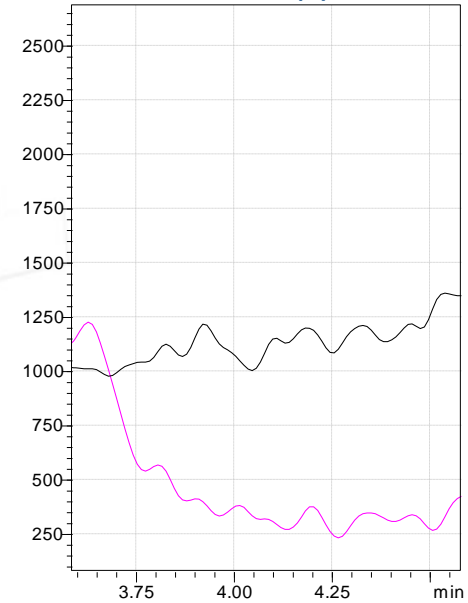
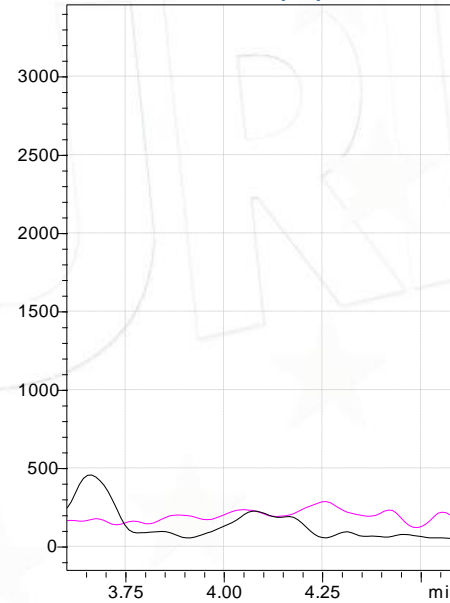
241>172
241>154

222>178
222>176

EUPT-FV-SM12
SAMPLE

(+)

(-)



241>172
241>154

222>178
222>176

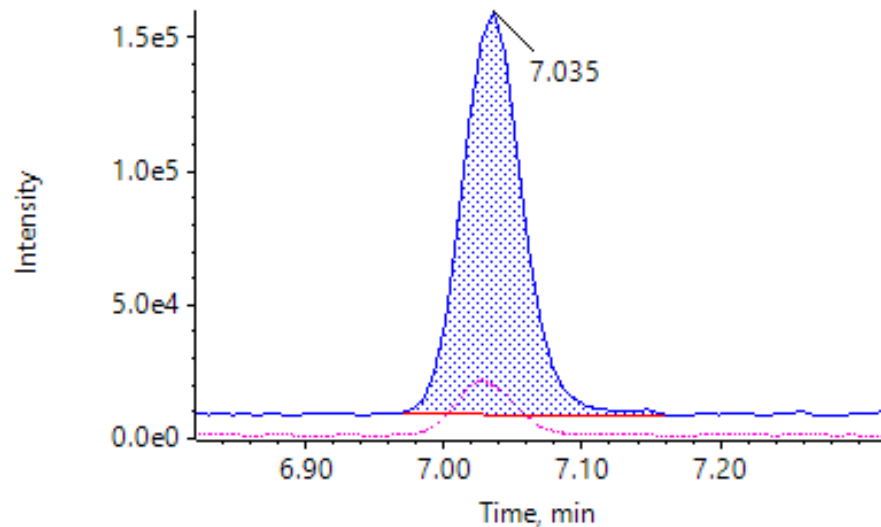
3,4-Dichloroaniline

LC-MS/MS

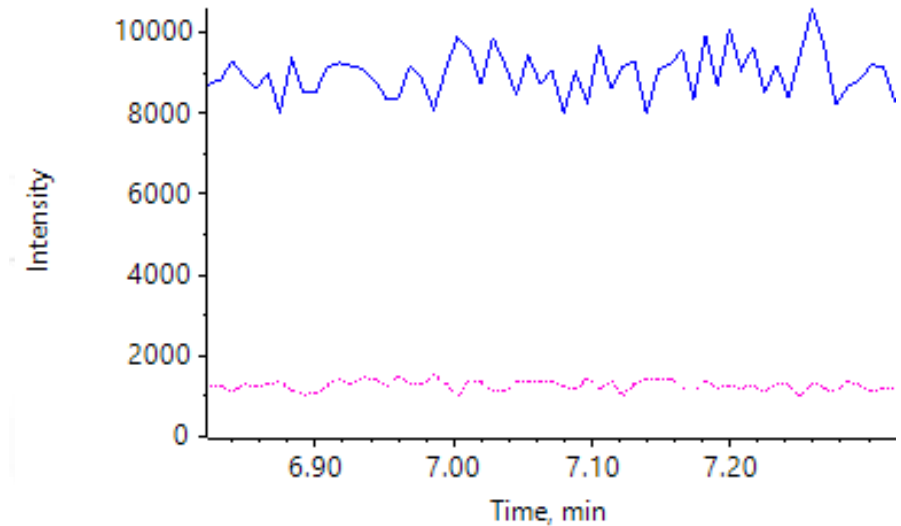
STD 3,4-Dichloroaniline (10ppb)
 ONION

EUPT-FV-SM12
 SAMPLE

+ ● Onion_3,4-dichloroanilina_10pp...2020.wiff), (sample Index: 2)
 Area: 4.651e5, Height: 1.508e5, RT: 7.04 min



+ ● SM_12-dil5 - 3.4-Dichloroanili...2020.wiff), (sample Index: 5)
 Area: N/A, Height: N/A, RT: N/A min



Results

Other compounds reported by laboratories:

Reported below 0.01 mg/kg or not quantified

1-Naphthol

Fenfuram

Quinacetol

3,4-Dichlorophenyl
isocyanate

Jasmonic acid

Sebuthylazine

Acetochlor

Monuron

Sebuthylazine desethyl

Buturon

Phenisopham

Sulphur

Chlorfenapyr

Proxan

Trietazine

Dinotefuran

Pyroquilon

Vitamin D3/Colecalciferol

Results

Other compounds reported by laboratories:

Reported ABOVE 0.01 mg/kg

3,5-Dichloroaniline

Dithiocarbamates (det. as CS₂)

3-Chloraniline

Fenhexamid

Azoxystrobin

Fluometuron

Captan

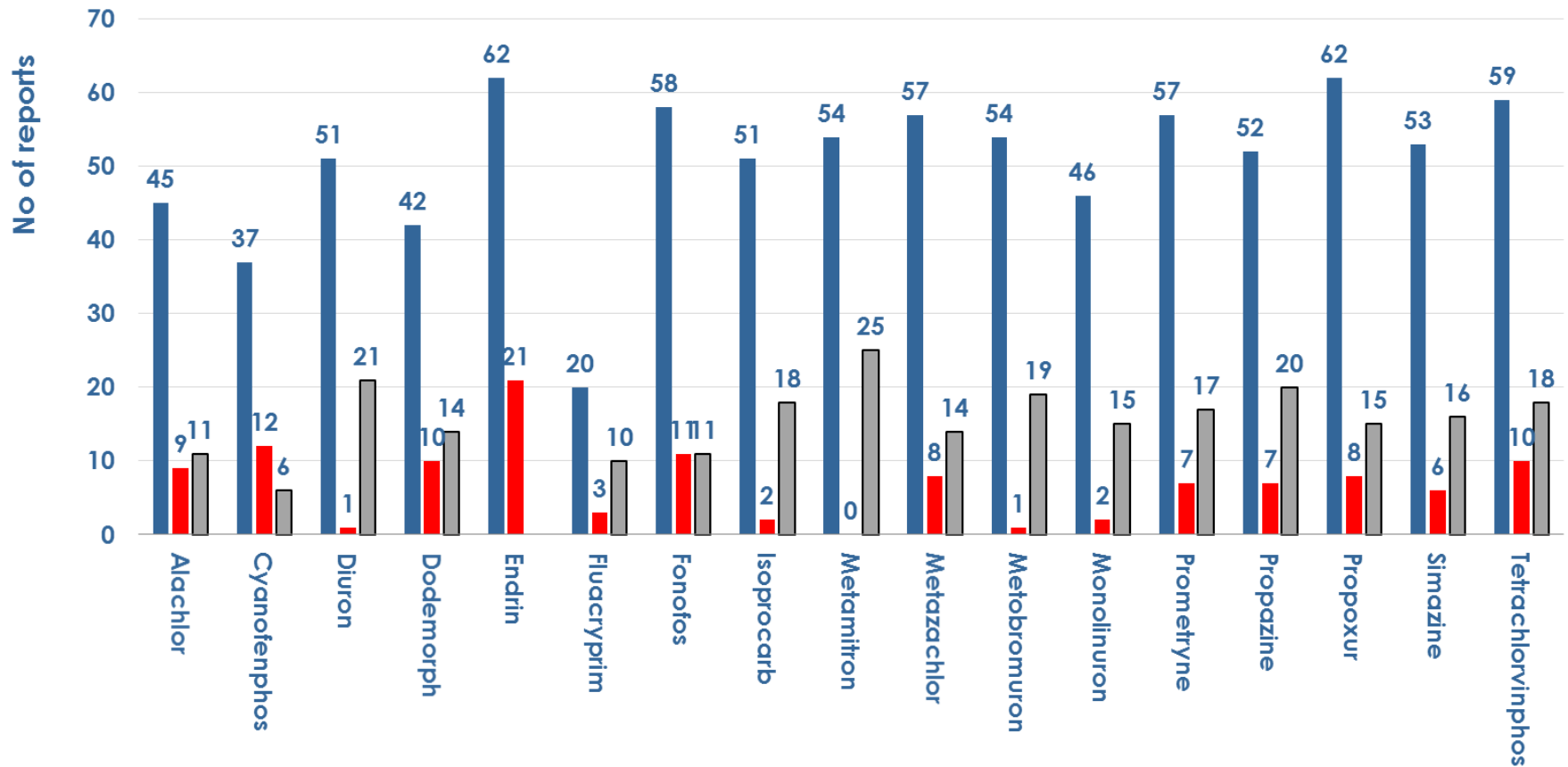
Sulphur

Dieldrin

Terbutryn

Tetrahydrophthalimide

SM-12 Techniques Full Scan/AIF

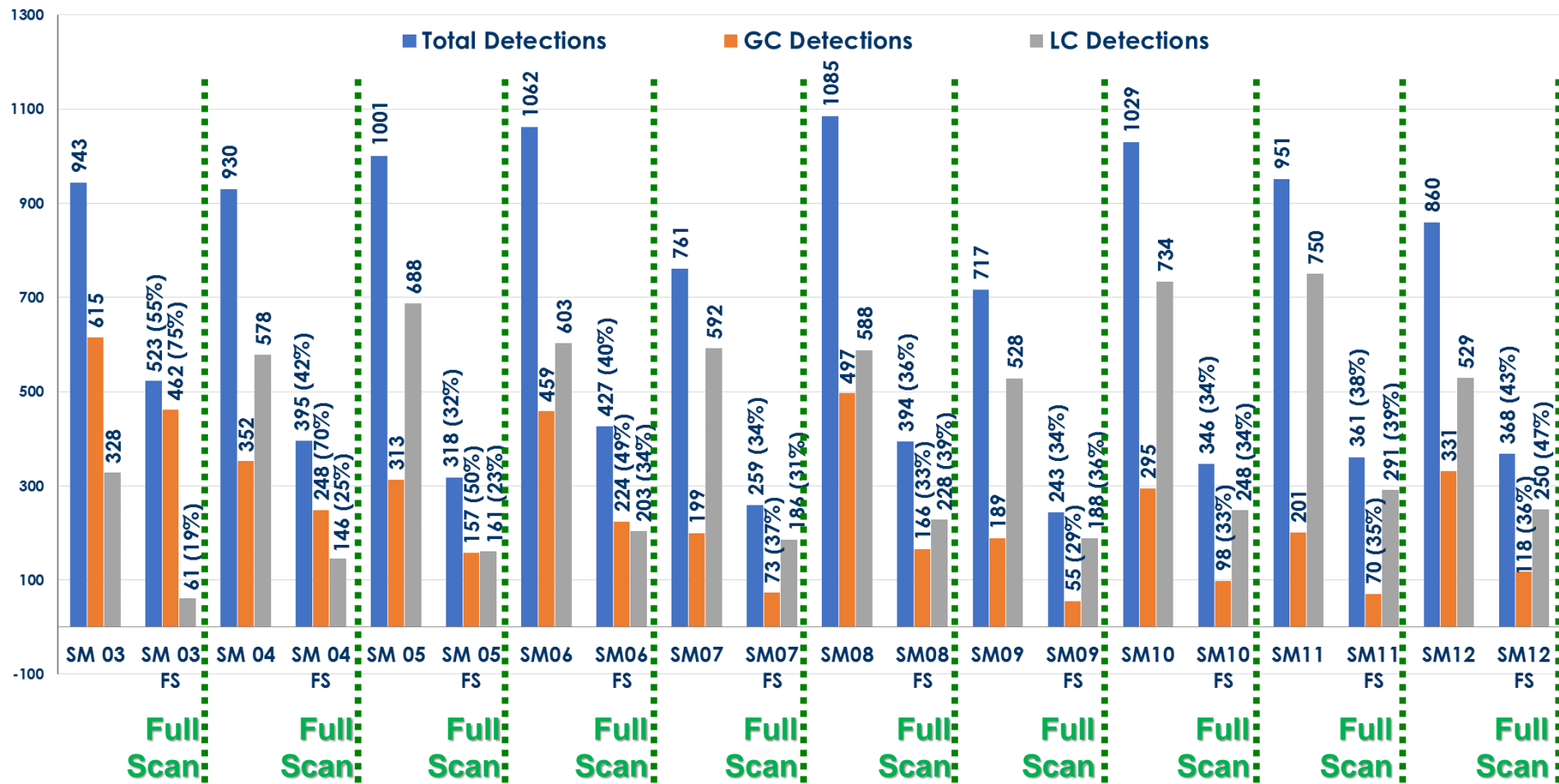


■ Total Number of Reported Detections (some laboratories apply more than one technique) ■ Full Scan/AIF GC ■ Full Scan/AIF LC

Analytical Techniques



EURL-FV



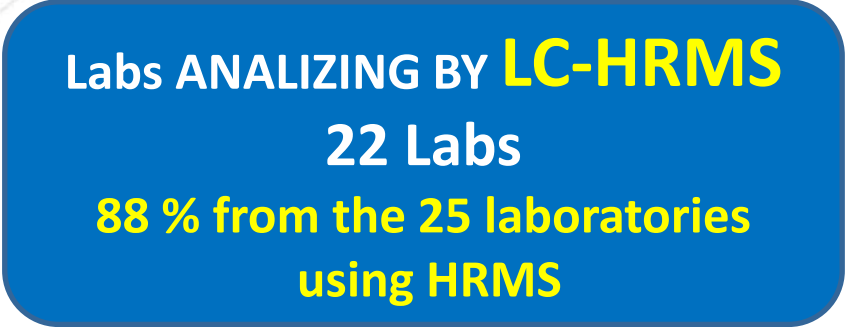
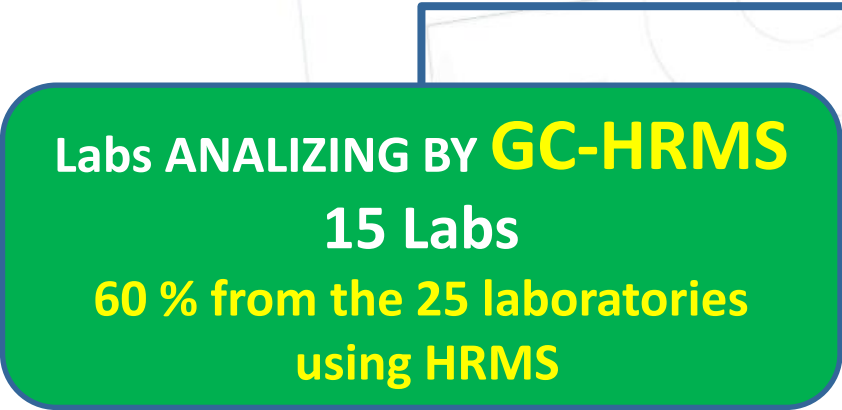
LAB. CODE	Total Detections (all of them)	GC Detections	LC Detections	Total Full Scan	GC Full Scan	LC Full Scan
Lab001	22	10		22	10	12
Lab002	11	7		7	7	7
Lab003	15	8		15	8	0
Lab004	16	11		0	0	0
Lab005	17	2		0	0	0
Lab006	6	6		0	0	0
Lab007	14	3		0	0	0
Lab008	8	8		0	8	0
Lab011	3	0		0	0	0
Lab012	19	9		0	0	0
Lab013	25	8		0	0	0
Lab014	14	0		14	14	0
Lab015	11	1		0	0	0
Lab016	14	8		0	0	0
Lab018	14	8		0	0	0
Lab019	14	8		0	0	0
Lab020	14	3		0	0	0
Lab021	21	5		21	3	18
Lab022	10	9		0	0	0
Lab023	16	6		13	9	4
Lab024	33	14		16	4	12
Lab025	24	4		0	0	0
Lab026	14	7		0	0	0
Lab027	13	4		0	0	0
Lab029	23	7		9	0	9
Lab030	12	6		0	0	0
Lab031	16	5		0	0	0
Lab032	22	9		22	9	13
Lab033	15	8		0	3	11
Lab034	14	3		14	0	0
Lab035	13	9		0	0	0
Lab036	0	9		0	0	0
Lab037	9	2		0	0	0
Lab038	13	4		11	0	11
Lab039	13	8		13	8	5
Lab040	13	4		0	0	0
Lab041	21	15		13	0	9
Lab042	12	3		12	3	9
Lab043	5	2		0	0	0
Lab044	9	6		0	0	0
Lab045	7	7		0	0	0
Lab046	12	1		0	1	0
Lab047	1	5		0	0	0
Lab048	10	3		0	0	0
Lab049	8	0		0	0	0
Lab050	1	8		0	0	0
Lab051	8	0		0	0	0
Lab052	3	0		0	0	0
Lab053	13	1		0	0	0
Lab054	14	7		0	0	0
Lab056	15	6		0	0	0
Lab057	15	7		9	1	9
Lab059	8	7		1	7	0
Lab060	14	4		8	4	0
Lab061	15	9		0	0	0
Lab062	14	9		0	0	0
Lab063	14	4		0	0	0
Lab064	11	13		0	13	0
Lab065	15	0		8	0	0
Lab066	8	0		15	0	0
Lab067	20	4		0	0	0
Lab068	14	6		0	0	0
Lab069	26	5		12	0	0
Lab070	15	9		0	0	0
Lab071	23	7		0	0	0
Lab072	16	5		0	0	0
Lab073	10	9		9	25	0
Lab074	35	11		0	0	0
Lab075	15	6		0	0	0
Lab076	11	3		0	0	0
Lab077	8	11		0	0	0
Lab078	16	3		5	1	0
Lab079	15	5		0	0	0
Lab080	9	8		0	0	0
Lab081	13	5		0	0	0
Lab082	14	12		14	0	0
Lab083	2	2		0	0	0
Lab084	19	0		0	0	0
Lab085	6	4		0	0	0
Lab086	4	0		0	0	0
Lab087	14	7		0	0	0
Lab089	12	0		11	0	0
Lab090	13	0		13	0	0

Total Detections: 860
Total Full Scan/AIF: 368
43% of Total Detections

GC Detections: 331
GC Full Scan/AIF: 118
(36% of the GC detections)
14% of Total Detections

LC Detections: 529
LC Full Scan/AIF: 250
(47% of the LC Detections)
29% of Total Detections

NO OF PARTICIPATING LABS 62 LABS



**Thank You
for Your Attention**



EURL EUROPEAN
UNION
REFERENCE
LABORATORY