



**EURL**

European Union Reference Laboratory for Pesticide Residues in Fruits & Vegetables

**EUPT-FV-SM07**

European Proficiency Test FV-SM07

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

*SCREENING METHODS 07*

**RESULTS**



European  
Commission

**EURL**



EUROPEAN UNION REFERENCE LABORATORIES



ACTIVITY	DATE
Publishing the Calendar and Matrix on the Web page.	17th December 2014
Receiving Application Form from invited laboratories.	12th Jan-13th Feb 2015
Specific Protocol published on the Web site.	23 <sup>rd</sup> Feb 2015 at the latest
Sample distribution.	16th March 2015
Deadline for receiving results: Fill in "Results Page"	<b>72 hours after receiving the sample</b>
Preliminary Report: only results, no statistical treatment.	April 2015
Final Report distributed to the Laboratories.	December 2015



## EUPT-FV-SM07- Participants with reported results

COUNTRY	No.	COUNTRY	No.
Austria	1	Italy	9
Belgium	2	Kenia	1
China	1	Latvia	1
Croatia	1	Poland	2
Cyprus	1	Romania	2
Czech Republic	3	Serbia	1
Denmark	1	Slovenia	1
Egypt	1	Spain	13
Estonia	1	Sweden	2
Finland	1	Switzerland	1
France	5	The Netherlands	2
Germany	9	Turkey	1
Greece	2	UK	1
Hungary	4		

**70 Participants**



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

**21 EU/EFTA  
Countries**

**China**  
**Egypt**  
**Kenya**  
**Serbia**  
**Turkey**

**5 Non EU/EFTA  
Countries**

## Pesticides used for the treatment



Carbetamide	Flubendiamide
Chlorothalonil	Imidacloprid
Deltamethrin	Metosulam
Diafenthiuron	Pencycuron
Dicrotophos	Prochloraz
Dinocap	Promecarb
Fluazifop-P-butyl	Spirotetramat



## Pesticides used for the treatment

PESTICIDE	ESTIMATED CONCENTRATION (mg/kg)
Carbetamide	0,085
Chlorothalonil	0,095
Deltamethrin	0,079
Diafenthiuron*	0,012*
Diclotophos	0,056
Dinocap	0,105
Fluazifop-P-butyl	0,122
Flubendiamide	0,147
Imidacloprid	0,108
Metosulam	0,076
Pencycuron	0,061
Prochloraz	0,049
Promecarb	0,023
Spirotetramat	0,060

## Homogeneity

- The homogeneity in the treated sample was studied using the 2006 Harmonised Protocol.



-The sampling standard deviation of all the pesticides must be lower than the critical value.

$$S_{\text{sample}}^2 < c$$

**Spirotetramat did not pass the homogeneity test**

# Stability

## ISO 13528. Annex B



Sub-sample 1



Sub-sample 2

Sub-sample 3

Sub-sample 4



Sub-sample 5

Sub-sample 6



# Stability

## ISO 13528. Annex B

*1<sup>st</sup> Analysis - prior to the sample shipment*

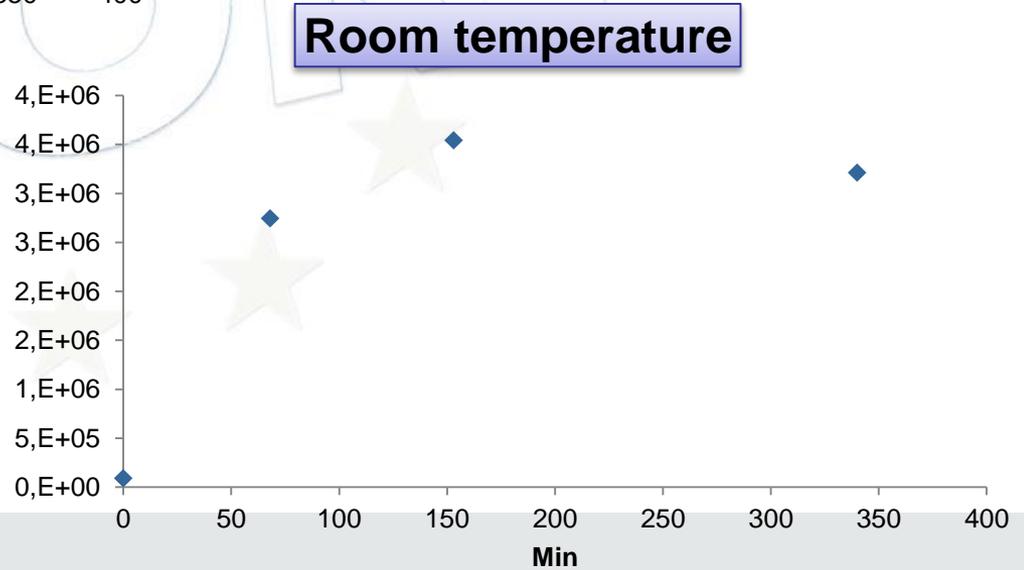
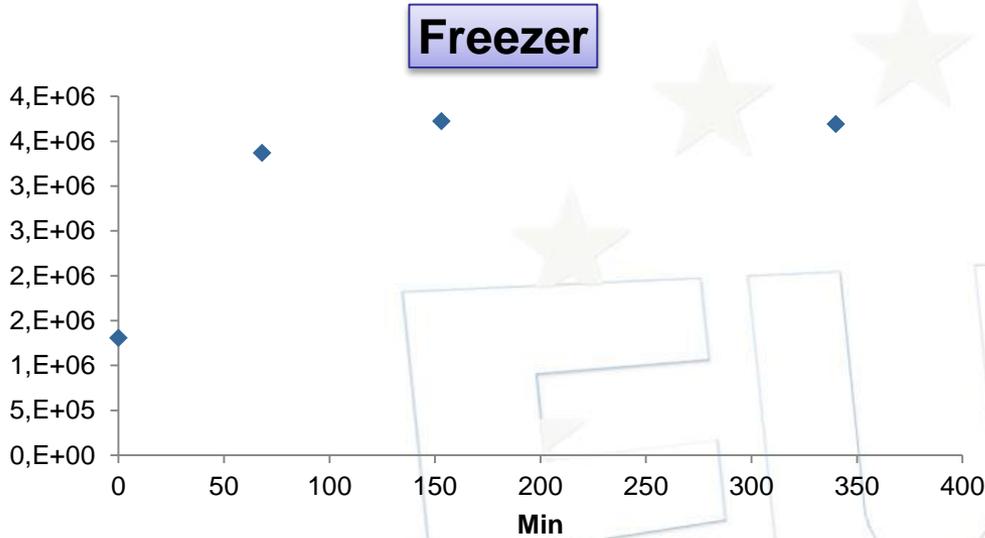
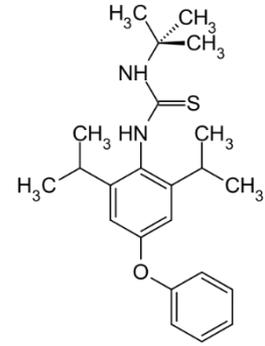
*2<sup>nd</sup> Analysis - after the deadline for reporting results*

*3<sup>rd</sup> Analysis - reproducing the delivery conditions that the samples experienced during 48 hours*

$$|x_1 - y_i| \leq 0.3 \times \sigma$$

**Diafenthiuron didn't pass the stability test**

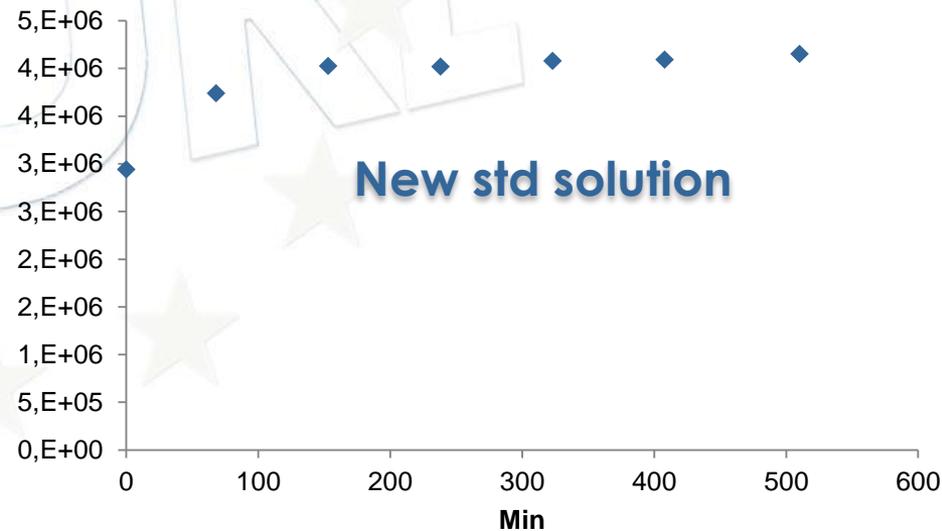
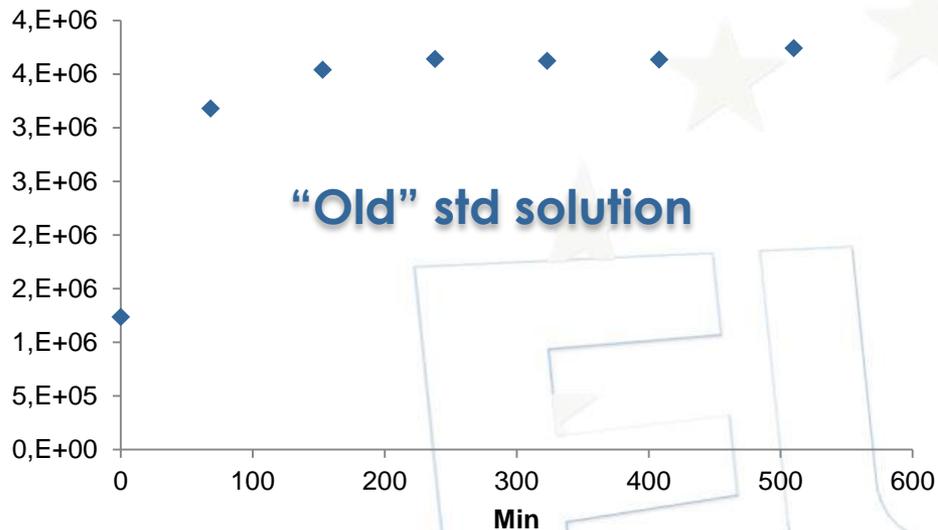
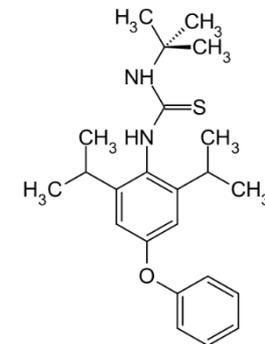
## Std Diafenthiuron in AcN



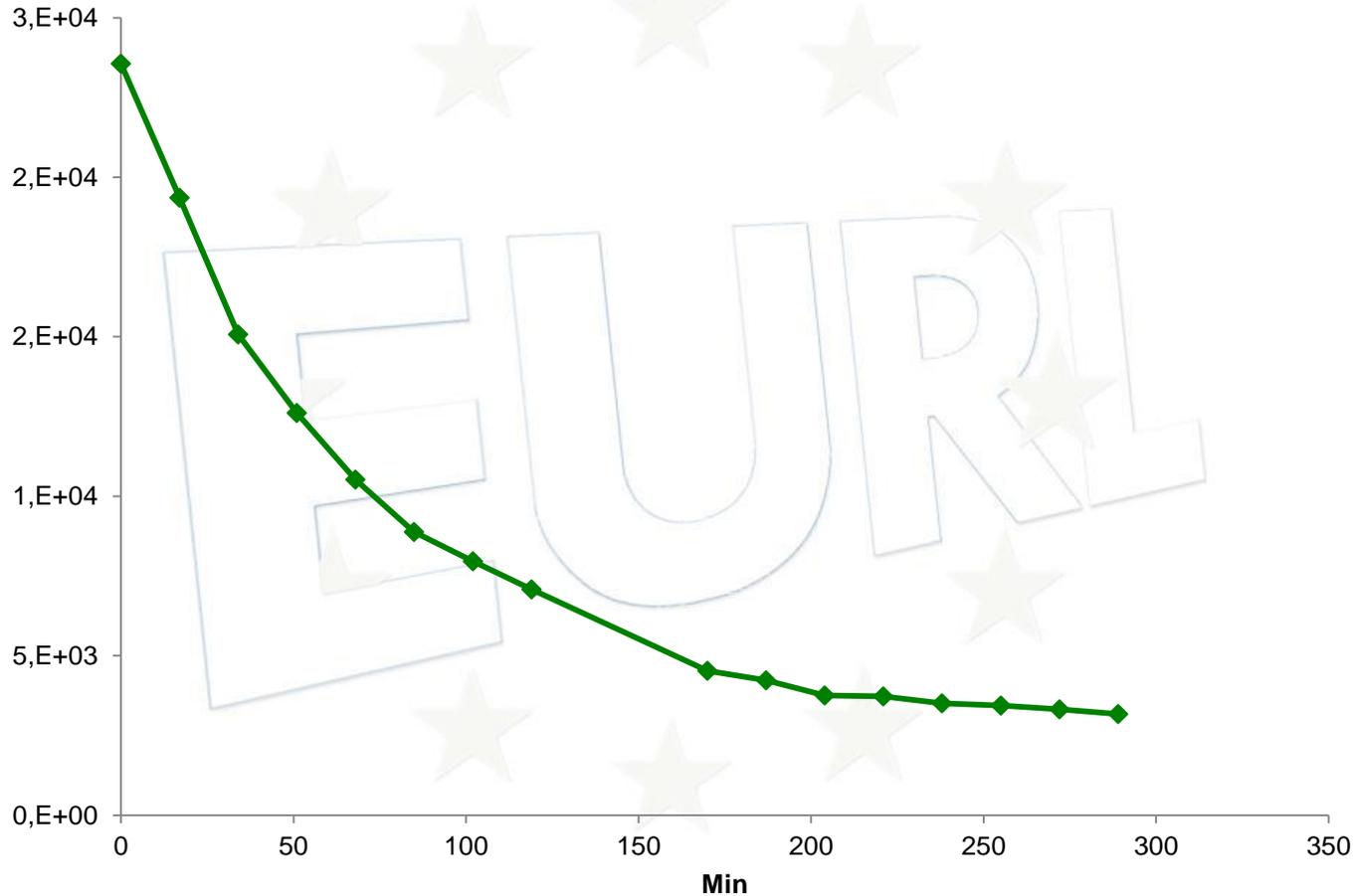
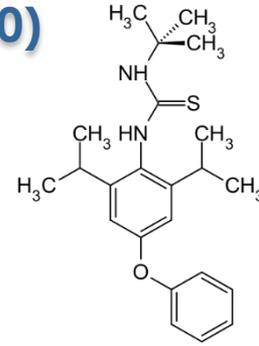


# Diafenthiuron

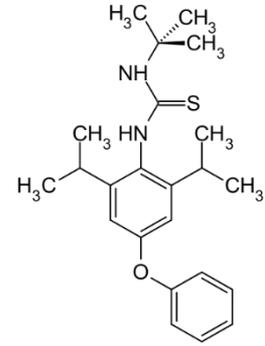
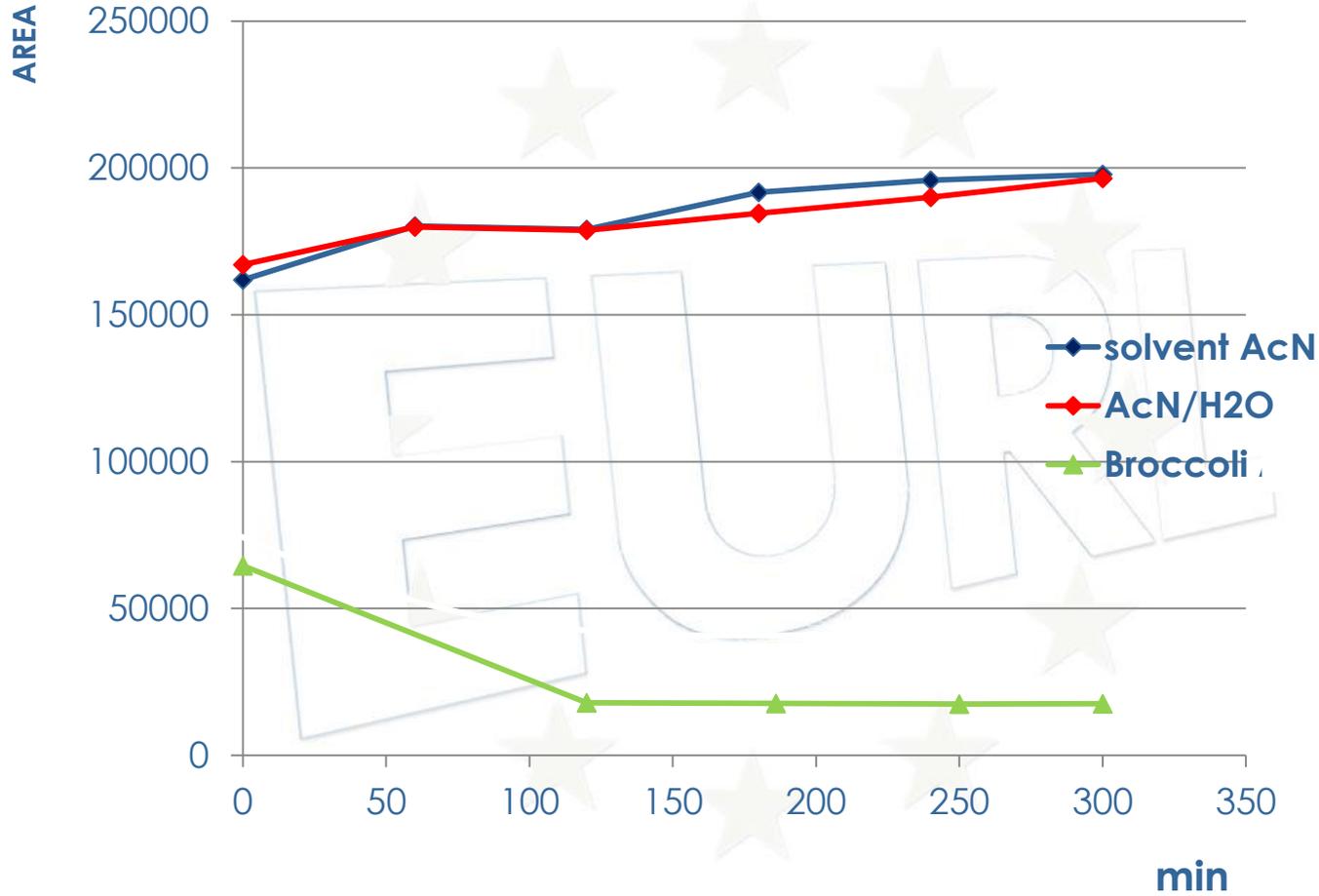
## Std. Diafenthiuron (AcN:Water,20:80)



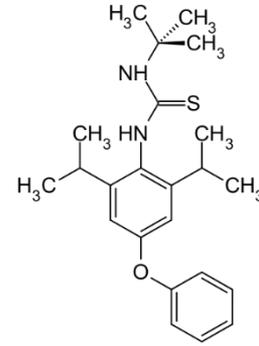
## Std Diafenthiuron in Broccoli extract dilx5 (AcN:Water,20:80)



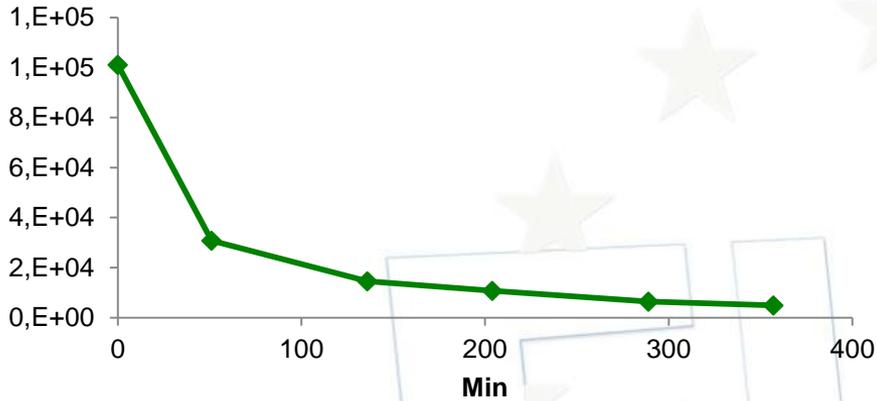
# Diafenthiuron



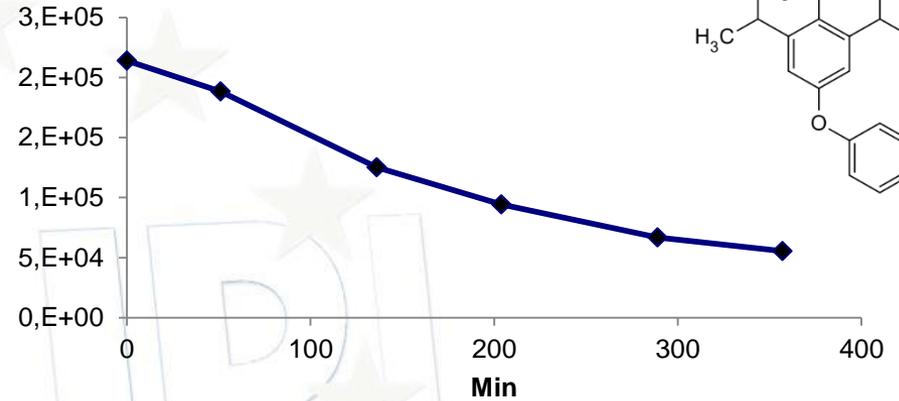
## Std Diafenthiuron different matrices dilx5



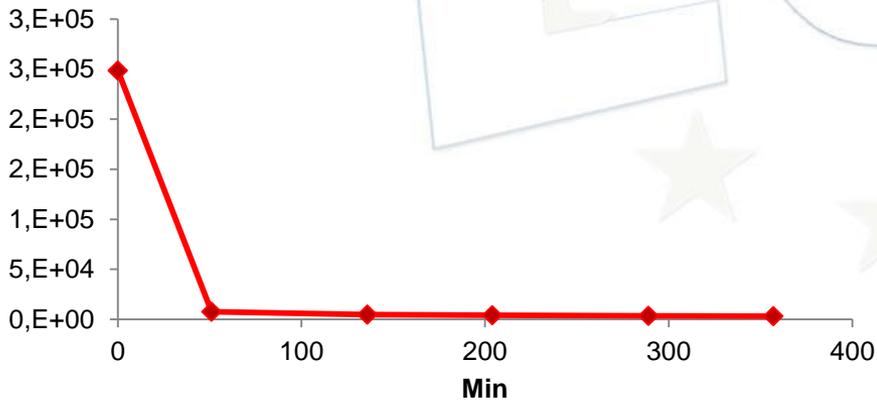
### Broccoli



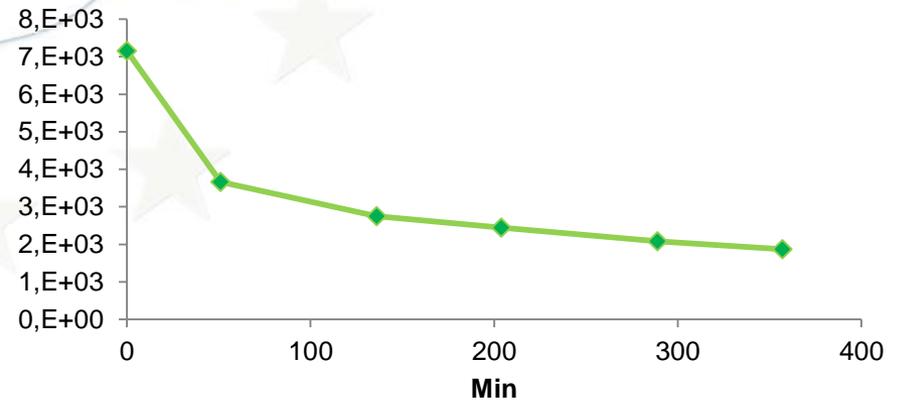
### Leek



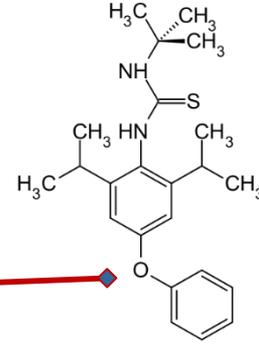
### Tomato



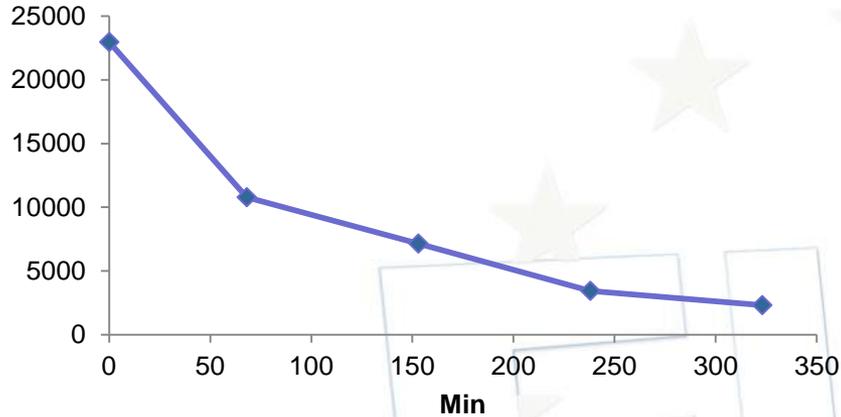
### Green Peeper



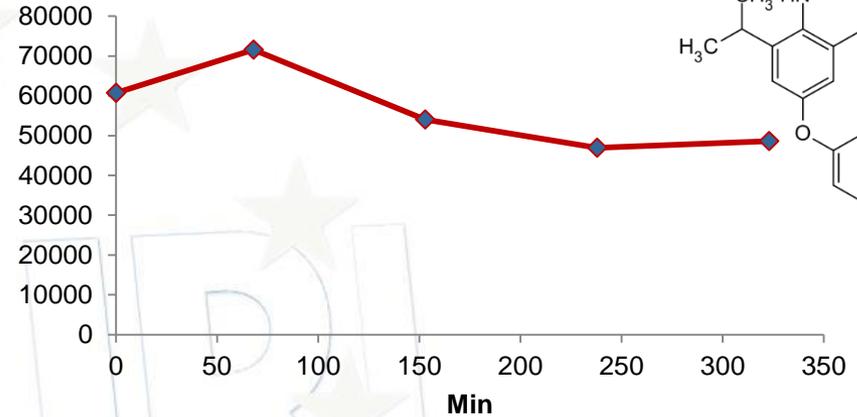
## Std Diafenthiuron in broccoli dilx5 at different pH



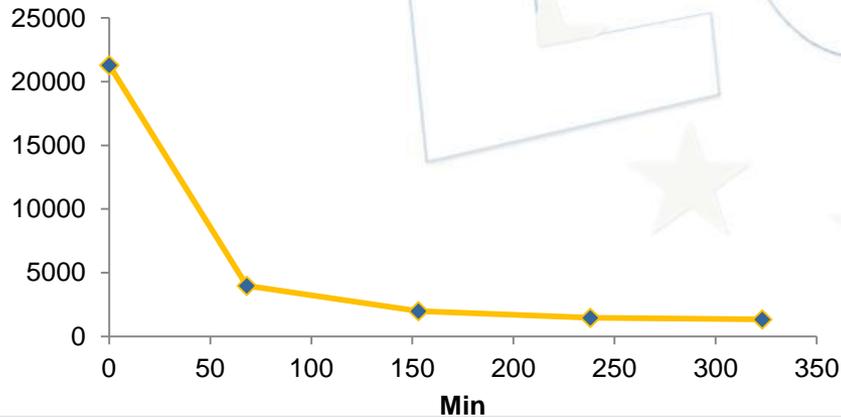
**pH5**



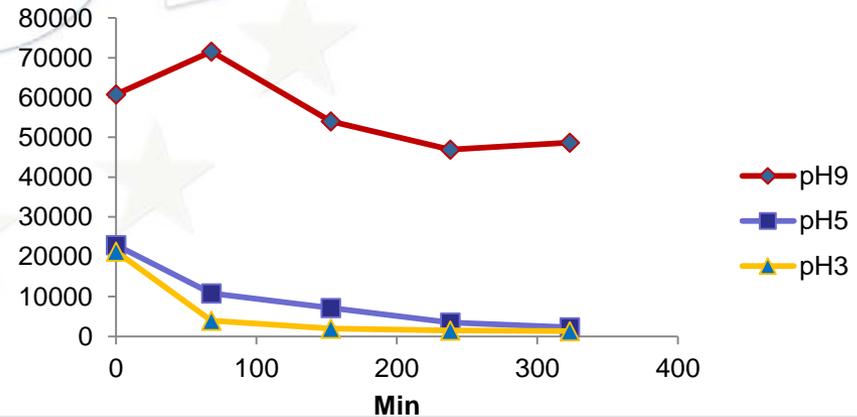
**pH9**



**pH3**

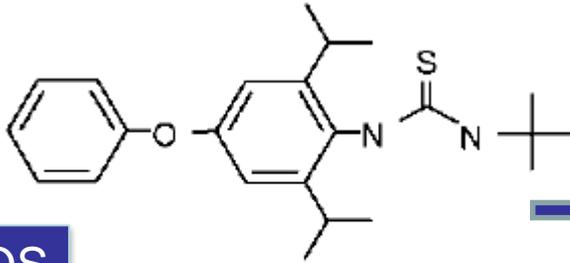


**Comparison pH3, 5 and 9**



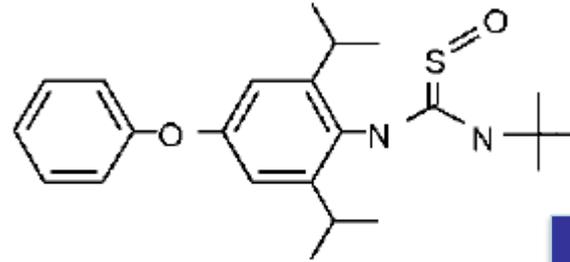
◆ pH9  
■ pH5  
▲ pH3

# Diafenthiuron



$C_{23}H_{32}N_2OS$   
385.2308

Diafenthiuron (I)

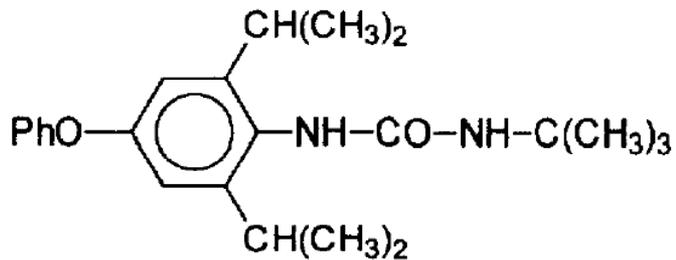


$C_{23}H_{32}N_2O_2S$   
401.2257

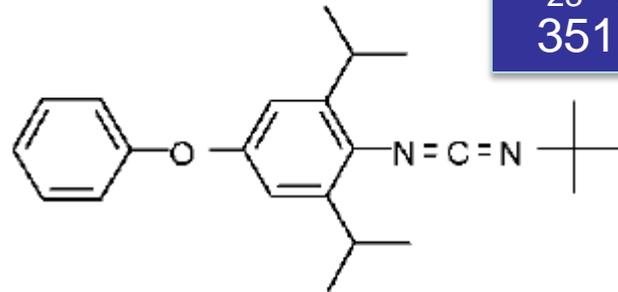
Sulfomonoxide (IV)



$C_{23}H_{32}N_2O_2$   
369.2536



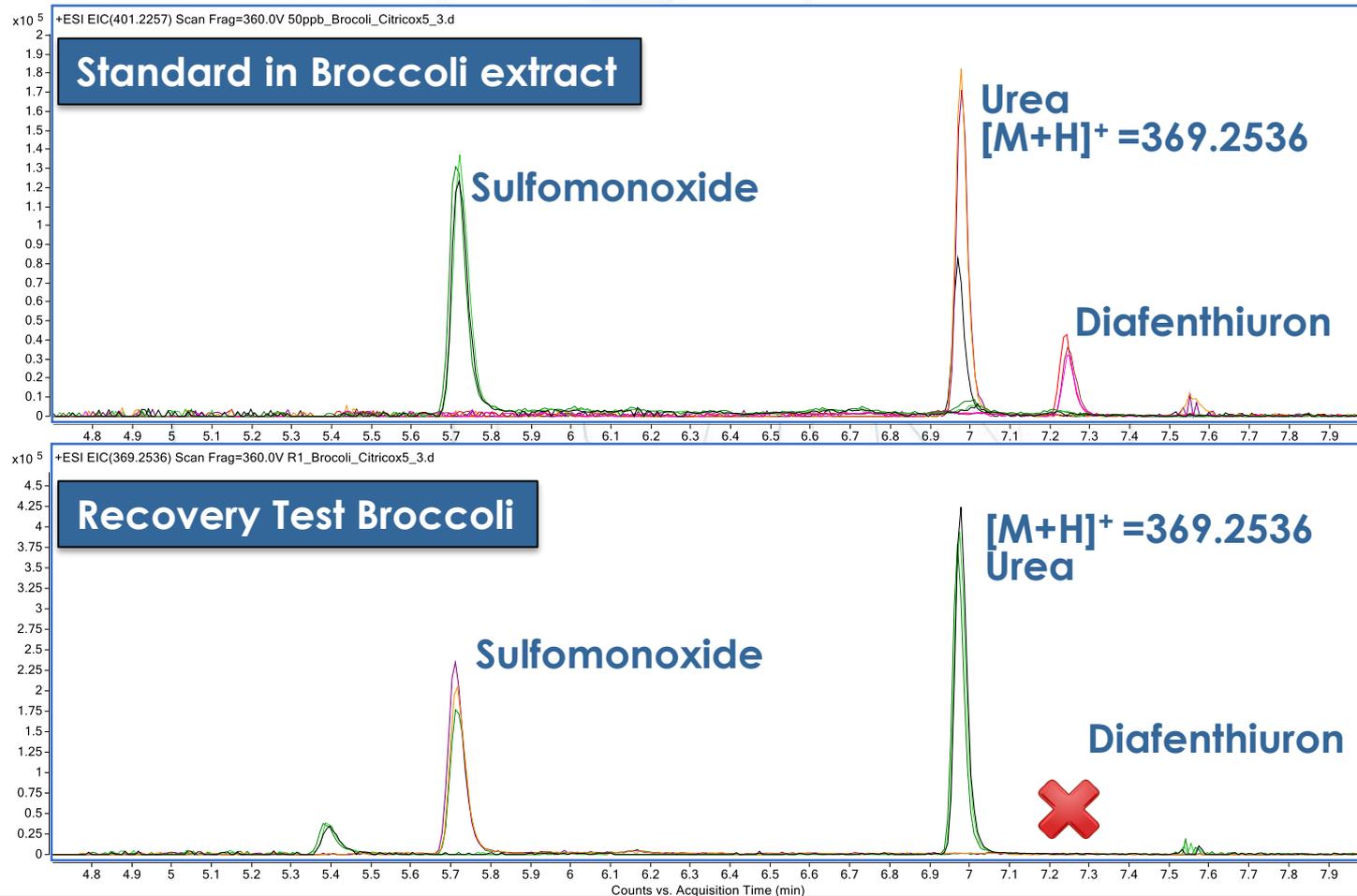
urea



Carbodiimide (II)

$C_{23}H_{30}N_2O_2$   
351.2430

## LC-Q-TOF-MS





# RESULTS

EURL

# Results

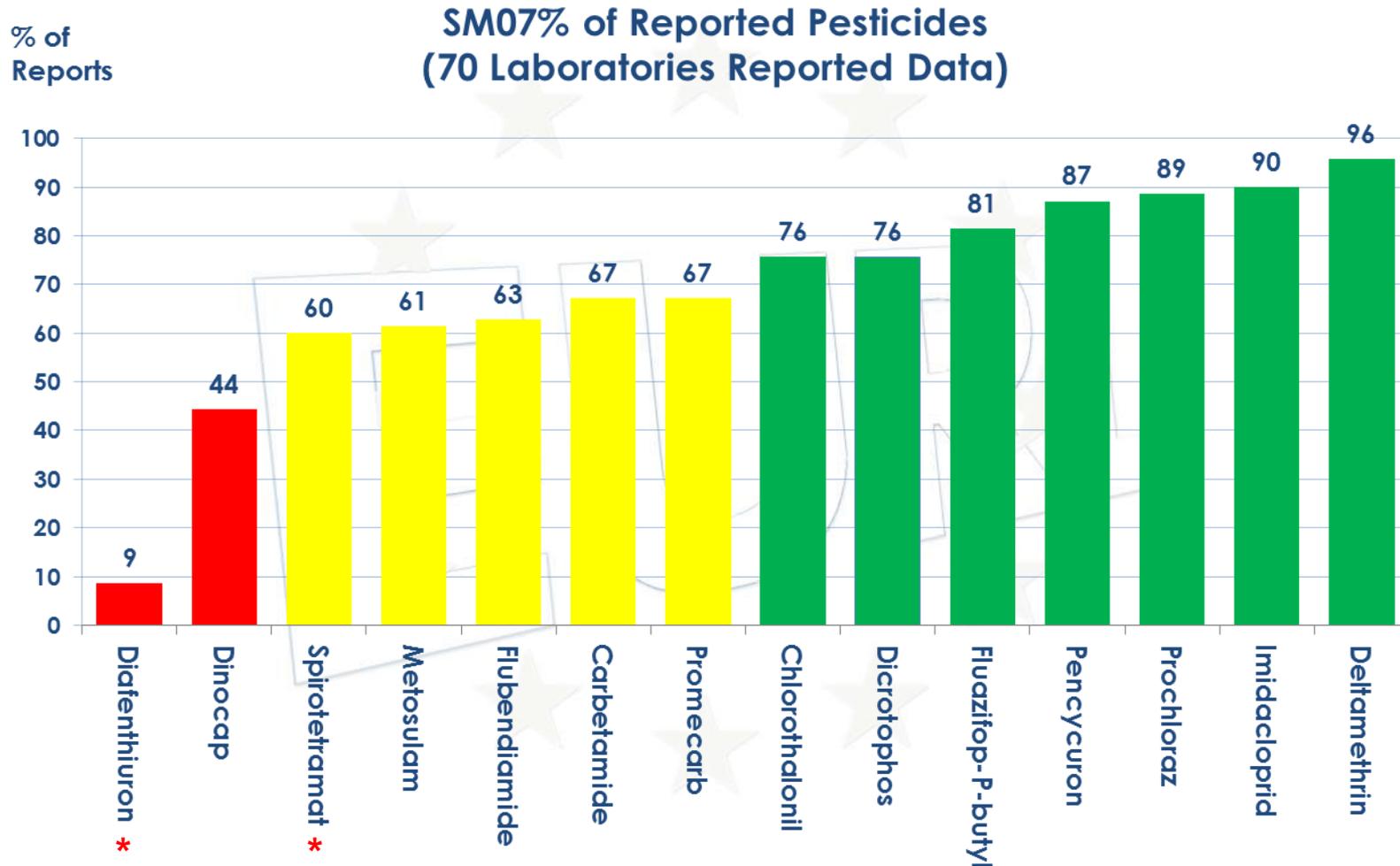
14 Evaluated Pesticides  
70 Laboratories

14 Pesticides = 2+5+7

	Carbetamide	Chlorothalonil	Deltamethrin	Diafenthiuron*	Dicrotophos	Dinocap	Fluazifop-P-butyl	Flubendiamide	Imidacloprid	Metosulam	Pencycuron	Prochloraz	Promecarb	Spirotetramat*
Total Number of Reported Pesticides	47	53	67	6	53	31	57	44	63	43	61	62	47	42
% of Reported Pesticides	67	76	96	9	76	44	81	63	90	61	87	89	67	60

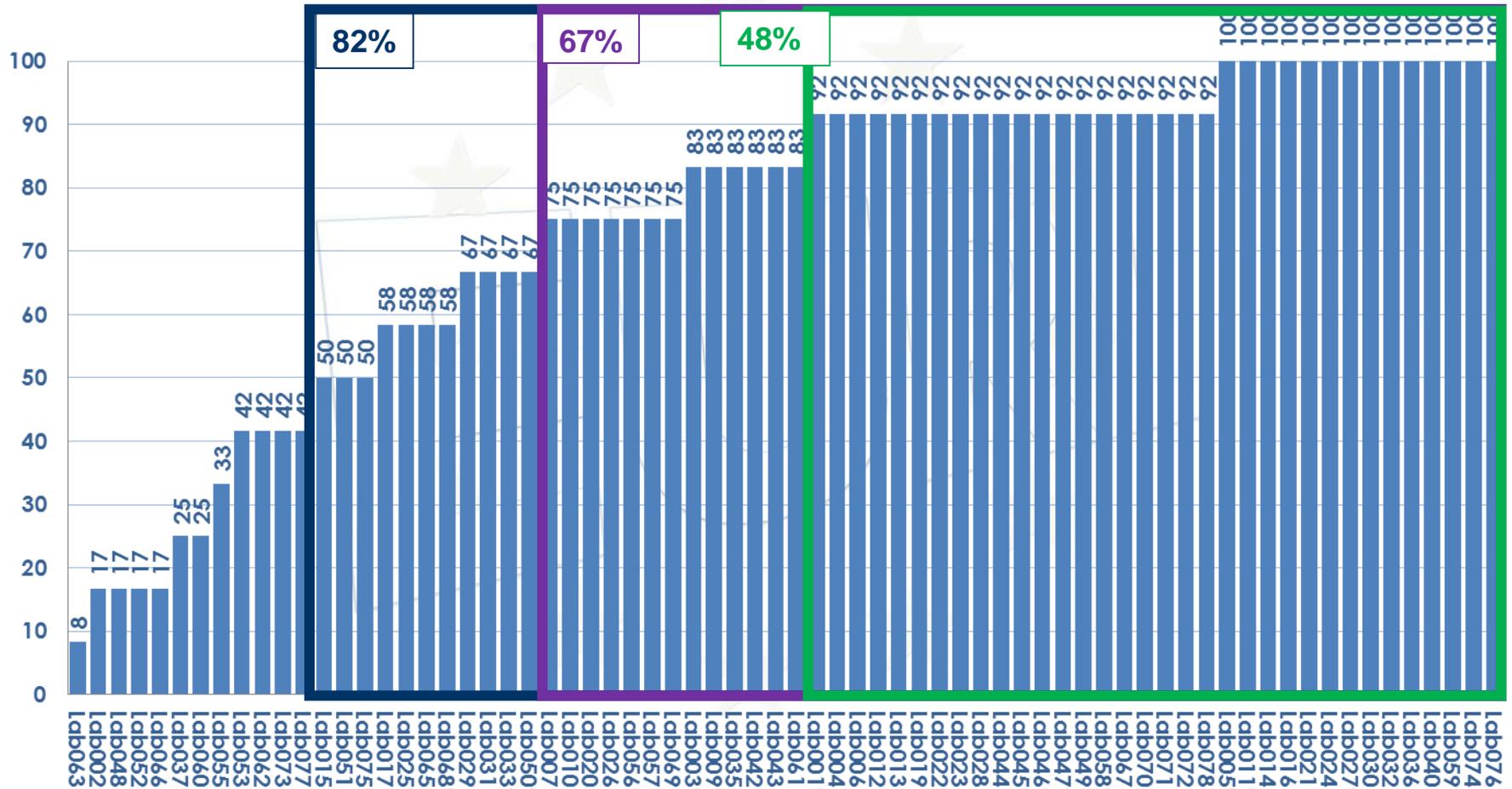
\* Only for informative purposes, not for evaluation

# Results



\* Only for informative purposes, not for evaluation

## SM07 % of Reported Pesticides (12 Pesticides 70 Laboratories)

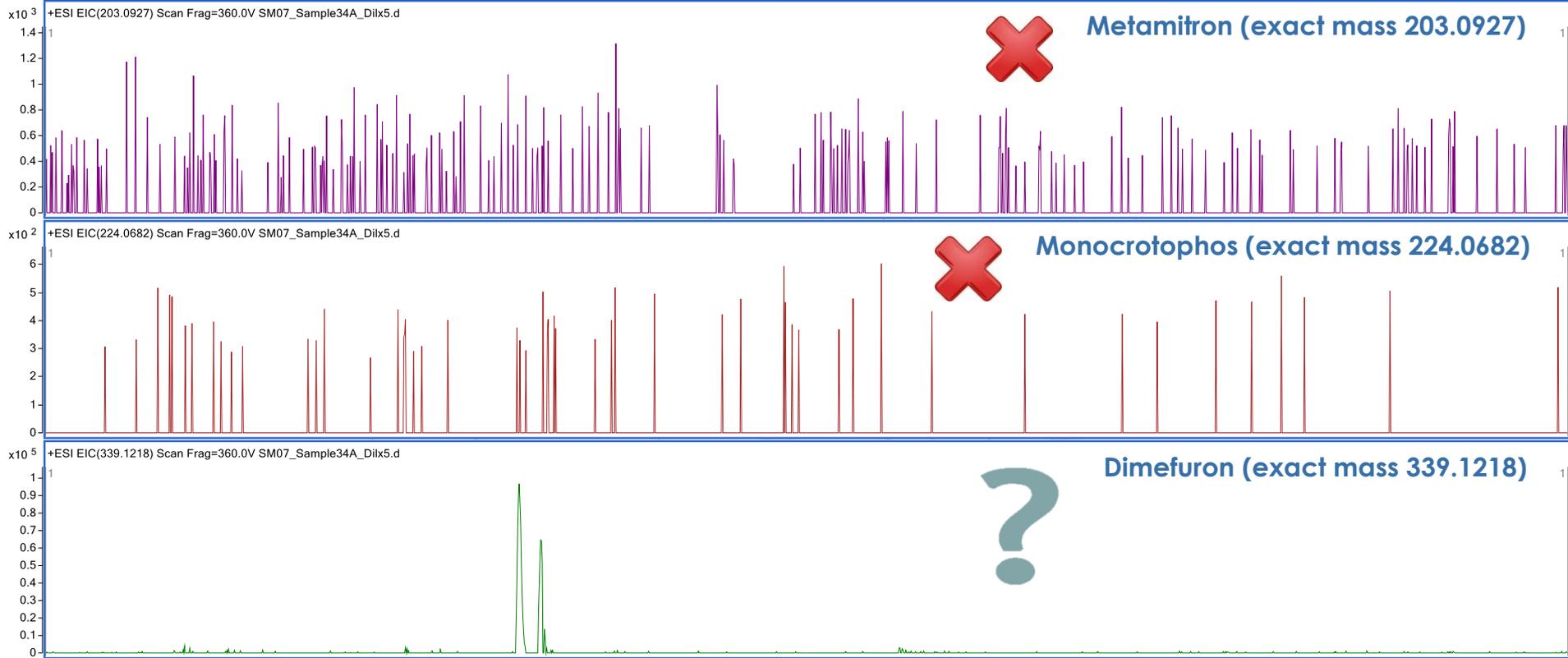


## Results

Pesticides reported by 3 or more laboratories :

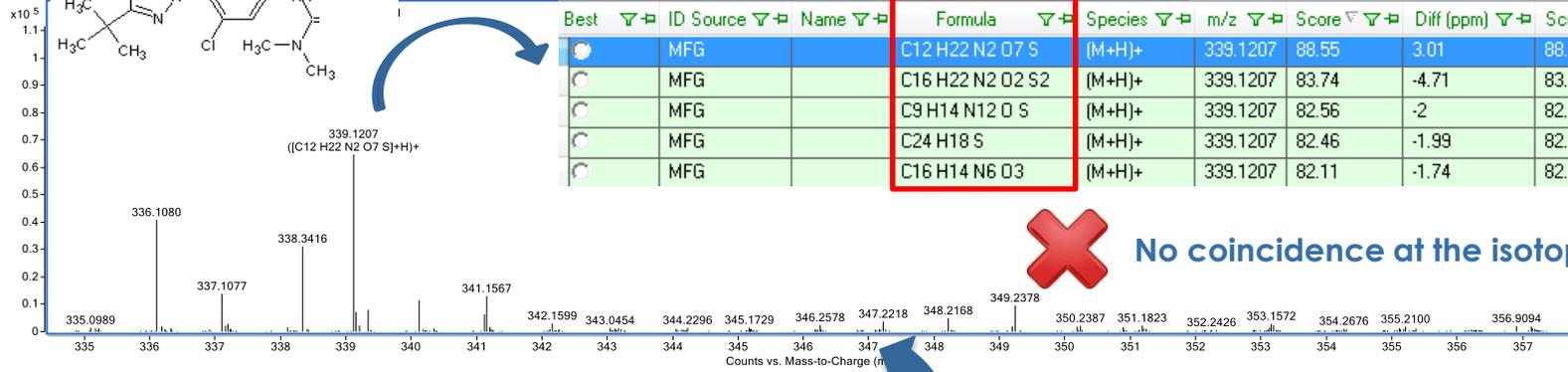
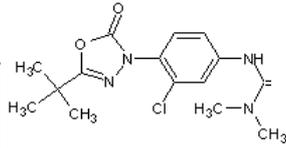
- 
- Dimefuron
  - Metamitron
  - Monochrotofos

## Sample 34 SM07 analysed by LC-QToF-MS



# Dimefuron

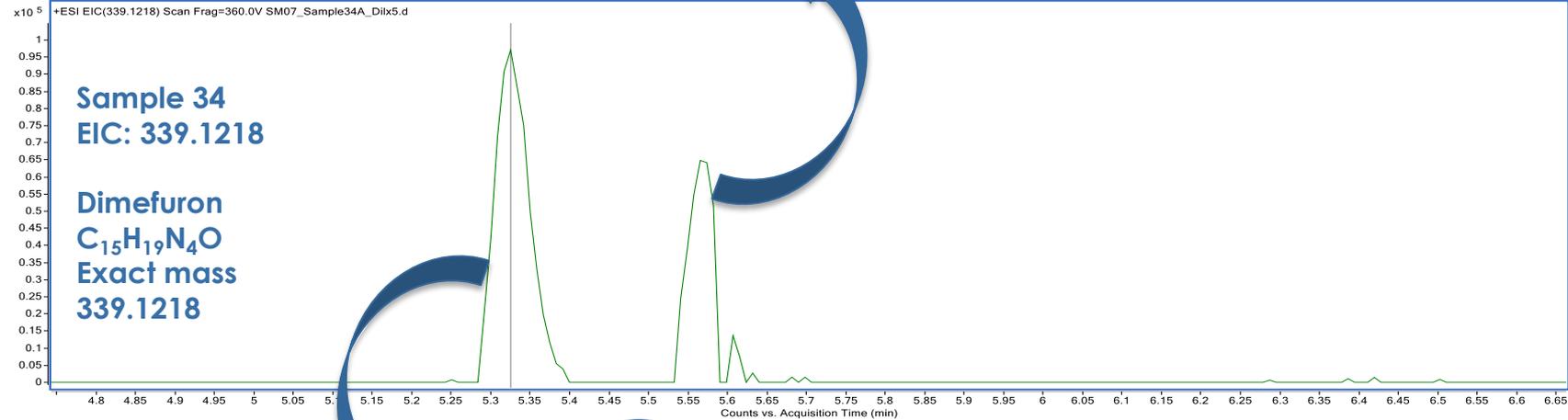
Dimefuron



Best	ID Source	Name	Formula	Species	m/z	Score	Diff (ppm)	Score (MFG)
●	MFG		C12H22N2O7S	(M+H) <sup>+</sup>	339.1207	88.55	3.01	88.55
○	MFG		C16H22N2O2S2	(M+H) <sup>+</sup>	339.1207	83.74	-4.71	83.74
○	MFG		C9H14N12O5	(M+H) <sup>+</sup>	339.1207	82.56	-2	82.56
○	MFG		C24H18S	(M+H) <sup>+</sup>	339.1207	82.46	-1.99	82.46
○	MFG		C16H14N6O3	(M+H) <sup>+</sup>	339.1207	82.11	-1.74	82.11

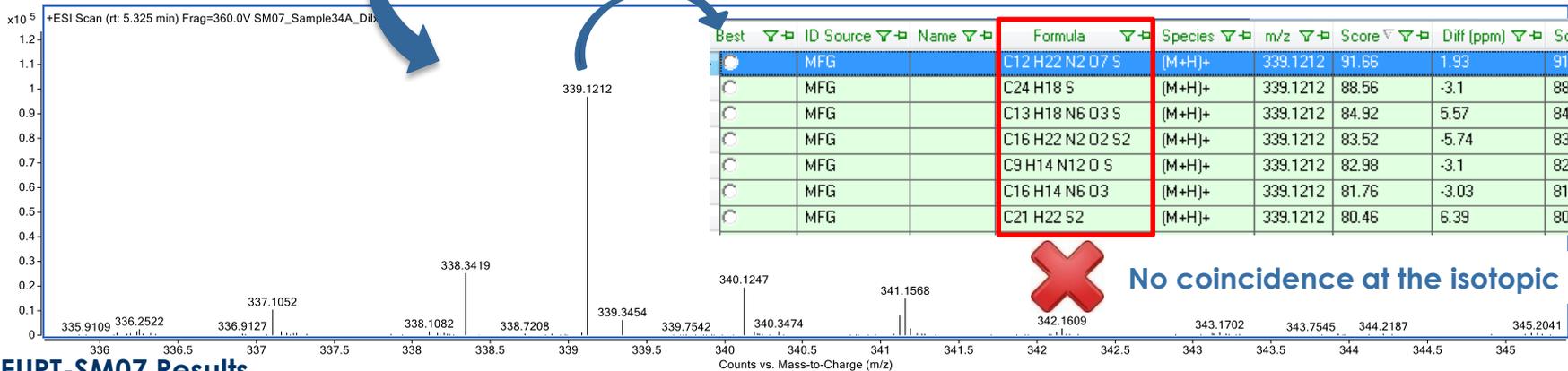


No coincidence at the isotopic pattern



Sample 34  
EIC: 339.1218

Dimefuron  
C<sub>15</sub>H<sub>19</sub>N<sub>4</sub>O  
Exact mass  
339.1218

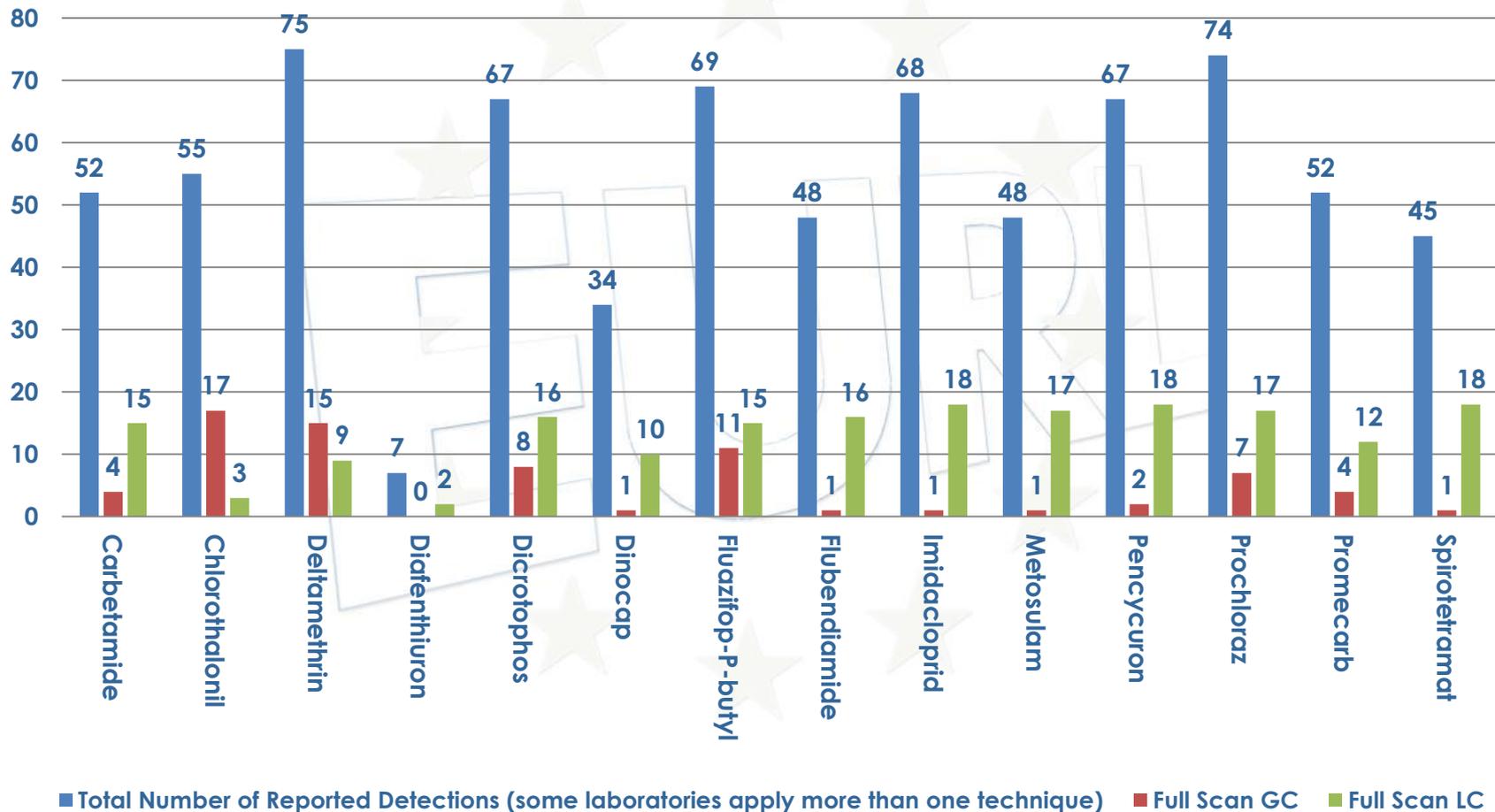


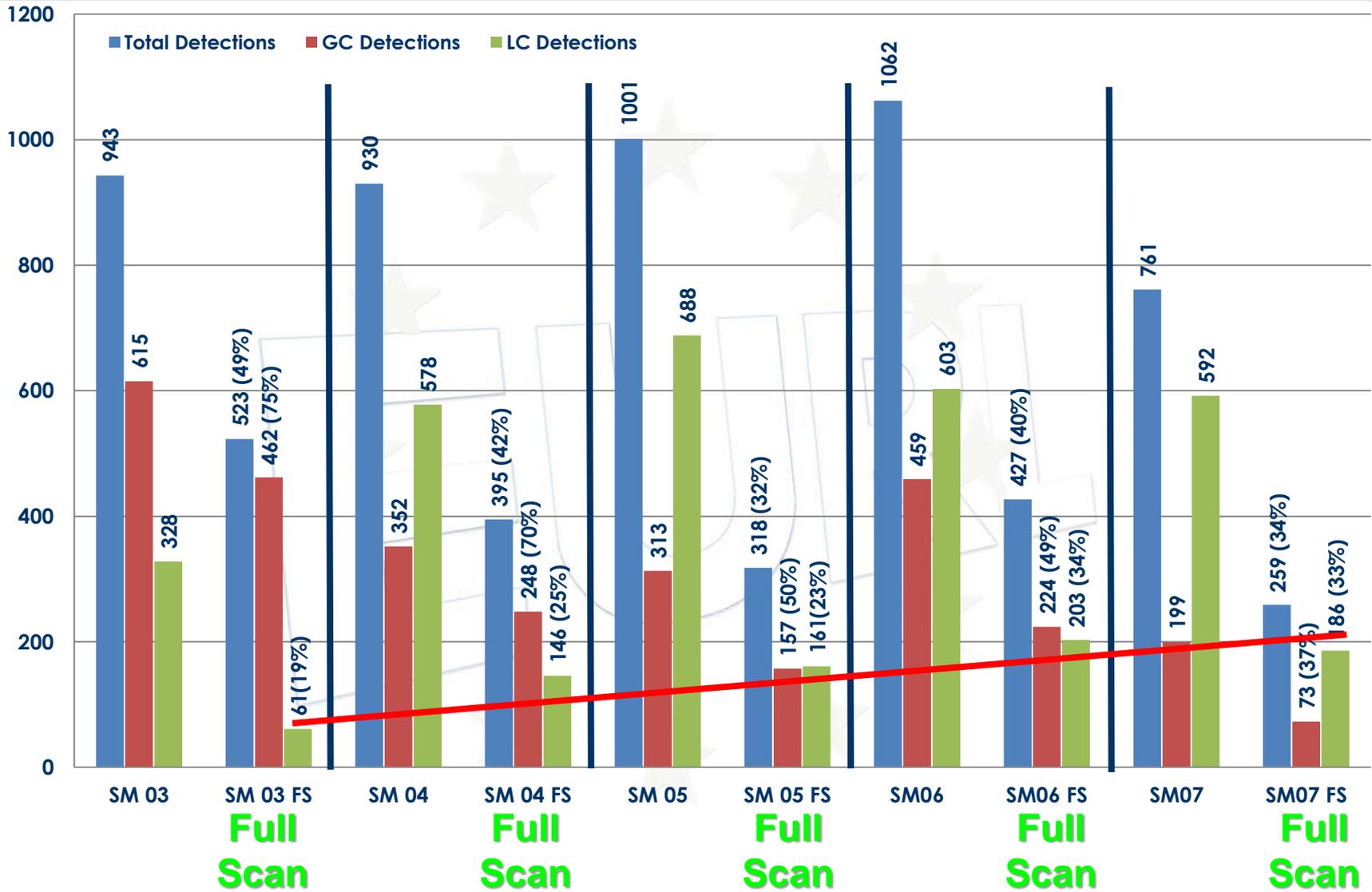
Best	ID Source	Name	Formula	Species	m/z	Score	Diff (ppm)	Score (MFG)
●	MFG		C12H22N2O7S	(M+H) <sup>+</sup>	339.1212	91.66	1.93	91.66
○	MFG		C24H18S	(M+H) <sup>+</sup>	339.1212	88.56	-3.1	88.56
○	MFG		C13H18N6O3S	(M+H) <sup>+</sup>	339.1212	84.92	5.57	84.92
○	MFG		C16H22N2O2S2	(M+H) <sup>+</sup>	339.1212	83.52	-5.74	83.52
○	MFG		C9H14N12O5	(M+H) <sup>+</sup>	339.1212	82.98	-3.1	82.98
○	MFG		C16H14N6O3	(M+H) <sup>+</sup>	339.1212	81.76	-3.03	81.76
○	MFG		C21H22S2	(M+H) <sup>+</sup>	339.1212	80.46	6.39	80.46



No coincidence at the isotopic pattern

# Analytical Techniques





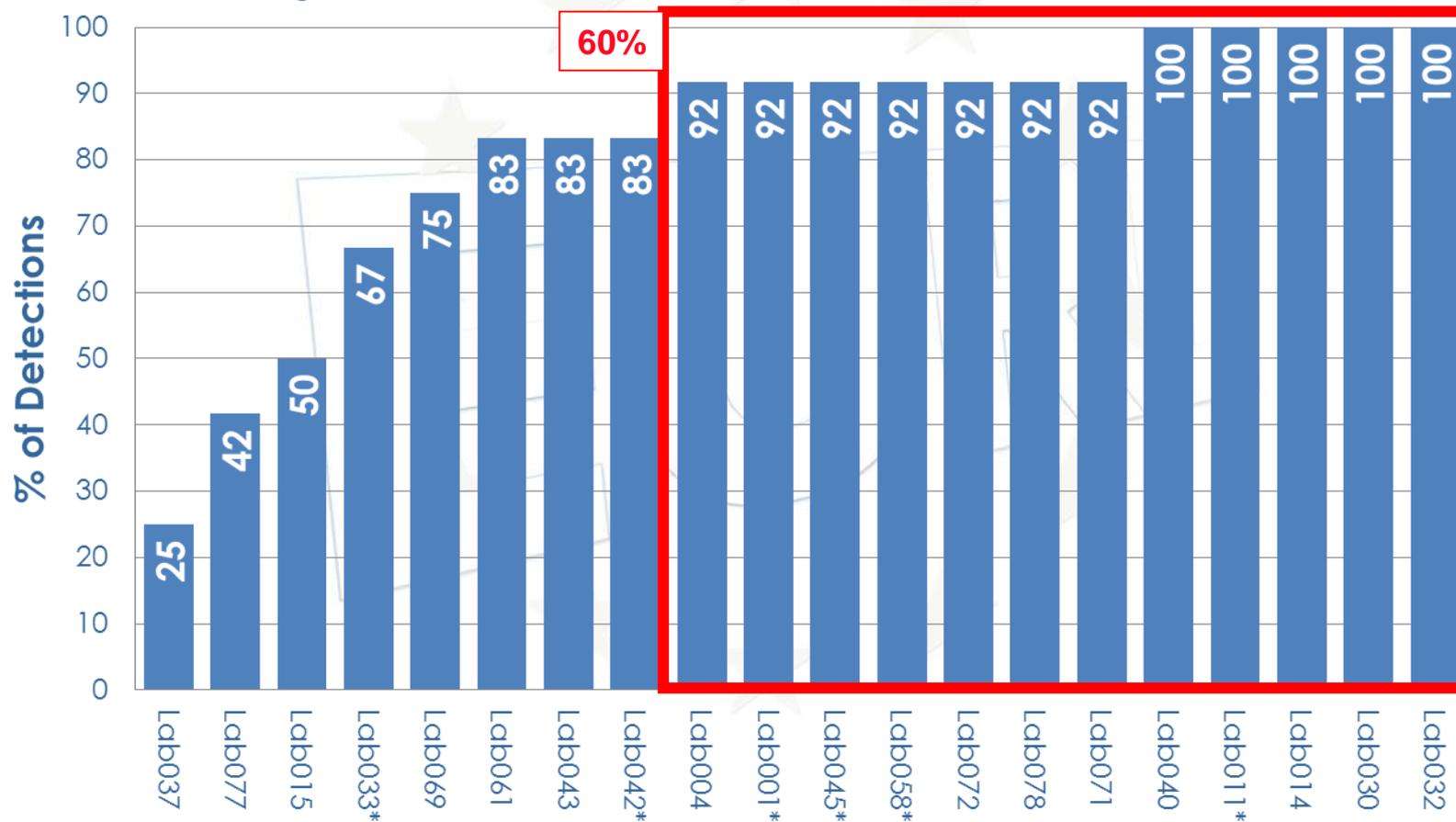


# Laboratories Using

## Accurate Mass

Total Laboratories=70  
Using Accurate Mass=20  
Not Using Accurate Mas=50

Using Accurate Mas=20  
≥ 90% Detections=12



LAB. CODE	Total Detections	GC Detections	LC Detections	Total Full Scan	GC Full Scan	LC Full Scan
Lab001*	12	2	10	2	2	10
Lab002	2	0	0	6	2	0
Lab003*	12	6	6	6	5	1
Lab004	16	?	?	?	?	?
Lab005*	13	?	?	12	2	10
Lab006	12	10	0	10	5	5
Lab007	10	0	0	0	0	0
Lab009*	10	0	0	0	0	0
Lab010	11	0	0	0	0	0
Lab011*	13	6	7	6	5	1
Lab012	11	2	9	2	3	0
Lab013	12	3	9	12	0	12
Lab014	25	6	19	6	0	0
Lab015	6	0	6	0	0	0
Lab016	22	7	15	0	0	0
Lab017	7	0	7	0	0	0
Lab019	12	11	1	0	0	0
Lab020	11	0	11	0	0	0
Lab021	14	0	14	0	0	0
Lab022*	12	0	12	0	0	0
Lab023	14	?	?	?	?	?
Lab024	13	10	3	0	0	0
Lab025*	7	0	7	0	0	0
Lab026	10	0	10	0	0	0
Lab027*	13	0	13	0	0	0
Lab028	9	0	9	0	0	0
Lab029	24	0	24	11	0	13
Lab030	8	0	8	0	0	0
Lab031	13	0	13	0	0	0
Lab032	14	0	14	6	0	8
Lab033*	12	0	12	0	0	0
Lab035	20	11	9	11	0	0
Lab036	13	0	13	0	0	0
Lab037	5	0	5	2	1	0
Lab040	12	0	12	3	0	0
Lab042*	22	0	22	0	0	0
Lab043	11	0	11	0	0	0
Lab044	11	0	11	0	0	0
Lab045*	12	0	12	0	0	0
Lab046*	20	0	20	0	0	0
Lab047	11	0	11	0	0	0
Lab048	2	0	2	0	0	0
Lab049	12	0	12	0	0	0
Lab050*	8	0	8	0	0	0
Lab051	7	0	7	0	0	0
Lab052	2	0	2	7	2	0
Lab053	5	0	5	2	0	0
Lab055	4	0	4	2	0	0
Lab056*	11	0	11	0	0	0
Lab057	10	0	10	0	0	0
Lab058*	12	0	12	9	0	0
Lab059	14	0	14	0	0	0
Lab060	4	0	4	0	0	0
Lab061	10	3	7	3	1	0
Lab062	5	1	4	1	1	0
Lab063	1	3	0	3	2	0
Lab065	7	2	5	2	12	0
Lab066	2	0	2	0	0	0
Lab067	12	0	12	0	0	0
Lab068*	9	0	9	0	0	0
Lab069	10	7	3	0	0	0
Lab070	12	0	12	0	0	0
Lab071	13	0	13	11	0	0
Lab072	24	0	24	0	0	0
Lab073	5	0	5	13	11	0
Lab074	13	3	10	13	0	0
Lab075*	6	6	0	0	0	0
Lab076	13	0	13	0	0	0
Lab077	5	2	3	0	0	0
Lab078	12	1	11	0	0	11

**EUPT-FV-SM07**  
European Proficiency Test FV-SM07

**Total Detections: 761**  
**Total Full Scan: 259**  
**(34% of the Total)**

**GC Detections: 199**  
**GC Full Scan: 73**  
**(37% of the Full Scan)**

**LC Detections: 562**  
**LC Full Scan: 186**  
**(33% of the Full Scan)**



**EUPT-FV-FH01**  
European Proficiency Test FV-FH01

# EUPT-FH01

# Coriander leaves



# Participation

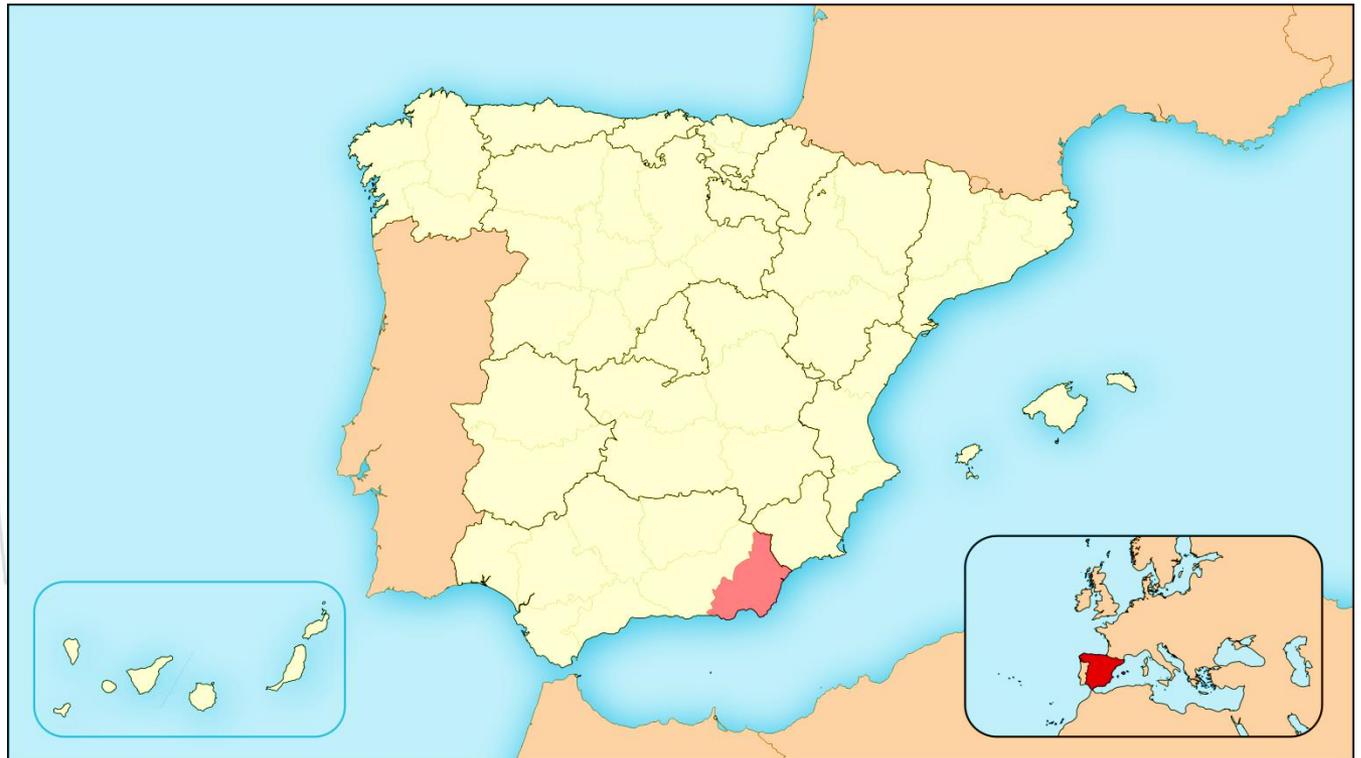
**65 Laboratories**

**26 Countries**

**22 EU/EFTA MS**  
**4 Other countries**

Austria	1	Israel	1
Belgium	4	Italy	9
Costa Rica	1	Luxembourg	1
Croatia	1	Malta	2
Czech Republic	2	Norway	1
Egypt	1	Latvia	1
Estonia	1	Poland	1
Finland	2	Slovakia	1
France	3	Spain	13
Germany	10	Sweden	2
Greece	2	Thailand	1
Hungary	3	The Netherlands	1
Iceland	1	United Kingdom	2

Organic coriander was grown in a greenhouse in Almería. Spain.



## Preparation of the test item





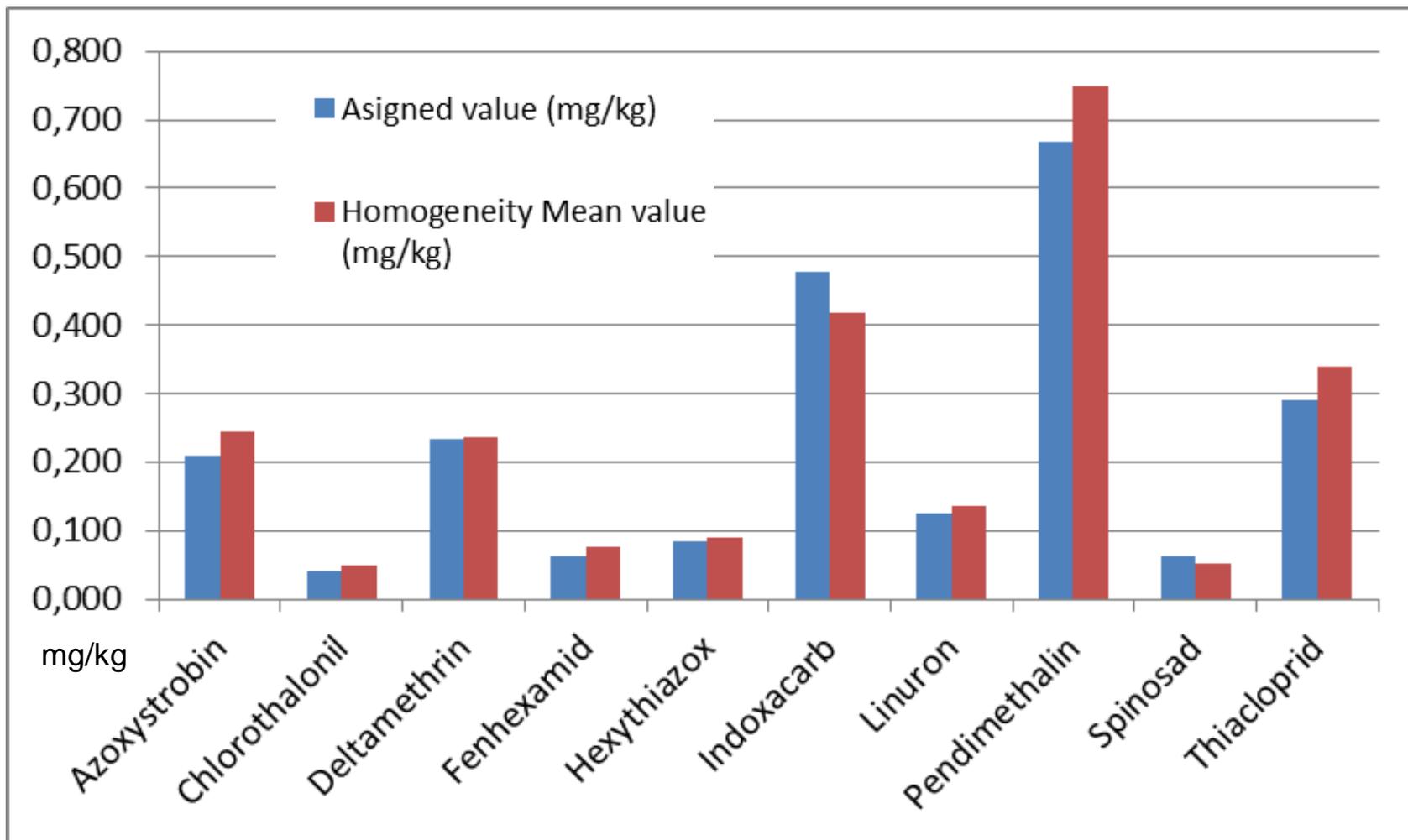
# Homogeneity

The homogeneity in the treated sample was studied using the 2006 Harmonised Protocol.

**All the pesticides passed the homogeneity test**



# Homogeneity



## Stability

*1<sup>st</sup> Analysis - prior to the sample shipment*

*2<sup>nd</sup> Analysis - after the deadline for reporting results*

*3<sup>rd</sup> Analysis - reproducing the delivery conditions that the samples experienced during 48 hours*

**All the pesticides passed the stability test**

# Target List

## 175 pesticides

Clofentezine	Fenarimol	Lambda-Cyhalothrin	Phosmet oxon
3-hydroxy-carbofuran	Fenazaquin	Linuron	Phoxim
Acephate	Fenbuconazole	Lufenuron	Pirimicarb
Acetamiprid	Fenhexamid	Malaoxon	Pirimiphos-methyl
Acrinathrin	Fenitrothion	Malathion	Prochloraz
Aldicarb	Fenoxycarb	Mepanipyrim	Procymidone
Aldicarb Sulfone	Fenpropathrin	<b>Metaflumizone*</b>	Profenofos
Aldicarb Sulfoxide	Fenpropimorph	Metalaxyl and metalaxyl-M	Propargite
Amitraz	Fenthion	Metconazole	Propiconazole
Azinphos-methyl	Fenthion oxon	Methamidophos	Propyzamide
Azoxystrobin	Fenthion oxon sulfone	Methidathion	Prothioconazole
Benfuracarb	Fenthion oxon sulfoxide	Methiocarb	Prothiofos
Bifenthrin	Fenthion sulfone	Methiocarb sulfone	Pyraclostrobin
Bitertanol	Fenthion sulfoxide	Methiocarb sulfoxide	Pyridaben
Boscalid	Fipronil	Methomyl	Pyrimethanil
Bromopropylate	Fludioxonil	Methoxyfenozide	Pyriproxyfen
Bromuconazole	Flufenoxuron	Monocrotophos	Quinoxifen
Bupirimate	<b>Fluopicolide*</b>	Myclobutanil	Spinosad
Buprofezin	Fluquinconazole	Omethoate	Spirodiclofen
<b>Cadusafos*</b>	Flusilazole	Orthophenylphenol	Spiroxamine
Captan	<b>Flutolanil*</b>	Oxadixyl	Tau-Fluvalinate
Carbaryl	Flutriafol	Oxamyl	Tebuconazole
Carbendazim	Folpet	Oxydemeton-methyl	Tebufenozide
Carbofuran	Fosthiazate	Paclobutrazole	Tebufenpyrad
Carbosulfan	Hexaconazole	Paraoxon-methyl	Teflubenzuron
Chlorfenapyr	Hexythiazox	Parathion-ethyl	Tefluthrin
Chlorfenvinphos	Imazalil	Parathion-methyl	Tetraconazole
<b>Chlorobenzilate*</b>	Imidacloprid	Penconazole	Tetradifon
Chlorothalonil	Indoxacarb	Pencycuron	Thiabendazole
Chlorpropham	Iprodione	Pendimethalin	Thiacloprid
Chlorpyrifos	Iprovalicarb	Phenthoate	Thiamethoxam
Chlorpyrifos-methyl	Isofenphos-methyl	Phosalone	Thiodicarb
	Kresoxim-methyl	Phosmet	<b>*Not in the coordinated multiannual control programme</b>

# Pesticides used for the treatment

<b>Azoxystrobin</b>	<b>Indoxacarb</b>
<b>Boscalid</b>	<b>Linuron</b>
<b>Chlorothalonil</b>	<b>Pendimethalin</b>
<b>Deltamethrin</b>	<b>Pirimicarb</b>
<b>Fenhexamid</b>	<b>Spinosad</b>
<b>Hexythiazox</b>	<b>Thiacloprid</b>

## ALL INCLUDED IN MACP

COMMISSION IMPLEMENTING REGULATION (EU)  
No 400/2014 of 22 April 2014  
concerning a coordinated multiannual control programme of the Union for 2015, 2016 and 2017 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin .

## Calendar

ACTIVITY	DATE
Publishing the Target Pesticide List, Calendar and Matrix on the Web page.	9 <sup>th</sup> December 2014
Opening Registration period	10 <sup>th</sup> December 2014
Deadline for receiving Application Form from laboratories.	12 <sup>th</sup> January 2015
Sample distribution.	9 <sup>th</sup> February 2015
Deadline for receiving results	2 <sup>nd</sup> March 2015
Preliminary Report: only results, no statistical treatment.	End of March 2015
Preliminary Report with statistical treatment.	April 2015
Final Report	October 2015

# Results

## Assigned values

	Robust Mean X* (mg/kg)	CVs*(%)
Azoxystrobin	0.208	21.2
<b>Boscalid*</b>	<b>0.010</b>	<b>25.0</b>
Chlorothalonil	0.041	40.8
Deltamethrin	0.233	29.5
Fenhexamid	0.063	18.5
Hexythiazox	0.084	27.1
Indoxacarb	0.478	20.0
Linuron	0.125	24.8
Pendimethalin	0.668	20.9
<b>Pirimicarb*</b>	<b>0.030</b>	<b>19.9</b>
<b>Pirimicarb desmethyl*</b>	<b>0.023</b>	<b>18.4</b>
Spinosad	0.063	30.2
Thiacloprid	0.290	22.3

\* Assigned value < 4xMRRL

MRRL = 0.010 mg/kg

# Assigned values

0.010-0.100 mg/kg

	Robust Mean X* (mg/kg)
Boscalid	0.010
Desmethyl-pirimicarb	0.023
Pirimicarb	0.030
Chlorothalonil	0.041
Spinosad	0.063
Fenhexamid	0.063
Hexythiazox	0.084
Linuron	0.125
Azoxystrobin	0.208
Deltamethrin	0.233
Thiacloprid	0.290
Indoxacarb	0.478
Pendimethalin	0.668



## Assigned values

0.010-0.100 mg/kg

0.100-0.500 mg/kg

	Robust Mean X* (mg/kg)
Boscalid	0.010
Desmethyl-pirimicarb	0.023
Pirimicarb	0.030
Chlorothalonil	0.041
Spinosad	0.063
Fenhexamid	0.063
Hexythiazox	0.084
Linuron	0.125
Azoxystrobin	0.208
Deltamethrin	0.233
Thiacloprid	0.290
Indoxacarb	0.478
Pendimethalin	0.668

# Assigned values

0.010-0.100 mg/kg

0.100-0.500 mg/kg

> 0.500 mg/kg

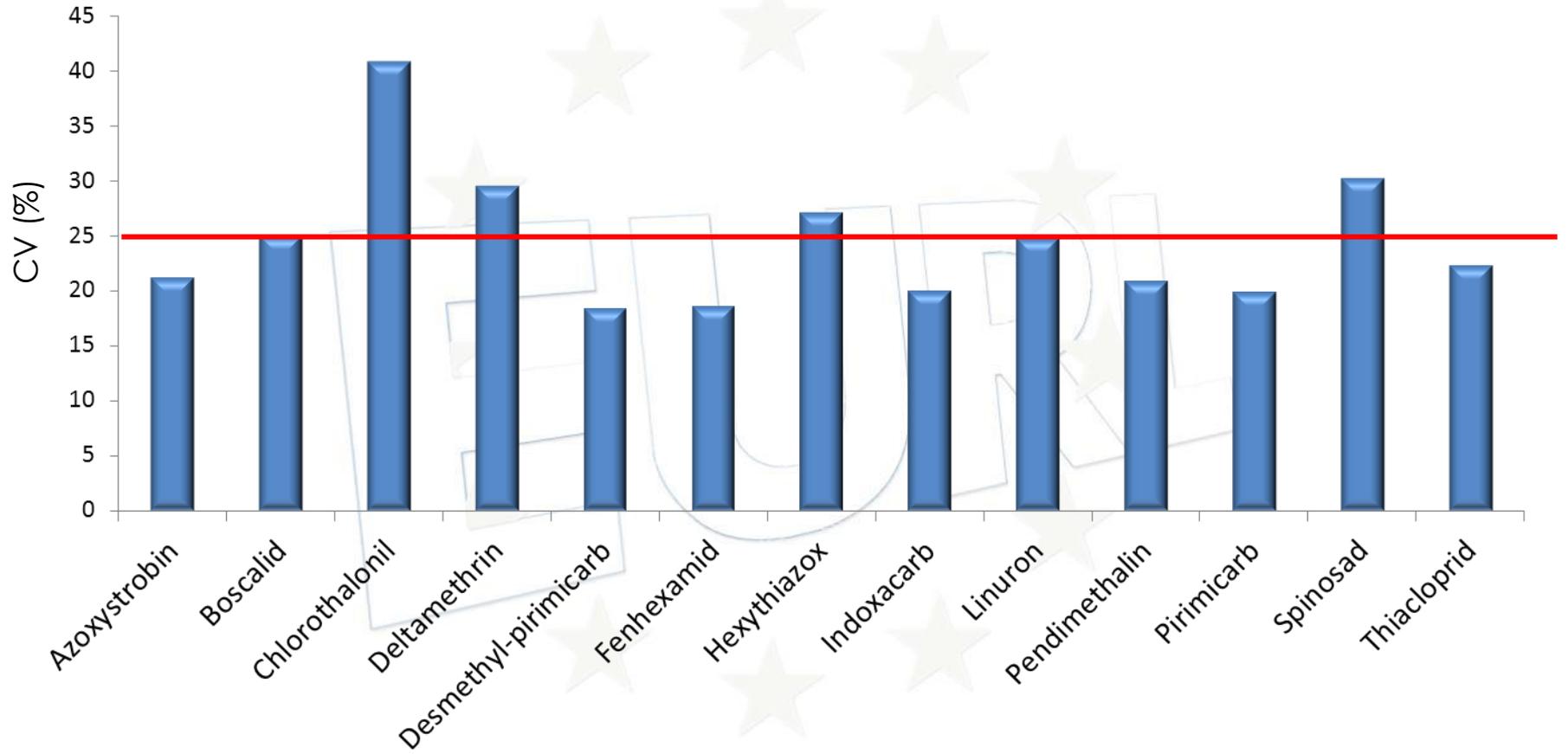
	Robust Mean X* (mg/kg)
Boscalid	0.010
Desmethyl-pirimicarb	0.023
Pirimicarb	0.030
Chlorothalonil	0.041
Spinosad	0.063
Fenhexamid	0.063
Hexythiazox	0.084
Linuron	0.125
Azoxystrobin	0.208
Deltamethrin	0.233
Thiacloprid	0.290
Indoxacarb	0.478
Pendimethalin	0.668

## Dispersion of Results

	Robust Mean X* (mg/kg)	CVs*(%)
Azoxystrobin	0.208	21.2
Boscalid*	0.010	25.0
Chlorothalonil	0.041	40.8
Deltamethrin	0.233	29.5
Fenhexamid	0.063	18.5
Hexythiazox	0.084	27.1
Indoxacarb	0.478	20.0
Linuron	0.125	24.8
Pendimethalin	0.668	20.9
Pirimicarb*	0.030	19.9
Pirimicarb desmethyl*	0.023	18.4
Spinosad	0.063	30.2
Thiacloprid	0.290	22.3

\* Assigned value < 4xMRRL

# Dispersion of Results



Pesticides	No. of Reported Results	No. of False Negative Results	No. of Not Analysed Results	Percentage of Reported Results (out of 64)
Azoxystrobin	62	0	2	97
<b>Boscalid*</b>	<b>14</b>	<b>47</b>	<b>3</b>	<b>22</b>
Chlorothalonil	49	1	14	77
<b>Deltamethrin</b>	<b>63</b>	<b>0</b>	<b>1</b>	<b>98</b>
Fenhexamid	56	0	8	88
Hexythiazox	58	0	6	91
Indoxacarb	61	0	3	95
Linuron	59	2	7	92
Pendimethalin	59	1	4	92
Pirimicarb*	59	1	4	92
Pirimicarb desmethyl*	39	7	18	61
Spinosad	58	1	5	91
Thiacloprid	60	0	4	94

\* Assigned value < 4xMRRL

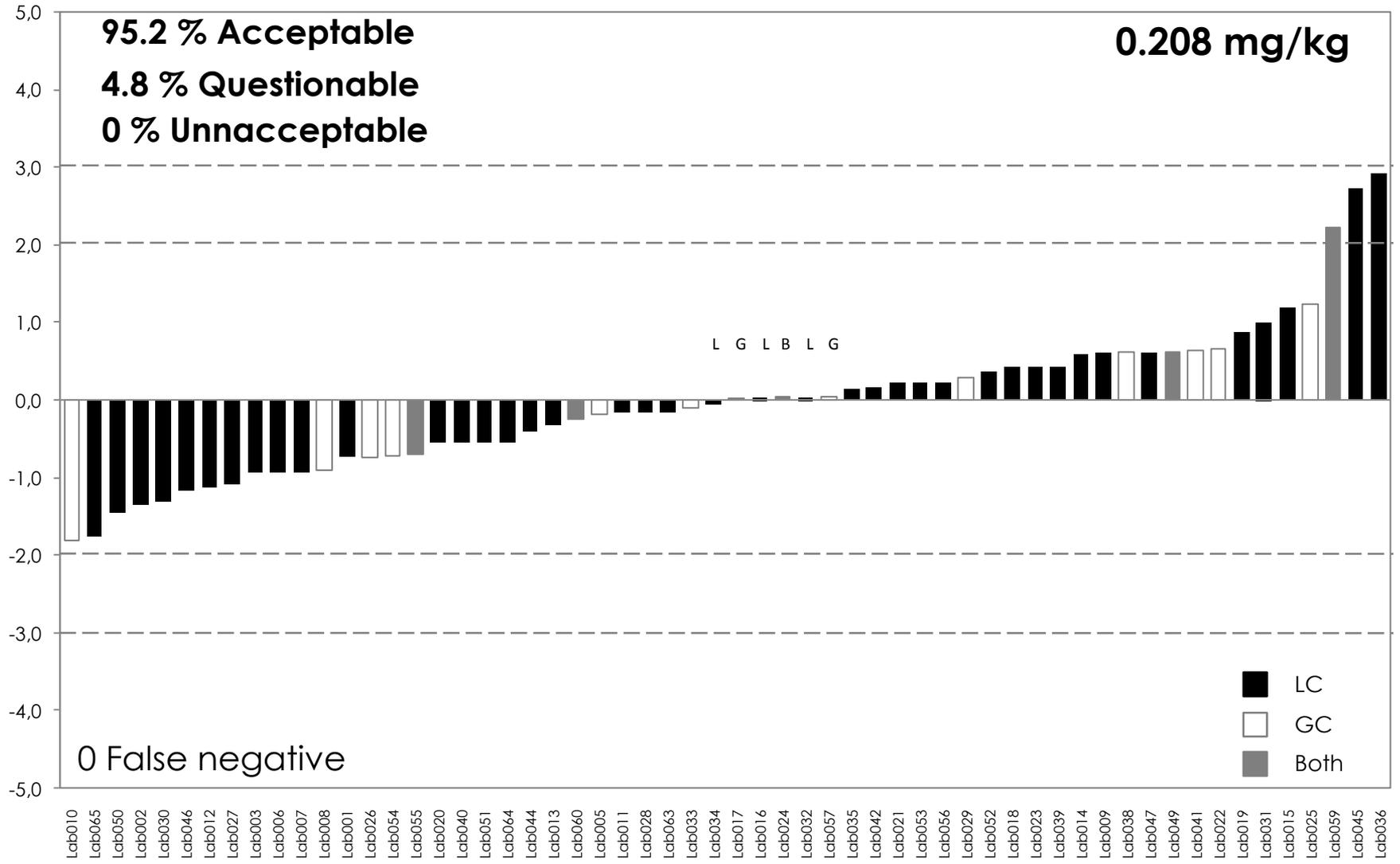
# z-Scores

# z-Scores classification

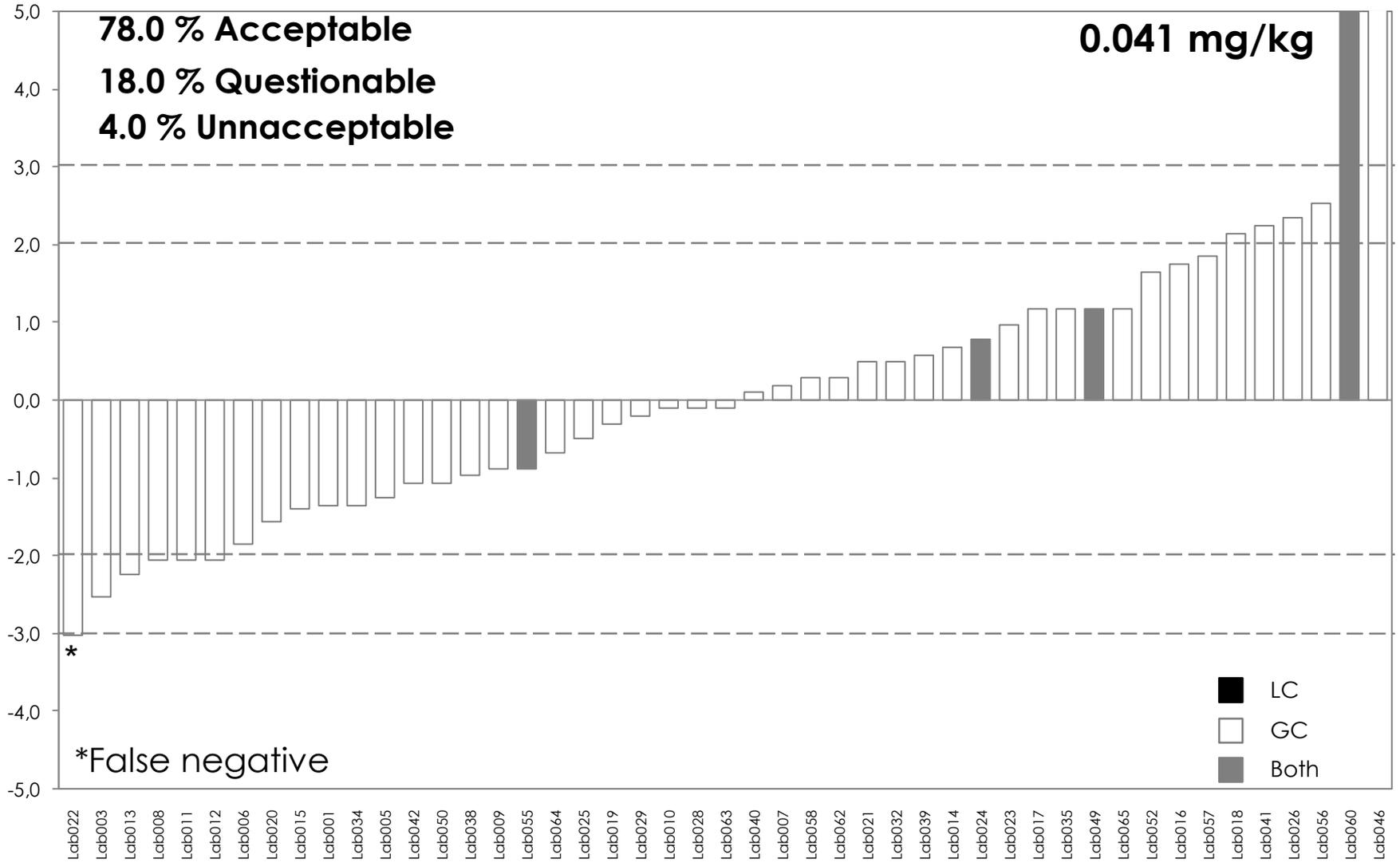
Pesticides	Robust Mean (mg/kg)	% Acceptable z-scores	% Questionable z-scores	% Unacceptable z-scores
Azoxystrobin	0.208	95,2	4,8	0,0
Boscalid*	0.010	78,0	18,0	4,0
Chlorothalonil	0.041	82,5	6,3	11,1
Deltamethrin	0.233	94,6	5,4	0,0
Fenhexamid	0.063	87,9	8,6	3,4
Hexythiazox	0.084	93,4	3,3	3,3
Indoxacarb	0.478	82,5	5,3	12,3
Linuron	0.125	91,7	1,7	6,7
Pendimethalin	0.668	86,4	8,5	5,1
Pirimicarb*	0.030	95,0	5,0	0,0
Pirimicarb desmethyl*	0.023	95,2	4,8	0,0
Spinosad	0.063	78,0	18,0	4,0
Thiacloprid	0.290	82,5	6,3	11,1

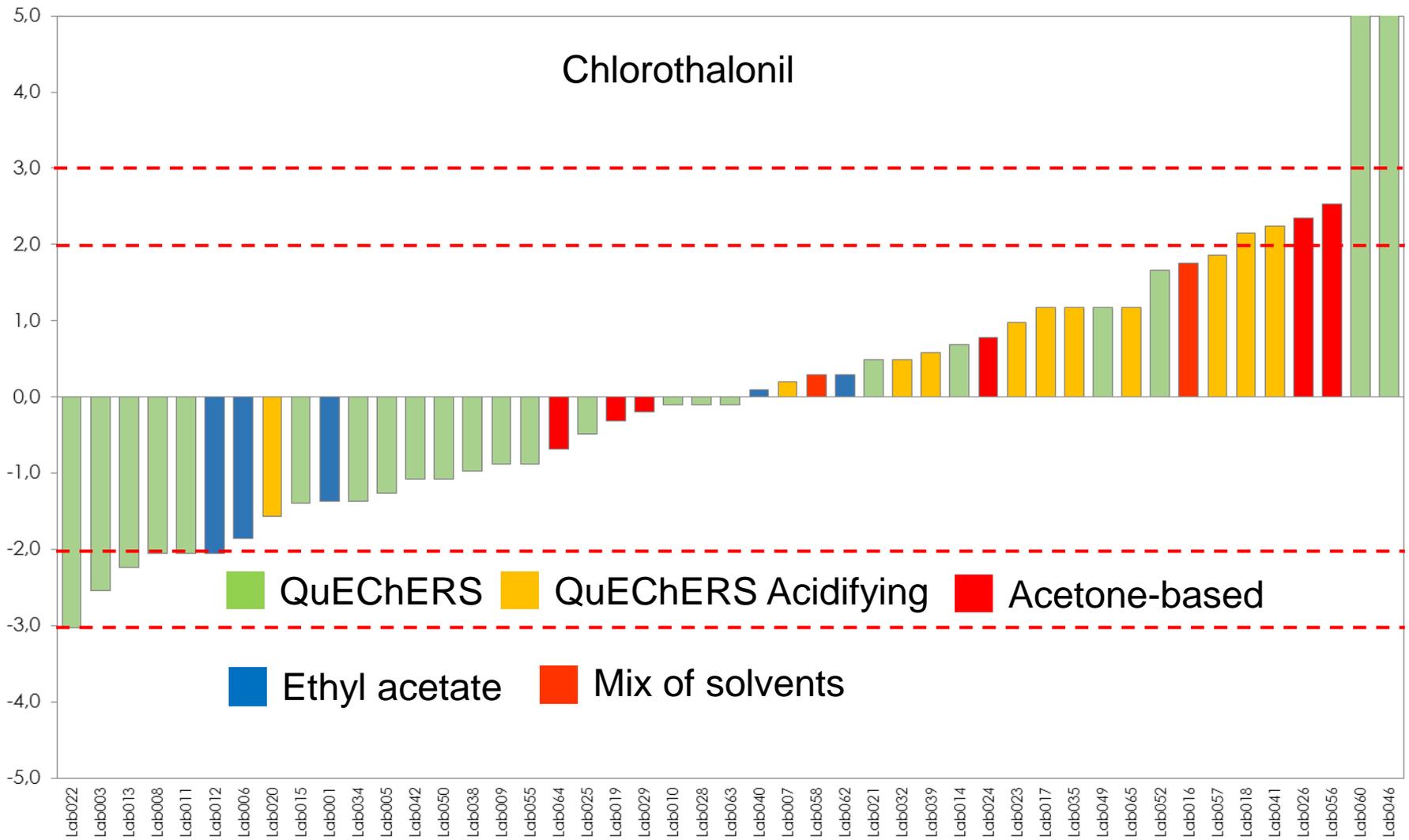
\* Assigned value < 4xMRRL

# Azoxystrobin



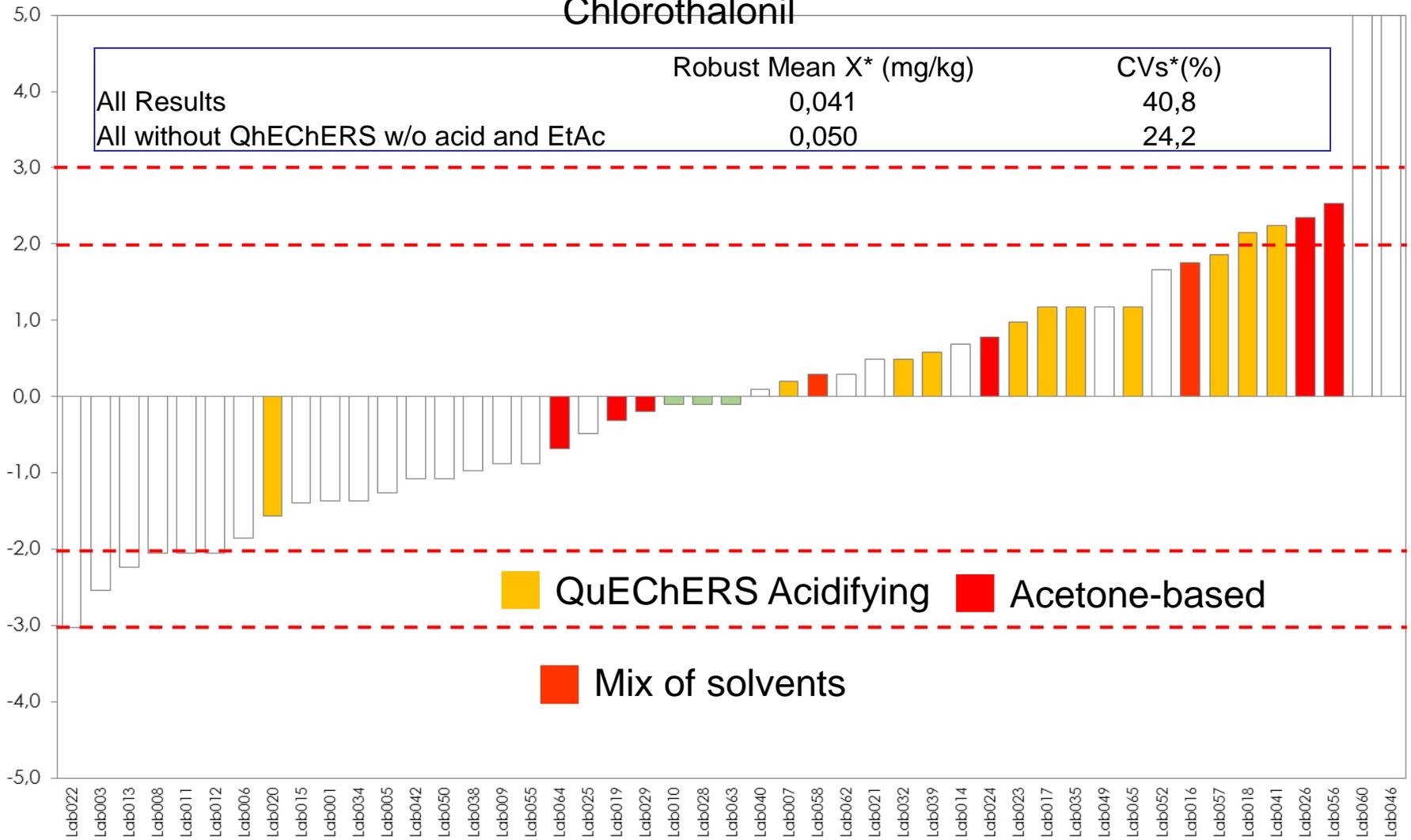
# Chlorothalonil



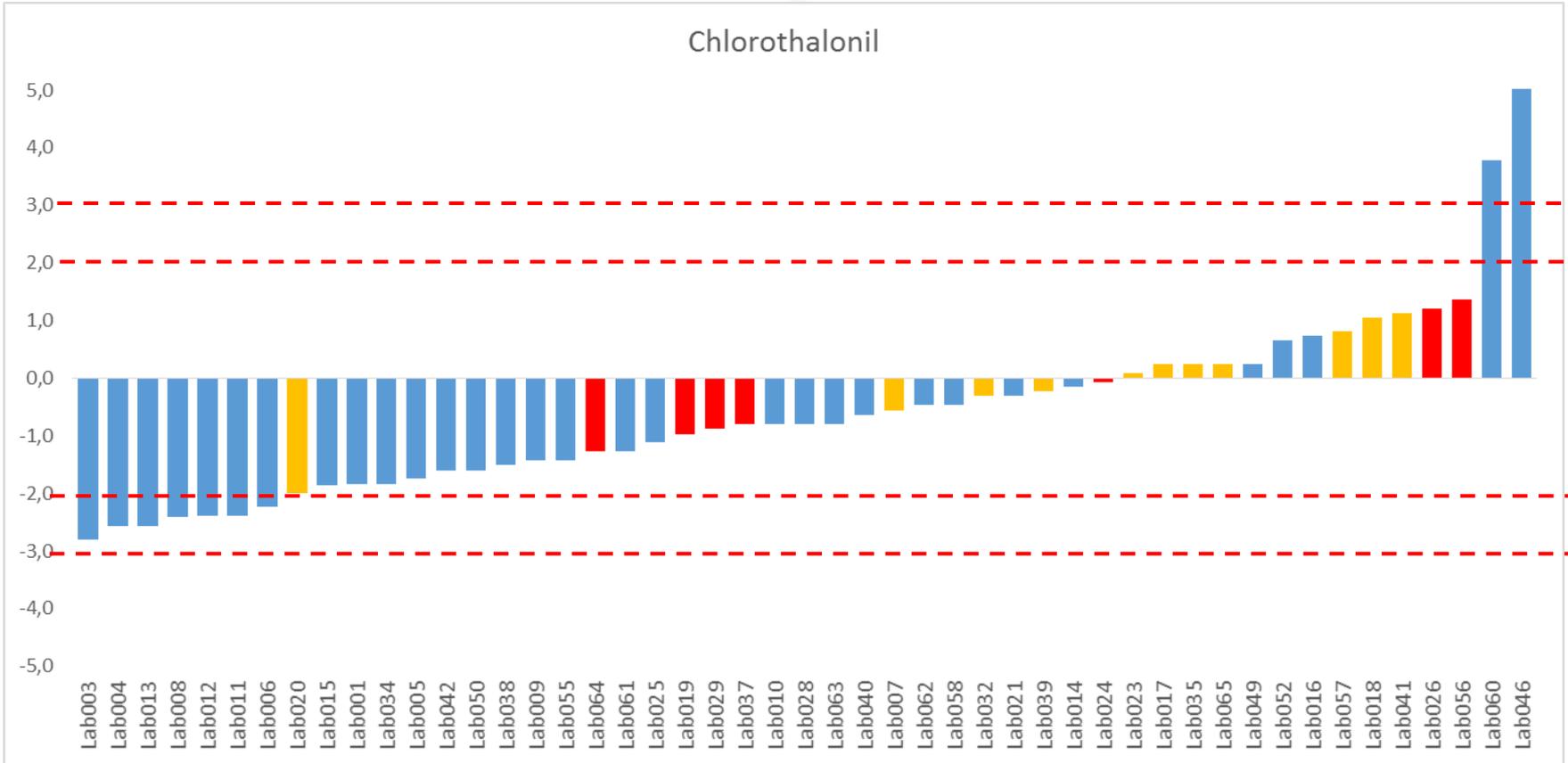


# Chlorothalonil

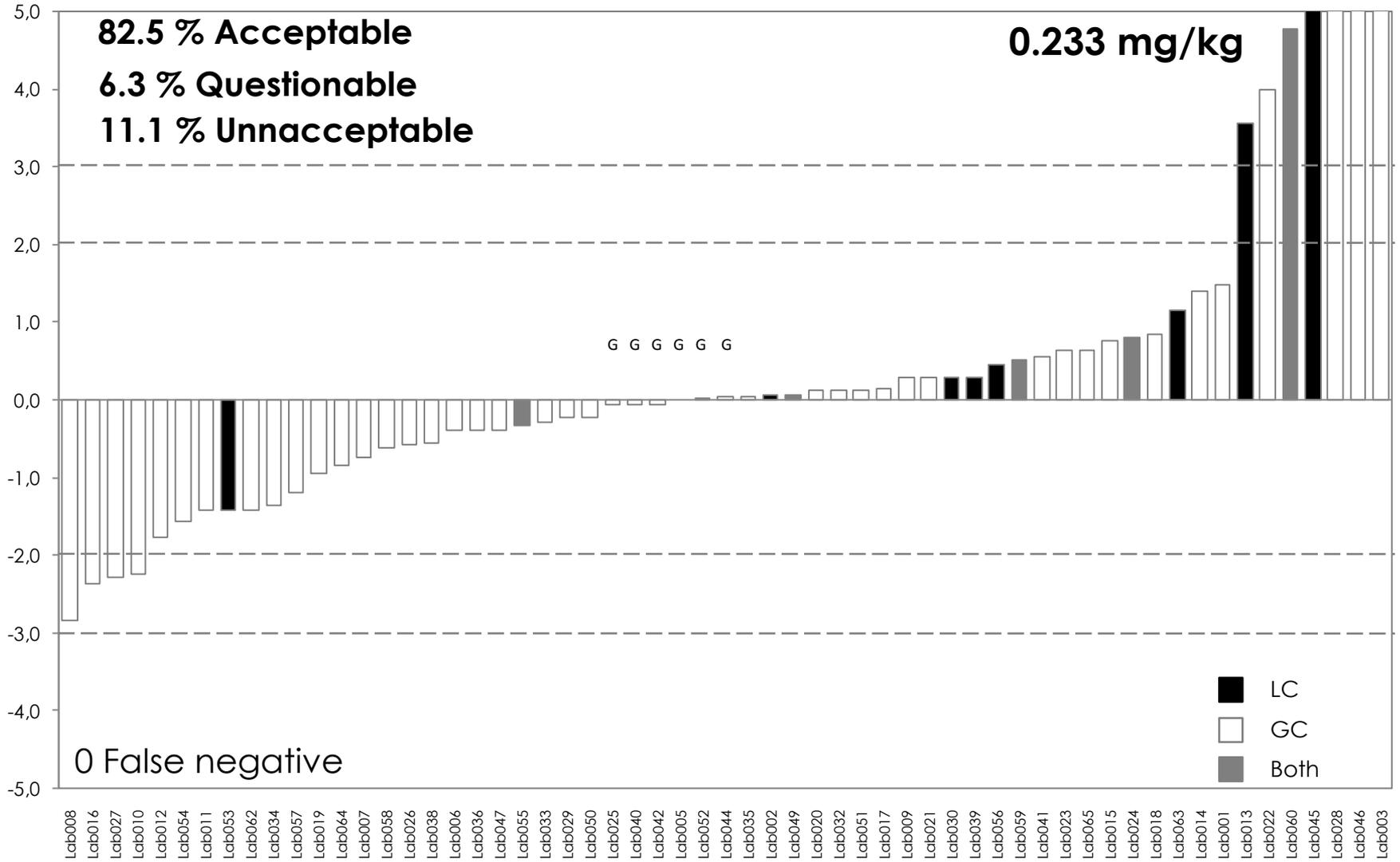
	Robust Mean X* (mg/kg)	CVs*(%)
All Results	0,041	40,8
All without QhEChERS w/o acid and EtAc	0,050	24,2



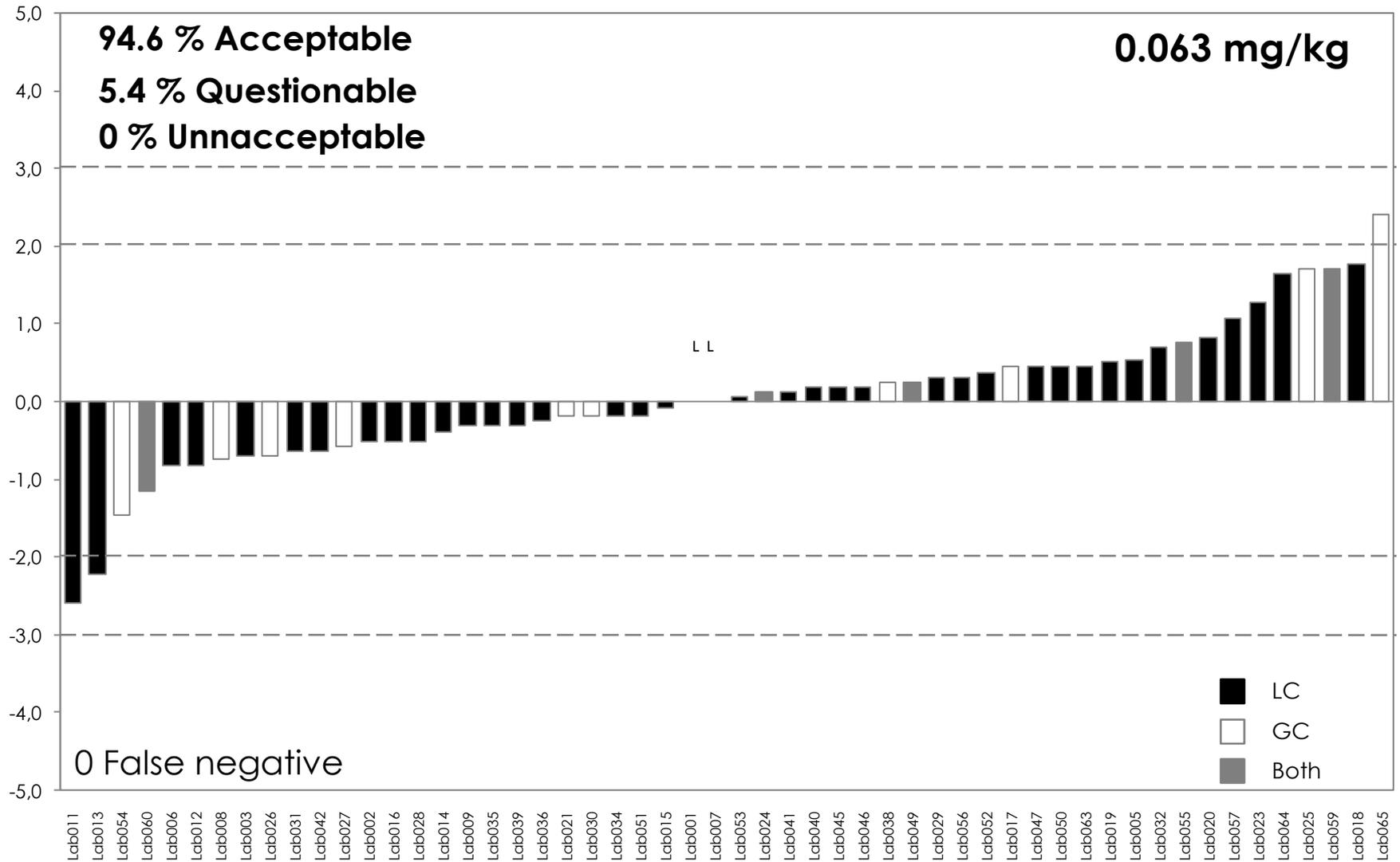
All without QhEChERS w/o acid and EtAc	Robust Mean $X^*$ (mg/kg) 0,050	CVs* (%) 24,2
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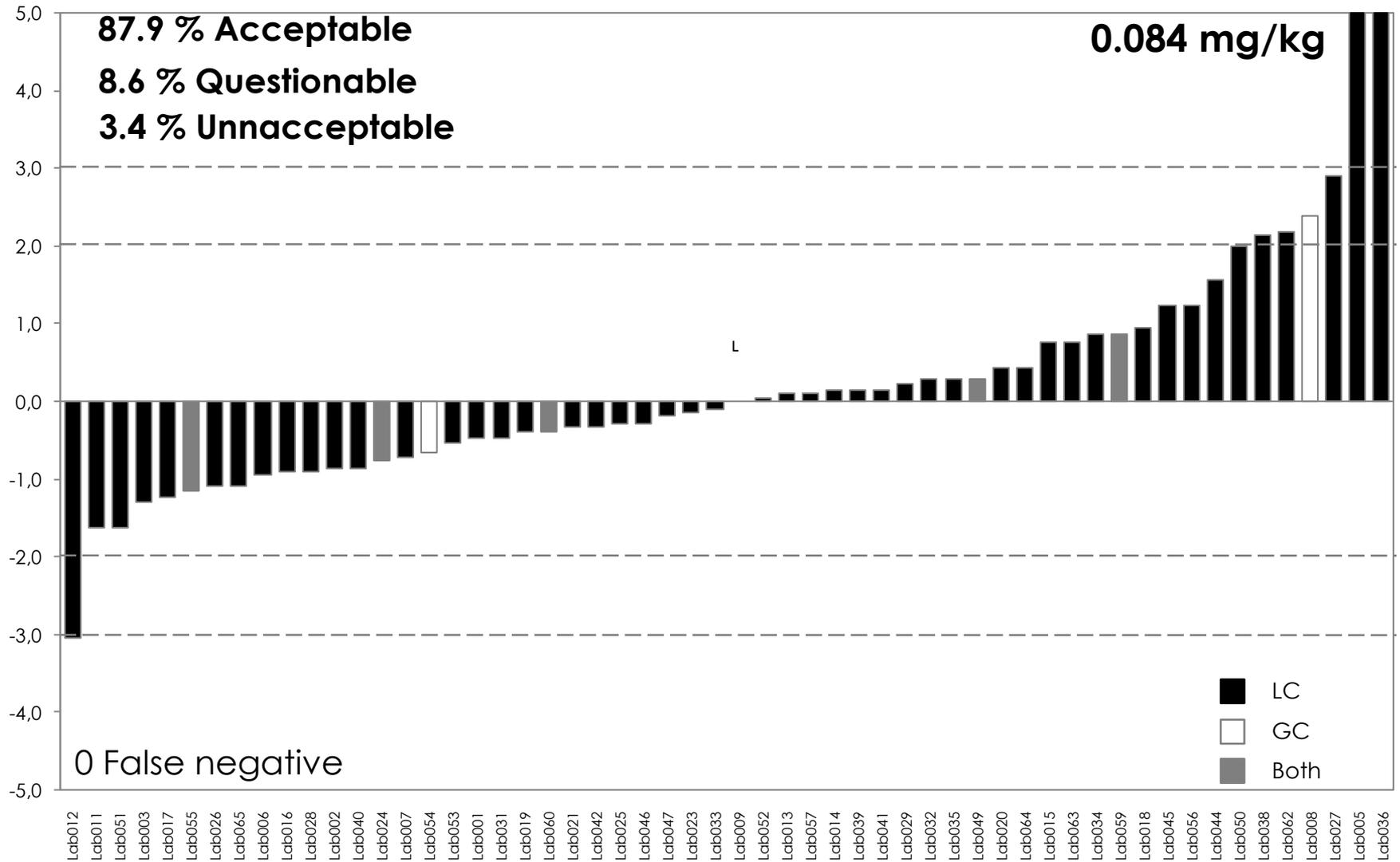
# Deltamethrin



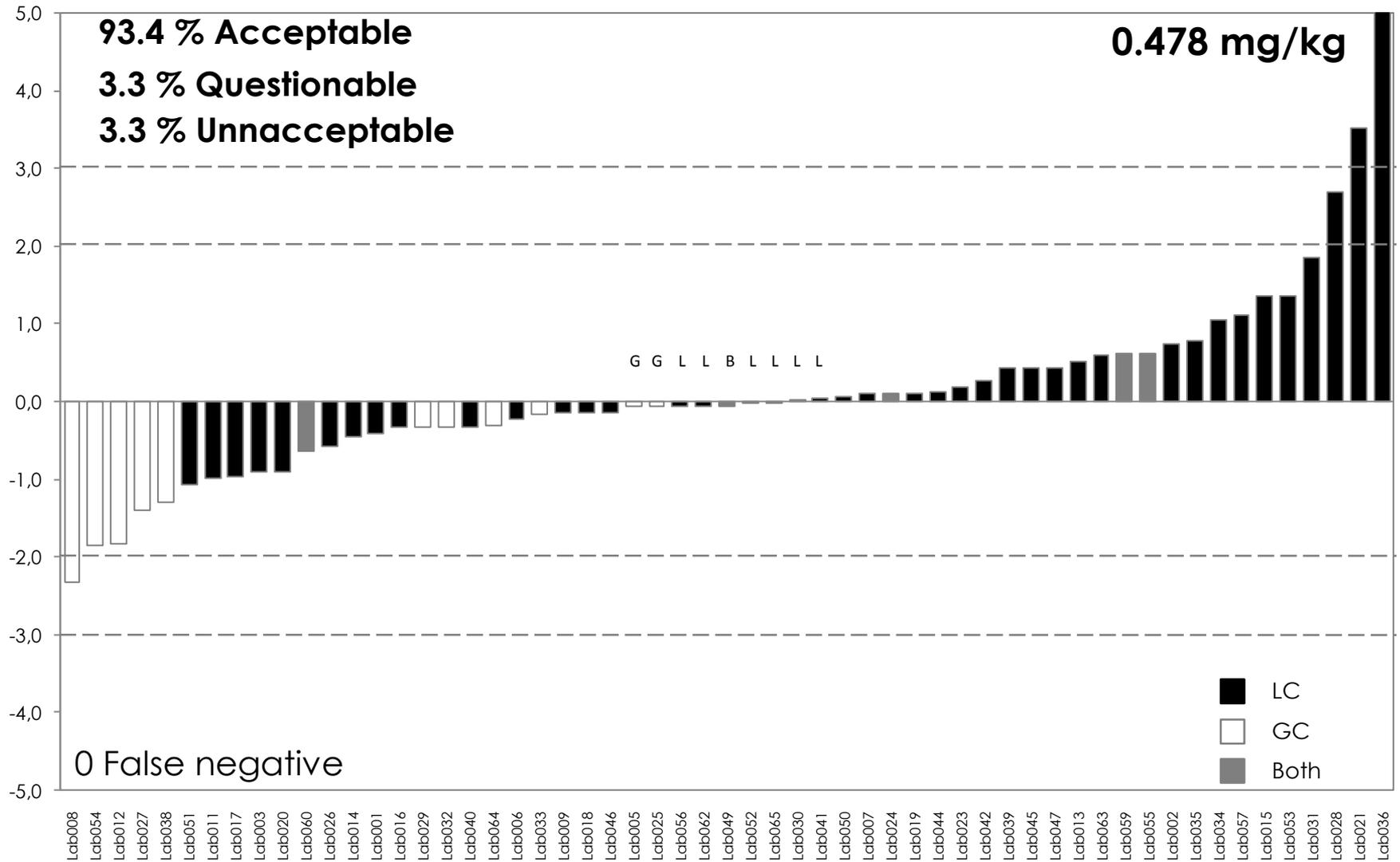
# Fenhexamid



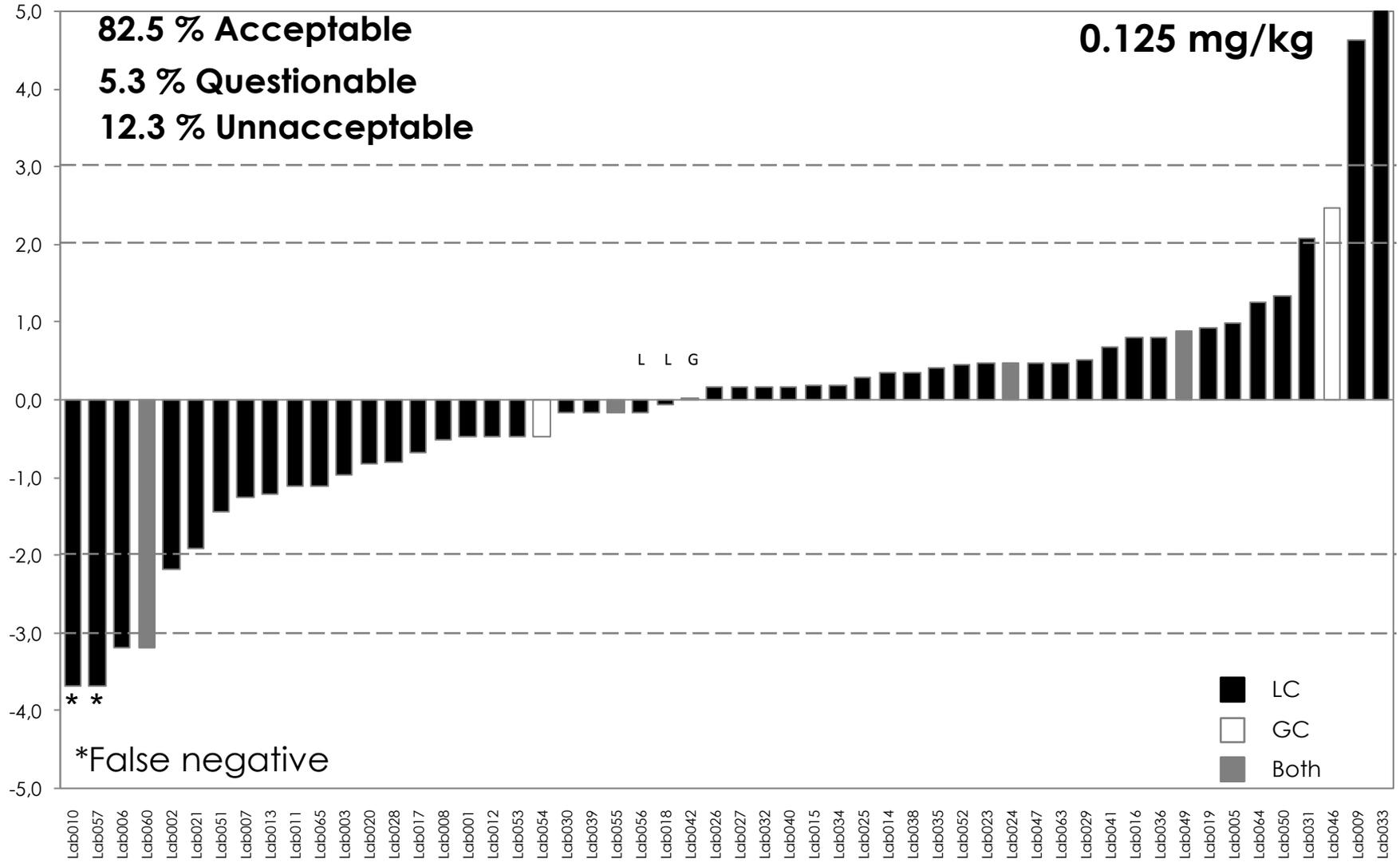
## Hexythiazox



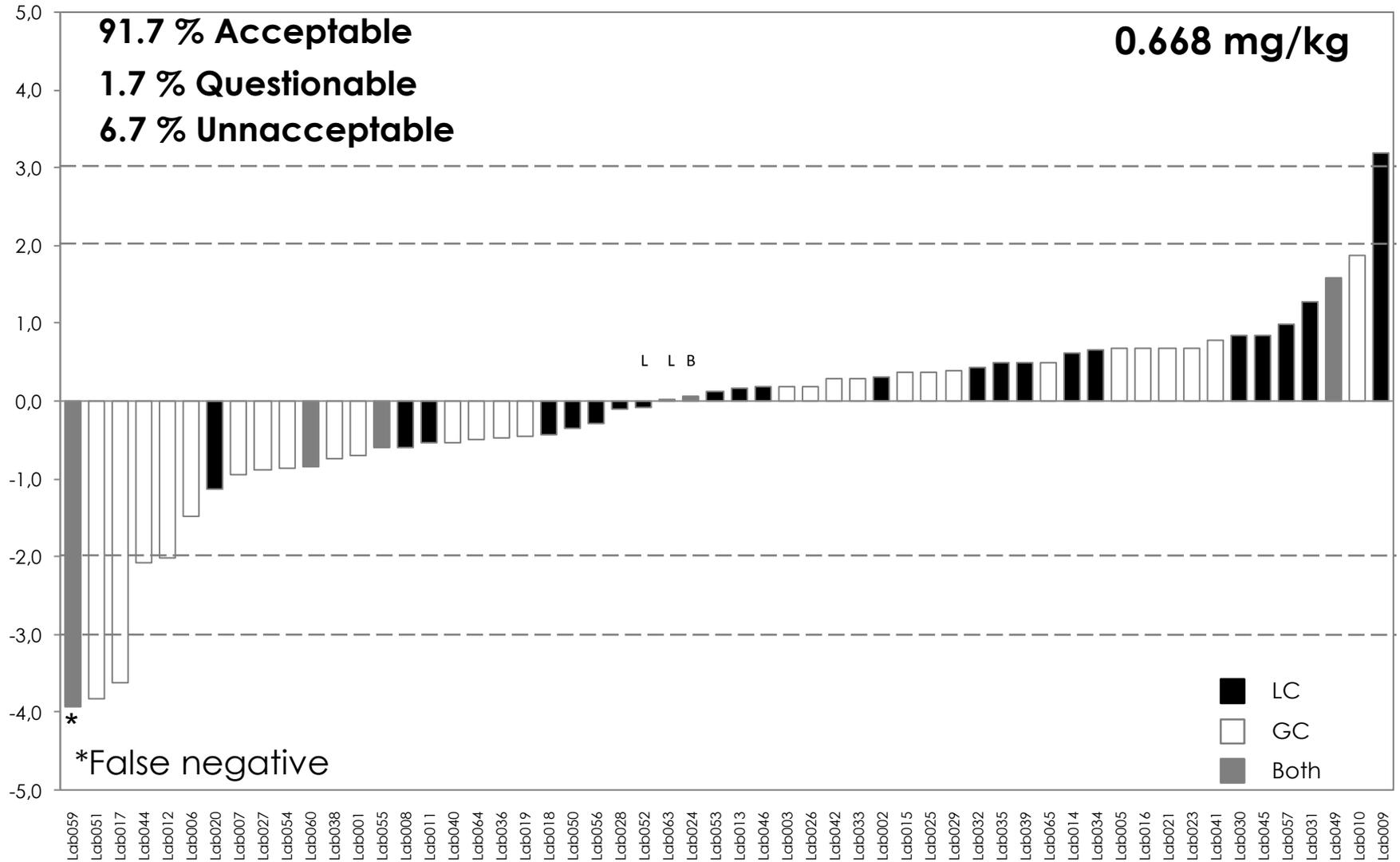
# Indoxacarb



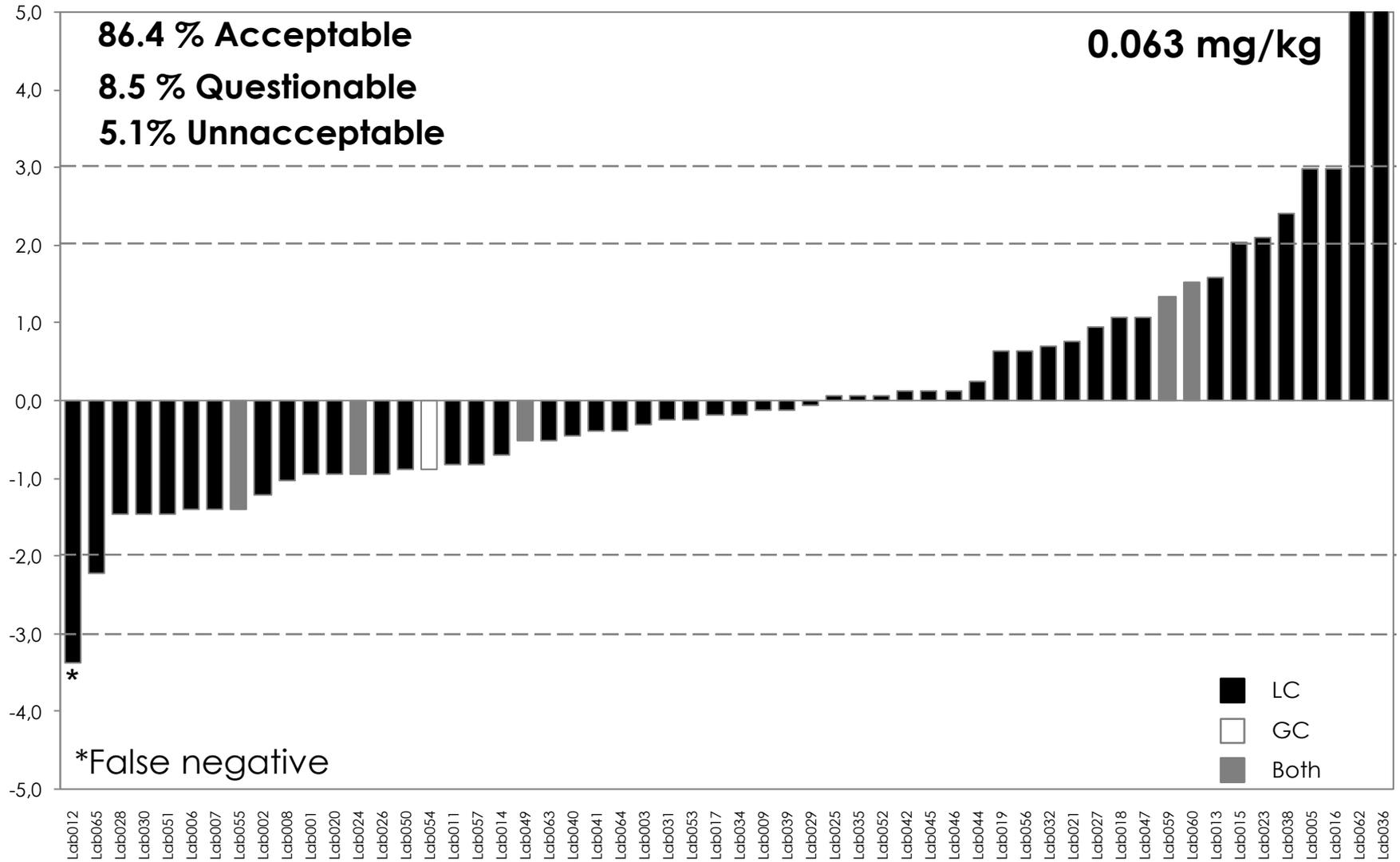
# Linuron



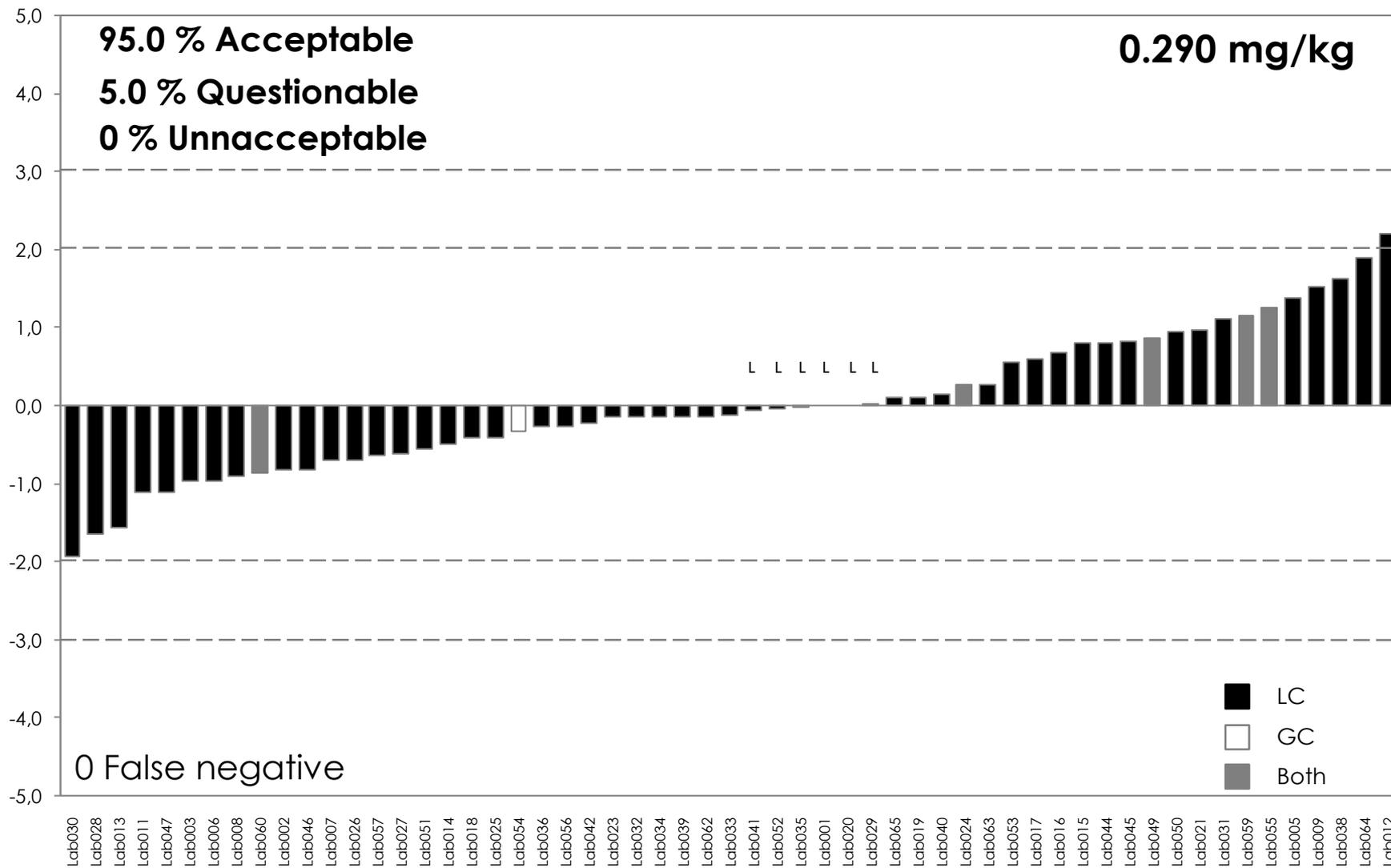
# Pendimethalin



# Spinosad



# Thiacloprid

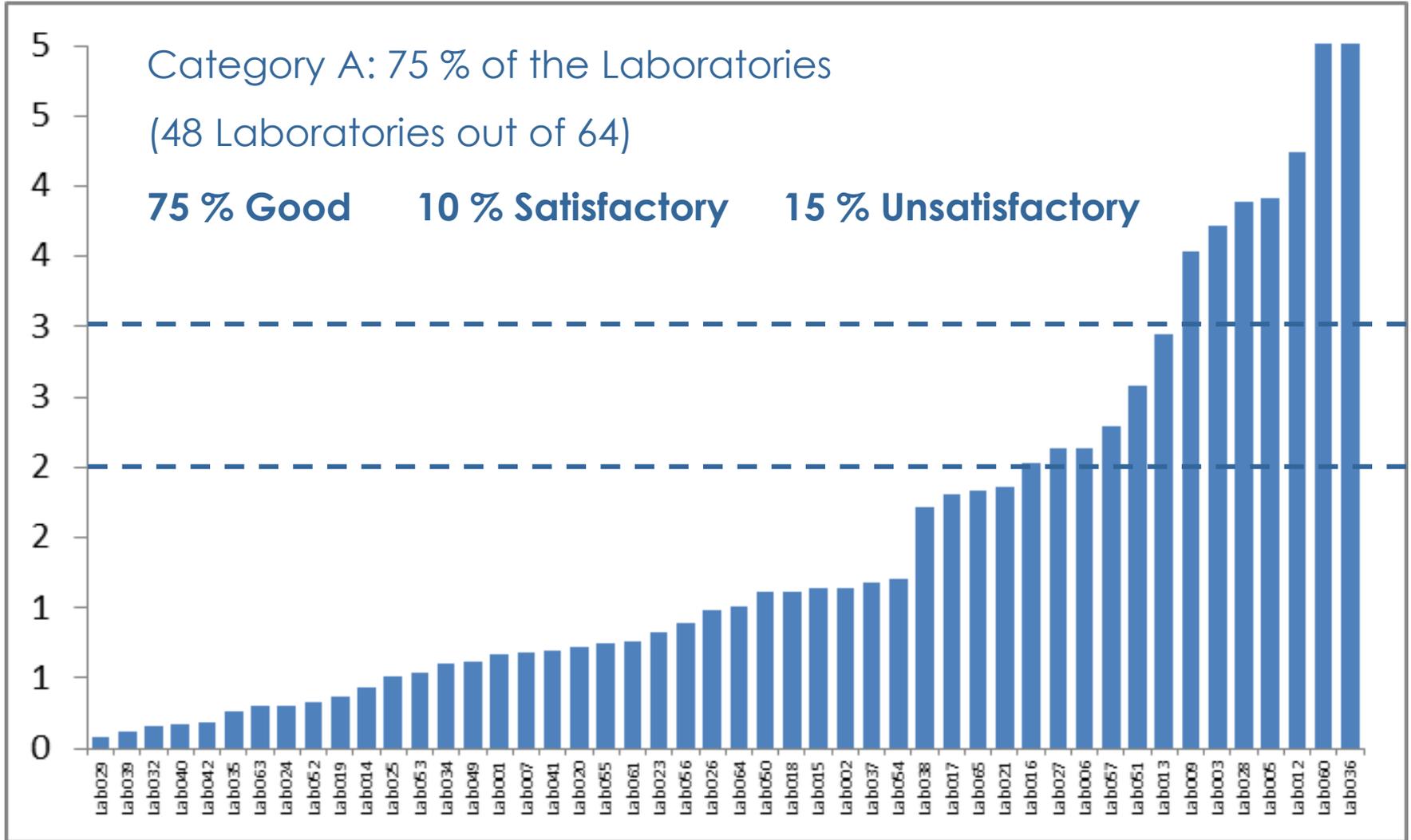


# Combined z-Scores

# Average of Squared z-Scores

$$AZ^2 = \frac{\sum_{i=1}^n z_i^2}{n}$$

- $AZ^2 \leq 2.0$  Good
- $2.0 < AZ^2 < 3.0$  Satisfactory
- $AZ^2 \geq 3.0$  Unsatisfactory





## False Positives

5 different laboratories reported 6 pesticides as false positives



# False Positives

Laboratory Code	Pesticide	Concentration (mg/kg)	Determination Technique	RL (mg/Kg)	MRRL (mg/Kg)
Lab011	Azinphos-methyl	0,49	GC-MS (tQ)	0,01	0,01
Lab047	Bromopropylate	0,02	GC-MS (tQ)	0,01	0,01
Lab011	Fenthion	0,102	LC-MS (sQ)	0,01	0,01
Lab030	Orthophenylphenol	0,07	GC-MS (sQ)	0,01	0,01
Lab046	Orthophenylphenol	0,013	GC-MS (tQ)	0,02	0,01
Lab008	Triadimenol	0,0394	GC-MS (tQ)	0,01	0,01





# False Positives

**GC-MS/MS**

Azinphos-methyl

Bromopropylate

Orthophenylphenol

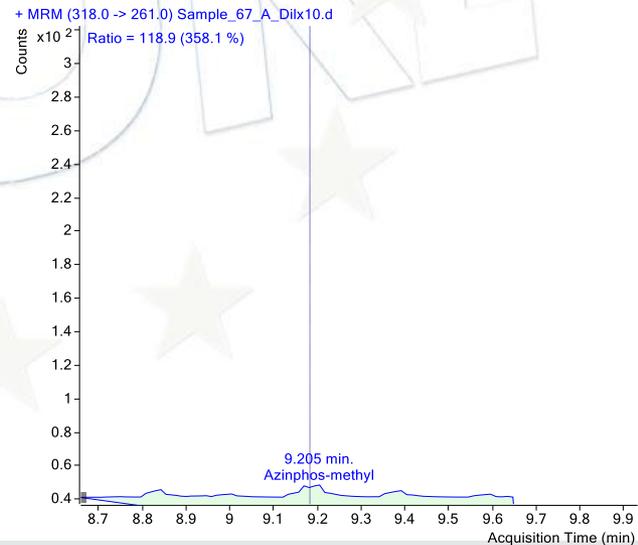
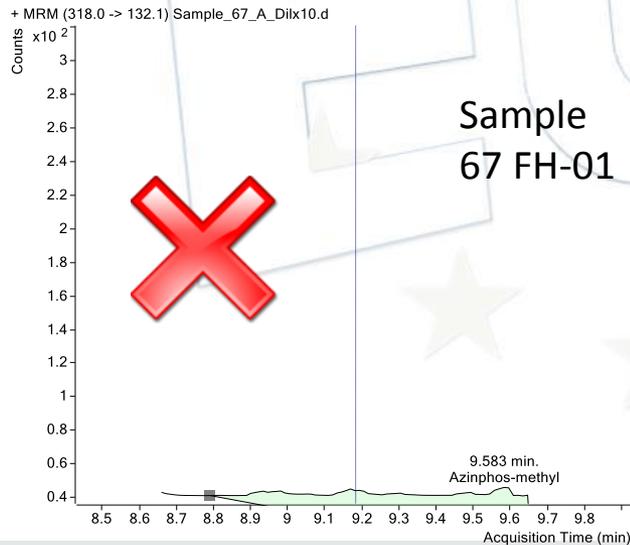
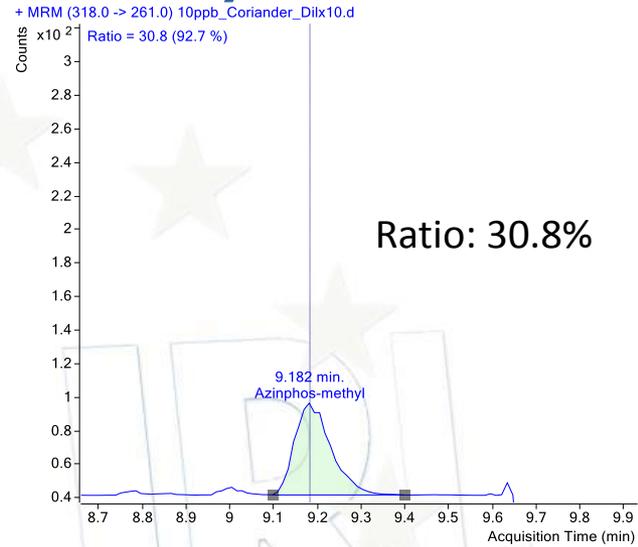
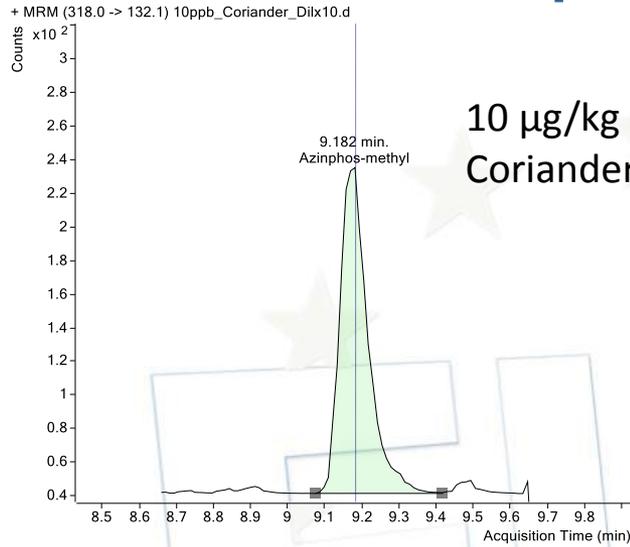
Triadimenol

**LC-MS/MS**

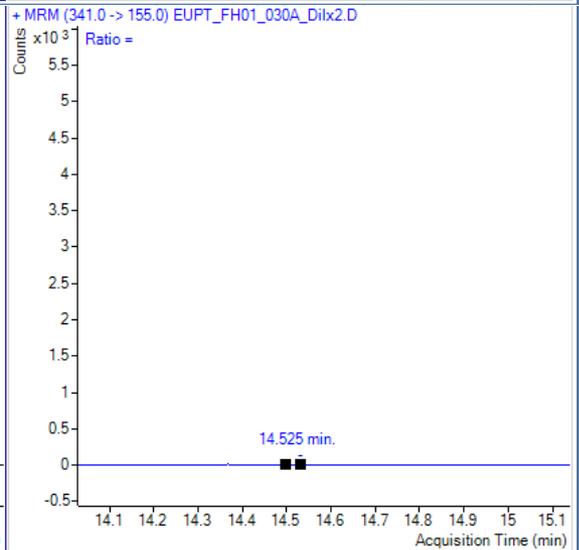
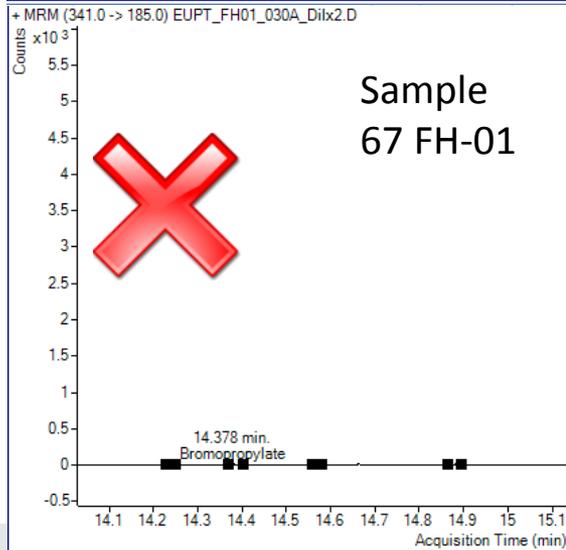
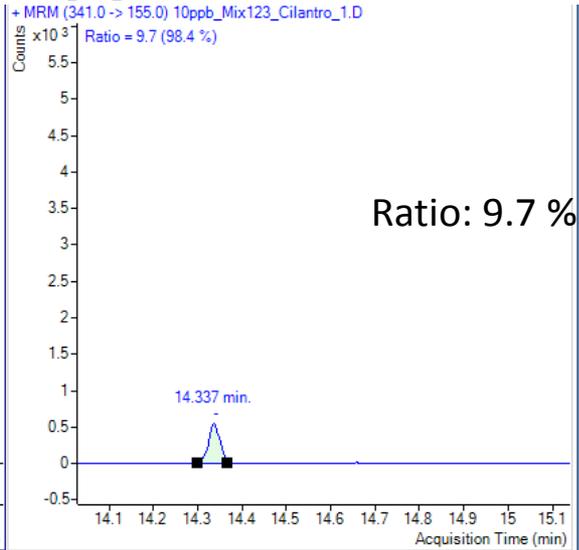
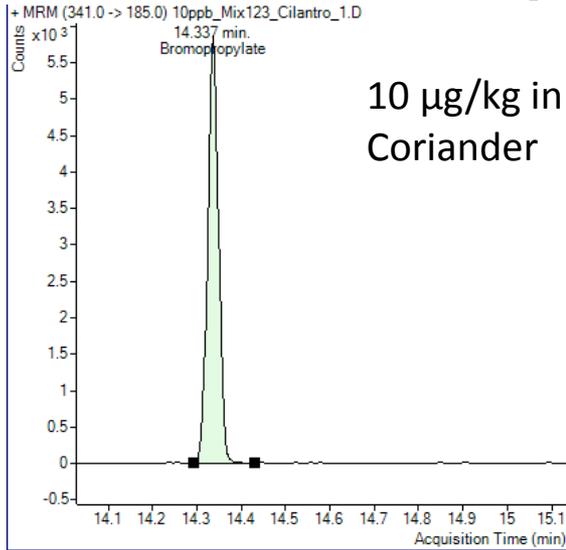
Fenthion



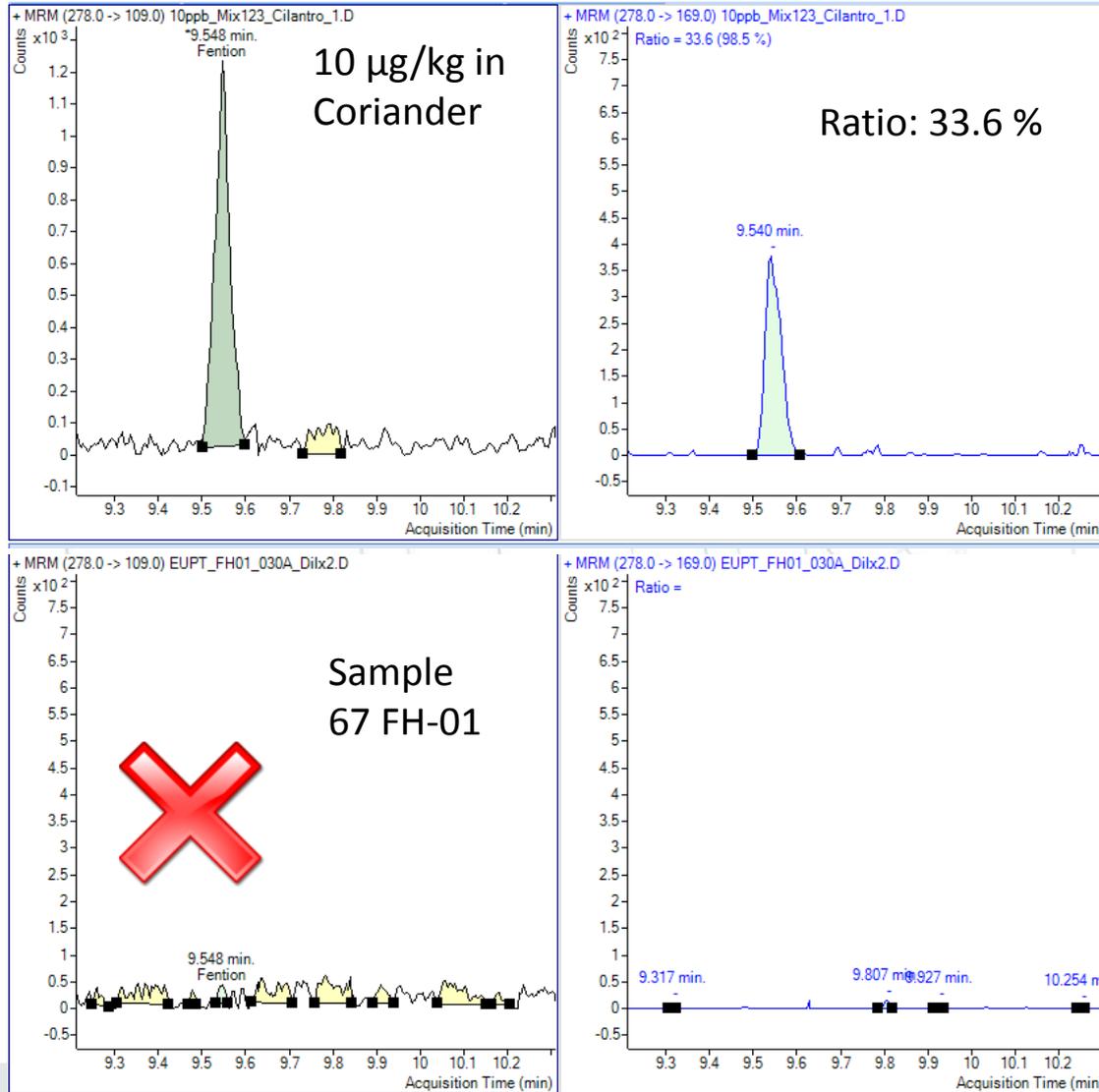
# Azinphos methyl



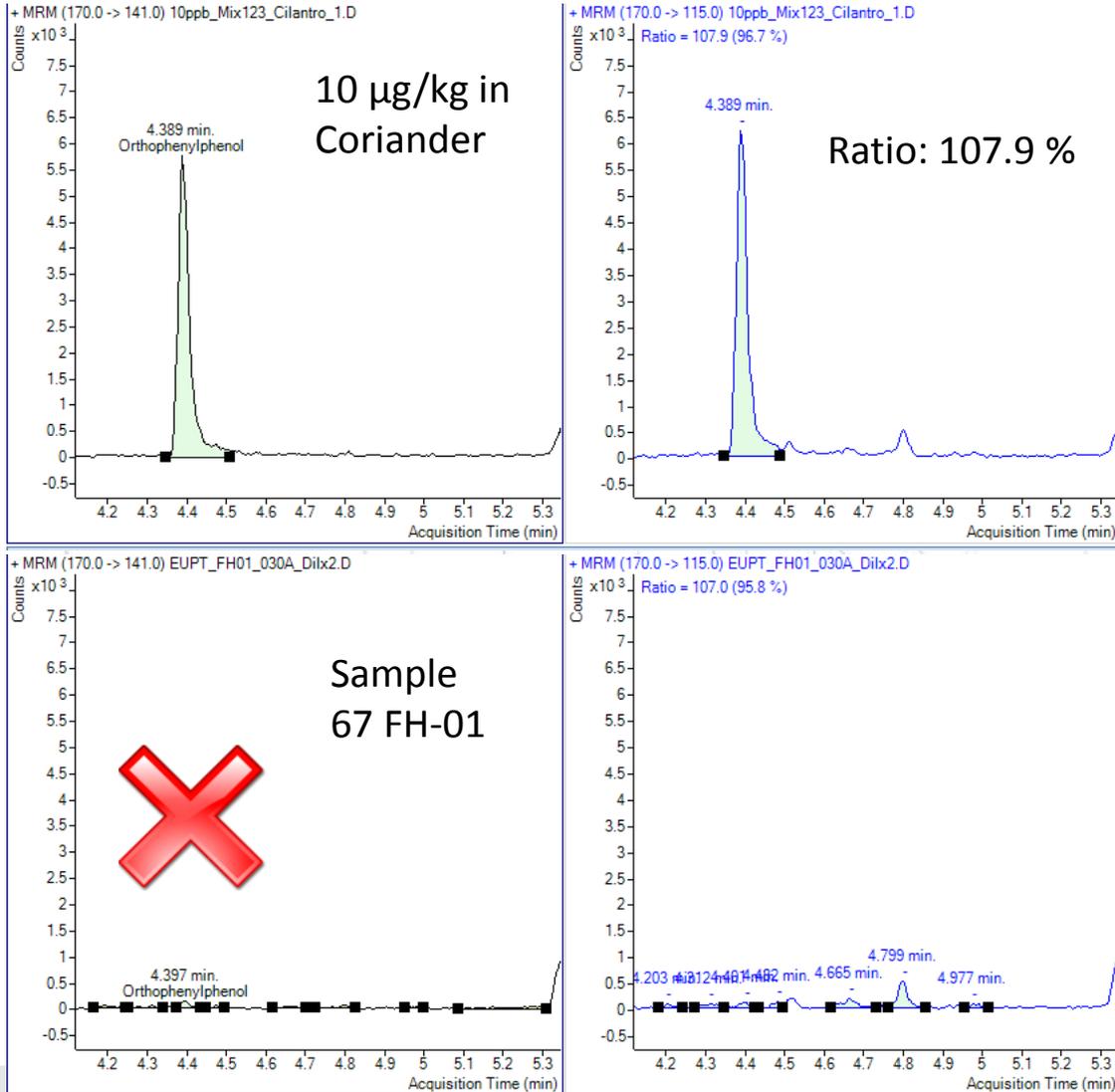
# Bromopropylate



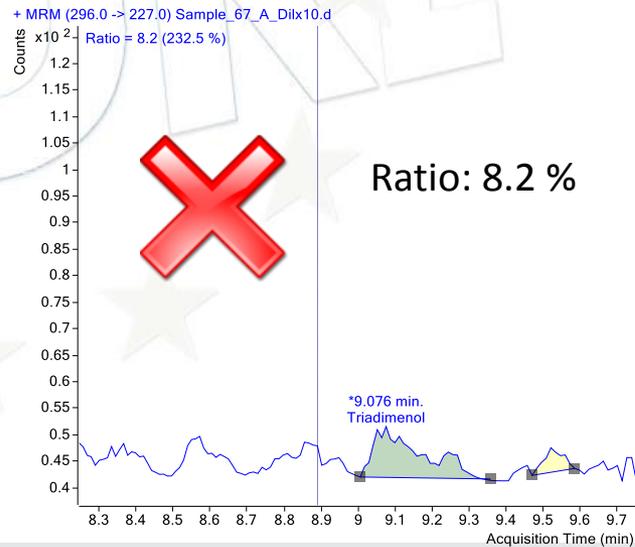
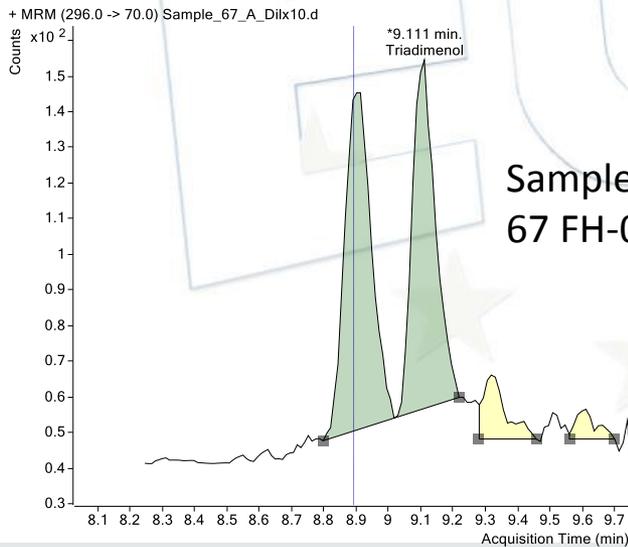
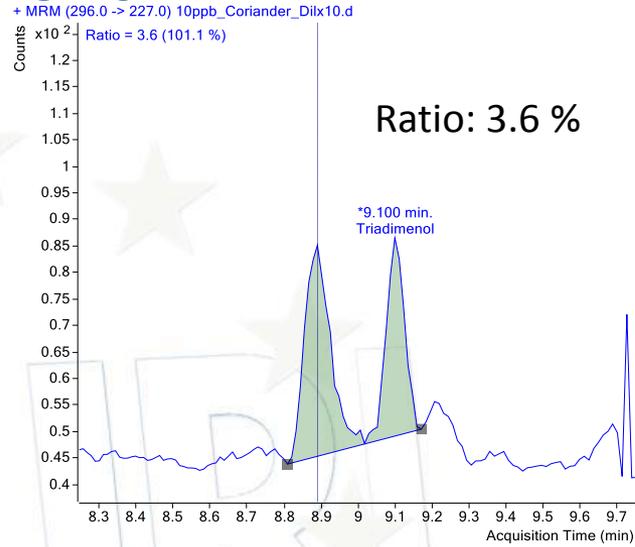
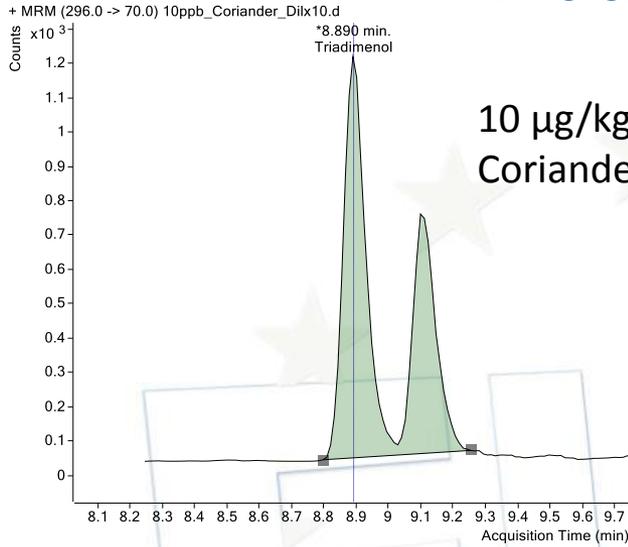
# Fenthion



# Orthophenylphenol



# Triadimenol

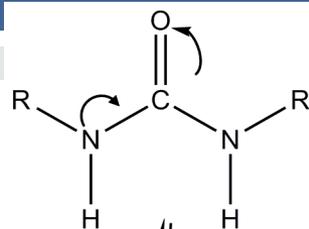


**Thank You  
for Your Attention**

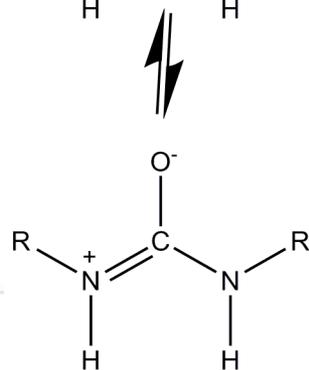


**EURL** EUROPEAN  
UNION  
REFERENCE  
LABORATORY

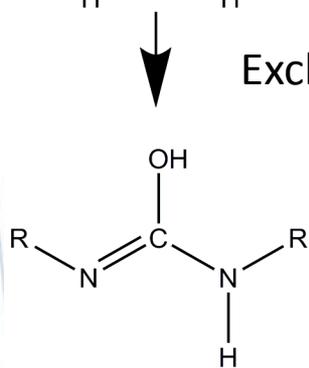
Explicación para el producto que aparece en brocoli y agua



UREA



Exchange of H



Es una forma más polar sale a rt:5.4min.Necesita presencia de agua para que se de. Creo que por eso en naranja no se ve

[M+H]<sup>+</sup> = 369.2536

?