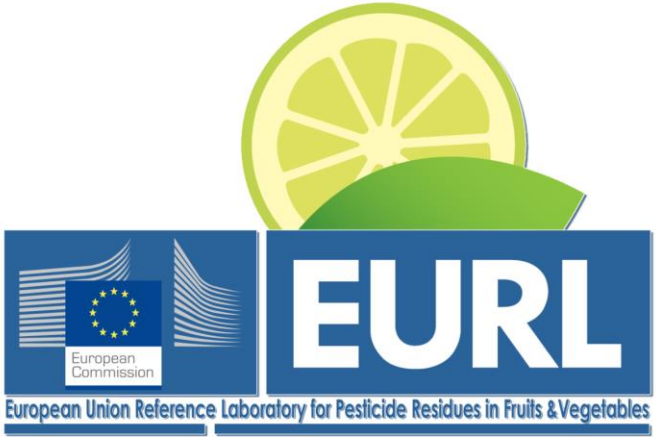
EURL-FV Webinar

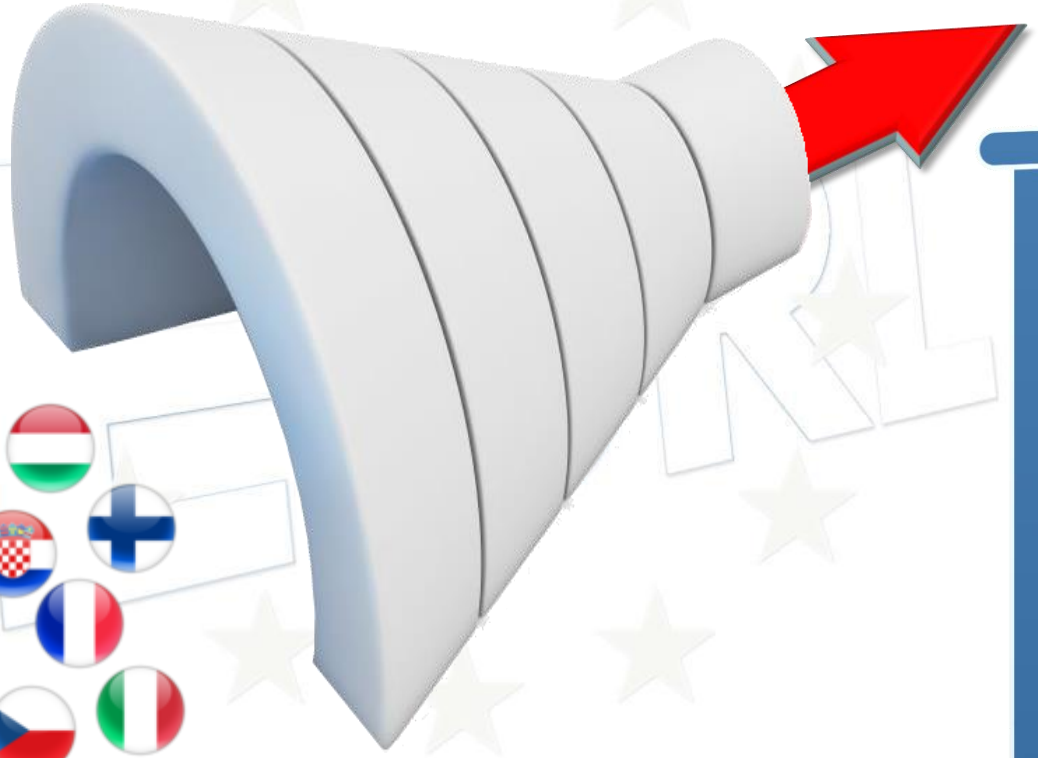
Results
EUPT-FV21 and EUPT-SM11



European Union Proficiency Tests

EUPTs

OfLs



Improve the Quality, Accuracy and Comparability of the results Produced by Official Labs within the EU

European Union Proficiency Tests

EUPTs

Organised

EURLs

All laboratories analysing samples for the official control of pesticide residues, which shall participate in the European Union Proficiency Tests (EUPTs) for pesticide residues organised by the European Union

EUPT-Panel

DG SANTE

Mrs. Almut Bitterhof
Mr. Stephanos Kirkagaslis

ORGANISING GROUP

Amadeo R. Fernández-Alba
Carmen Ferrer
Octavio Malato

QUALITY CONTROL GROUP

Antonio Valverde
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Michelangelo Anastassiades
Miguel Gamón
Magnus Jezussek
André de Kok
Ralf Lippold
Sonja Masselter
Tuija Pihlström
Mette Erecius Poulsen
Finbarr O'Regan
Patrizia Pelosi
Hans Mol

EUPT-FV-21

European Proficiency Test FV-21

Calendar

EUPT- FV21 CALENDAR

Activity	Date
Registration period in EURL Data Pool.	20th December- 25th January
Specific Protocol published on the Web site.	11th February 2019 at the latest
Sample distribution	25th February 2019
Deadline for receiving sample acceptance	4th March 2019
Deadline for receiving results	25th March 2019
Filling in additional information, if necessary	25th March – 1th April 2019
Preliminary Report: only results, no estatical treatment	May 2019
Final Report distribuited to the Laboratories	August 2019

Target List

205 pesticides

Acephate
Acetamiprid
Acrinathrin
Aldicarb
Aldicarb Sulfone
Aldicarb Sulfoxide
Aldrin
Amectrotadin
Azinphos-methyl
Azoxystrobin
Benfuracarb
Bifenthrin (sum of isomers)
Biphenyl
Bitertanol(sum of isomers)
Boscalid
Bromopropylate
Bromuconazole (sum of diaster
Bupirimate
Buprofezin
Cadusafos
Carbaryl
Carbendazim and benomyl (su
expressed as carbendazim)
Carbofuran
Carbofuran-3-hydroxy
Carbosulfan
Chlorantraniliprole
Chlorfenapyr
Chlorfenvinphos
Chlorobenzilate
Chlorothalonil
Chlorpropham
Chlorpyrifos
Chlorpyrifos-methyl
Clofentezine
Clothianidin
Cyazofamid
Cyfluthrin (cyfluthrin incl. other m
(sum of isomers))
Cymoxanil
Cypermethrin (cypermethrin incl
isomers (sum of isomers))
Cyproconazole
Cyprodinil
Deltamethrin (cis-deltamethrin)
Demeton-S-methylsulfone
Diazinon
Dichlofluanid
Dichlorvos
Dicloran
Dicofol (sum of p, p´ and o,p´ isc
Dieldrin
Diethofencarb
Difenoconazole
Diflubenzuron
Dimethoate
Dimethomorph (sum of isomers)
Dimethylaminosulfotoluidide (DM
Diniconazole (sum of isomers)
Diphenylamine
Endosulfan alpha
Endosulfan beta
Endosulfan sulfate
EPN
Epoxiconazole
Ethion
Ethirimol
Ethoprophos
Etofenprox
Etoxazole
Famoxadone
Fenamidone
Fenamiphos
Fenamiphos sulfone
Fenamiphos sulfoxide
Fenarimol
Fenazaquin
Fenbuconazole
Fenhexamid
Fenitrothion
Fenpropidin
Fenpropimorph
Fenpyroximate
Fenthion
Fenthion oxon
Fenthion oxon sulfone
Fenthion oxon sulfoxide
Fenthion sulfone
Fenthion sulfoxide
Fenvalerate
Fipronil
Fipronil sulfone
Flonicamid
Flubendiamide
Fludioxonil
Flufenoxuron
Fluopicolide
Fluopyram
Fluquinconazole
Flusilazole
Flutolanil
Flutriafol
Fluxapyroxad
Formetanate
Fosthiazate
Hexaconazole
Hexythiazox
Imazalil
Imidacloprid
Indoxacarb
Iprodione
Iprovalicarb
Isocarbophos

11 New compounds

Target List

Isofenphos-methyl
Isoprothiolane
Kresoxim-methyl
Lambda-Cyhalothrin
Linuron
Lufenuron
Malaoxon
Malathion
Mandipropamid
Mepanipyrim
Metalaxyl and metalaxyl-M
Metalaxyl and metalaxyl-M
Methiocarb
Methiocarb sulfone
Methiocarb sulfoxide
Methomyl
Methoxyfenozide
Metrafenone
Monocrotophos
Myclobutanyl
Omethoate
Orthophenylphenol
Oxadixyl
Oxamyl
Oxydemeton-methyl
Paclobutrazole
Paraoxon-methyl
Parathion-ethyl
Parathion-methyl
Penconazole
Pencycuron
Pendimethalin
Permethrin (sum of isom
Phenthoate
Phosalone
Phosmet
Phosmet oxon
Phoxim
Pirimicarb
Pirimicarb-desmethyl
Pirimiphos-methyl
Prochloraz
Procymidone
Profenofos
Propamocarb (only par
Propargite
Propiconazole (sum of i
Prothiofos
Pyraclostrobin
Pyridaben
Pyrimethanil
Pyriproxyfen
Quinoxyfen
Spinosad (sum of spinosad A and spinosad D)
Spirodiclofen
Spirotetramat
Spirotetramat metabolite BYI08330-enol
Spirotetramat metabolite BYI08330-ketohydr
Spirotetramat metabolite BYI08330-monohy
Spirotetramat metabolite BYI08330 enol-glu
Spiromesifen
Spiroxamine
Tau-Fluvalinate
Tebuconazole
Tebufenozide
Tebufenpyrad
Teflubenzuron
Tefluthrin
Terbuthylazine
Tetraconazole
Tetradifon
Thiabendazole
Thiacloprid
Thiamethoxam
Thiodicarb
Thiamethoxam
Thiodicarb
Thiophanate-methyl
Tolclofos-methyl
Tolylfluanid
Triadimefon
Triadimenol (any proportion of constituent isomers)
Triazophos
Trichlorfon
Trifloxystrobin
Triflumuron
Trifluralin
Triticonazole
Vinclozolin
Zoxamide

11 New compounds

Voluntary Target List

34 pesticides

Working Document SANCO/12745/2013

(Working document on pesticides to be considered for inclusion in the national control programmes to ensure compliance with maximum residue levels of pesticides residues in and on food of plant and animal origin)

Benalaxyl including other mixtures of constituent isomers including benalaxyl-M (sum of isomers)
Benzovindiflupyr
Chlorfluazurone
Clomazone
Cyazofamid
Cyflufenamid
Fenpyrazamine
Flufenacet (only parent compound)
Heptachlor
Heptachlor epoxide
Isoxaflutole
Isoxaflutole diketonitrile degradate
Isopyrazam
Metconazole
Molinate
Novaluron
Penflufen
Penthiopyrad
Picolinafen
Propaquizafop
Pyrethrins
Quintozene
Pentachloro-aniline
Proquinazid
Pyridalil
Pyriofenone
Quinoclamine
Rotenone
Spinetoram
Sulfaxaflor
Tetramethrin
Tricyclazole
Tritosulfuron

10 New compounds

EUPT-FV-21

European Proficiency Test FV-21

Red Cabbage

Pesticides used for the treatment

Acetamiprid	Metaflumizone
Chlorantraniprole	Penthiopyrad
Chlorpropham	Propamocarb
Chlorpyrifos	Propyzamide
Chlothianidin	Pyraclostrobin
Diazinon	Spinetoram
Difenoconazole	Teflubenzuron
Dimethoate	Trofloxystrobin
Fenamidone	Triflumuron
Fluxapyroxad	Tritosulfuron
	Total: 20

Preparation of the test item

Red cabbages were grown in a greenhouse in Almería, Spain.

Preparation of the test item

Before harvest, the red cabbages were treated with pesticides available as commercial formulations

Preparation of the test item

After harvesting, they were spiked with analytical standards

Preparation of the test item

Preparation of the test item

Preparation of the test item

Pesticides applied as analytical standards

Chlorpropham
Chlorpyrifos
Chlothianidin
Diazinon
Fenamidone
Fluxapyroxad
Propyzamide
Pyraclostrobin
Spinetoram
Teflubenzuron
Triflumuron
Tritosulfuron

Pesticides applied as commercial formulations

Acetamiprid
Chlorantraniliprole
Difenoconazole
Dimethoate
Metaflumizone
Penthiopyrad
Propamocarb
Trifloxystrobin

Homogeneity

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

Stability

1st Analysis - prior to the sample shipment

2nd Analysis - after the deadline for reporting results

3rd Analysis - reproducing the delivery conditions that the samples experienced during 48 hours

All the pesticides passed the homogeneity and stability tests

Participation

Total No. of Labs = 190	Total No. of Countries = 42
EU/EFTA Labs = 173	EU/EFTA countries = 31
Other countries Labs =17	Other countries = 11

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Other countries Labs =17	Other countries = 11

1 participant did not submit results (cancelled its participation)

⇩

172 EU/EFTA Labs

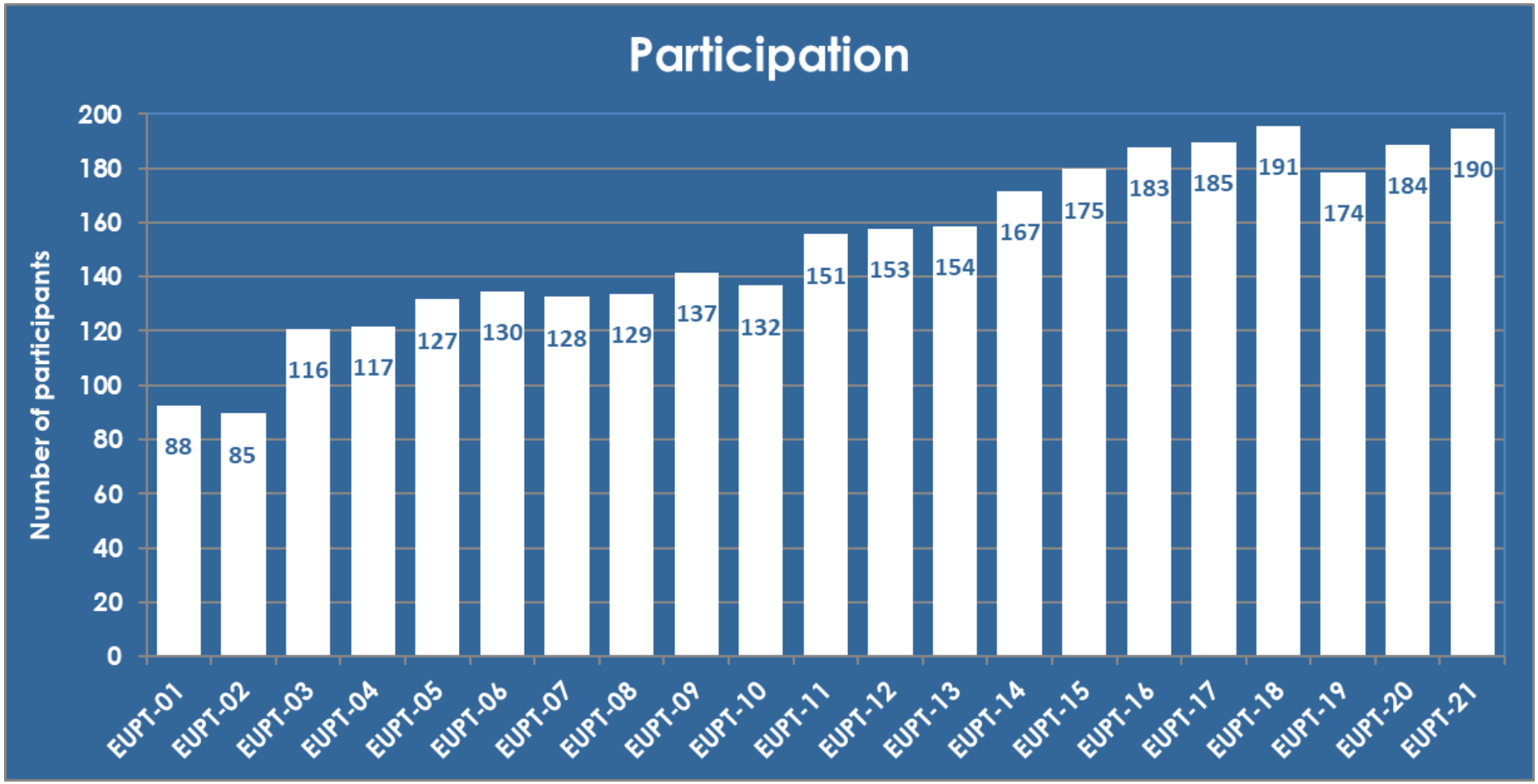
Participation

Member State	No. Labs
Austria	1
Belgium	6
Bulgaria	4
Croatia	8
Cyprus	1
Czech Republic	3
Denmark	2
Estonia	2
Finland	3
France	8
Germany	28
Greece	4
Hungary	4
Iceland	1
Ireland	1
Italy	25

Member State	No. Labs
Latvia	1
Lithuania	1
Luxembourg	2
Malta	2
Norway	1
Poland	12
Portugal	3
Romania	5
Slovakia	1
Slovenija	2
Spain	33
Sweden	2
Switzerland	4
The Netherlands	2
United Kingdom	4

Non-EU/EFTA	No. Labs
China	5
Colombia	1
Costa Rica	1
Kenya	1
Peru	1
Saudi Arabia	1
Serbia	3
Singapore	1
Thailand	1
Turkey	1
Uruguay	1

Participation



Results

Assigned values

Voluntary Pesticides

	Robust Mean X* (mg/kg)
Omethoate	0,008
Chlorpyrifos	0,051
Chlothianidin	0,052
Spinetoram	0,056
Tritosulfuron	0,066
Pyraclostrobin	0,076
Diazinon	0,077
Propyzamide	0,083
Chlorpropham	0,084
Teflubenzuron	0,110
Dimethoate	0,124
Chlorantraniprole	0,136
Difenoconazole	0,169
Propamocarb (only parent compound)	0,170
Acetamiprid	0,174
Metaflumizone (sum of E- and Z- isomers)	0,210
Penthiopyrad	0,223
Trifloxystrobin	0,230
Triflumuron	0,469
Fluxapyroxad	0,536
Fenamidone	0,615

Assigned values

Voluntary Pesticides

0.008-0.084 mg/kg

	Robust Mean X* (mg/kg)
Omethoate	0,008
Chlorpyrifos	0,051
Chlothianidin	0,052
Spinetoram	0,056
Tritosulfuron	0,066
Pyraclostrobin	0,076
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Assigned values

Voluntary Pesticides

0.008-0.084 mg/kg

0.110-0.615 mg/kg

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	MRRL (mg/kg)	Robust Mean (mg/kg)	CV (%)	Uncertainty (mg/kg)
Acetamiprid	0,010	0,174	13,0	0,002
Chlorantraniprole	0,010	0,136	15,2	0,002
Chlorpropham	0,010	0,084	14,0	0,001
Chlorpyrifos	0,010	0,051	17,6	0,001
Chlothianidin	0,010	0,052	15,5	0,001
Diazinon	0,005	0,077	15,3	0,001
Difenoconazole	0,010	0,169	17,2	0,003
Dimethoate	0,003	0,124	13,0	0,002
Fenamidone	0,010	0,615	15,2	0,009
Fluxapyroxad	0,010	0,536	12,4	0,008
Metaflumizone (sum of E- and Z- isomers)	0,010	0,210	23,6	0,006
Omethoate	0,003	0,008	22,3	0,000
Penthiopyrad*	0,010	0,223	12,4	0,004
Propamocarb (only parent compound)	0,010	0,170	17,8	0,003
Propyzamide	0,010	0,083	15,0	0,001
Pyraclostrobin	0,010	0,076	15,2	0,001
Spinetoram*	0,010	0,056	21,6	0,002
Teflubenzuron	0,010	0,110	18,4	0,002
Trofloxystrobin	0,010	0,230	13,4	0,003
Triflumuron	0,010	0,469	17,3	0,009
Tritosulfuron*	0,010	0,066	19,7	0,002

* Voluntary compounds

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Assigned value < 3 x MRRL

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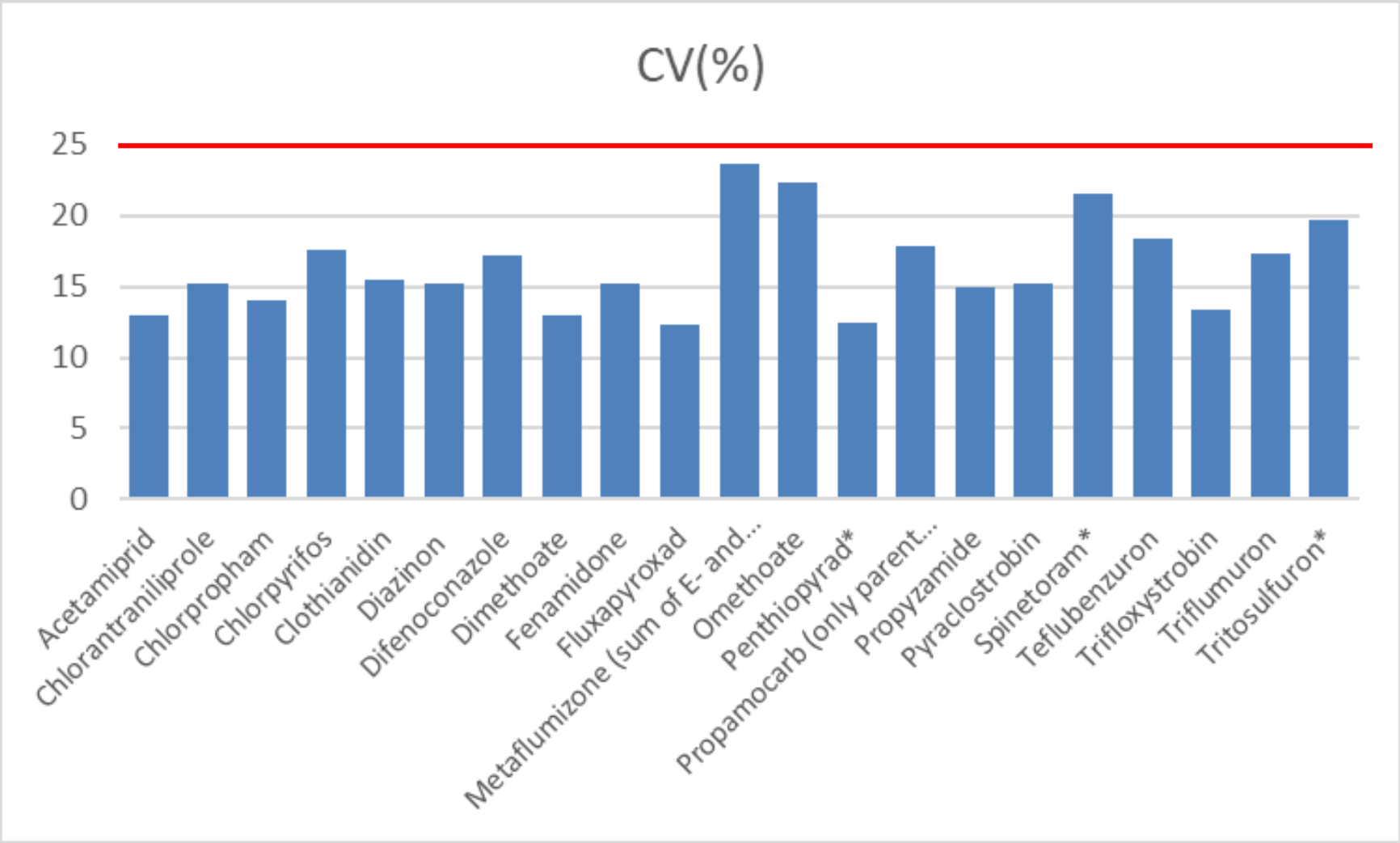
Assigned value < 3 x MRRL

Not included in the evaluation
Information shown only for informative purposes

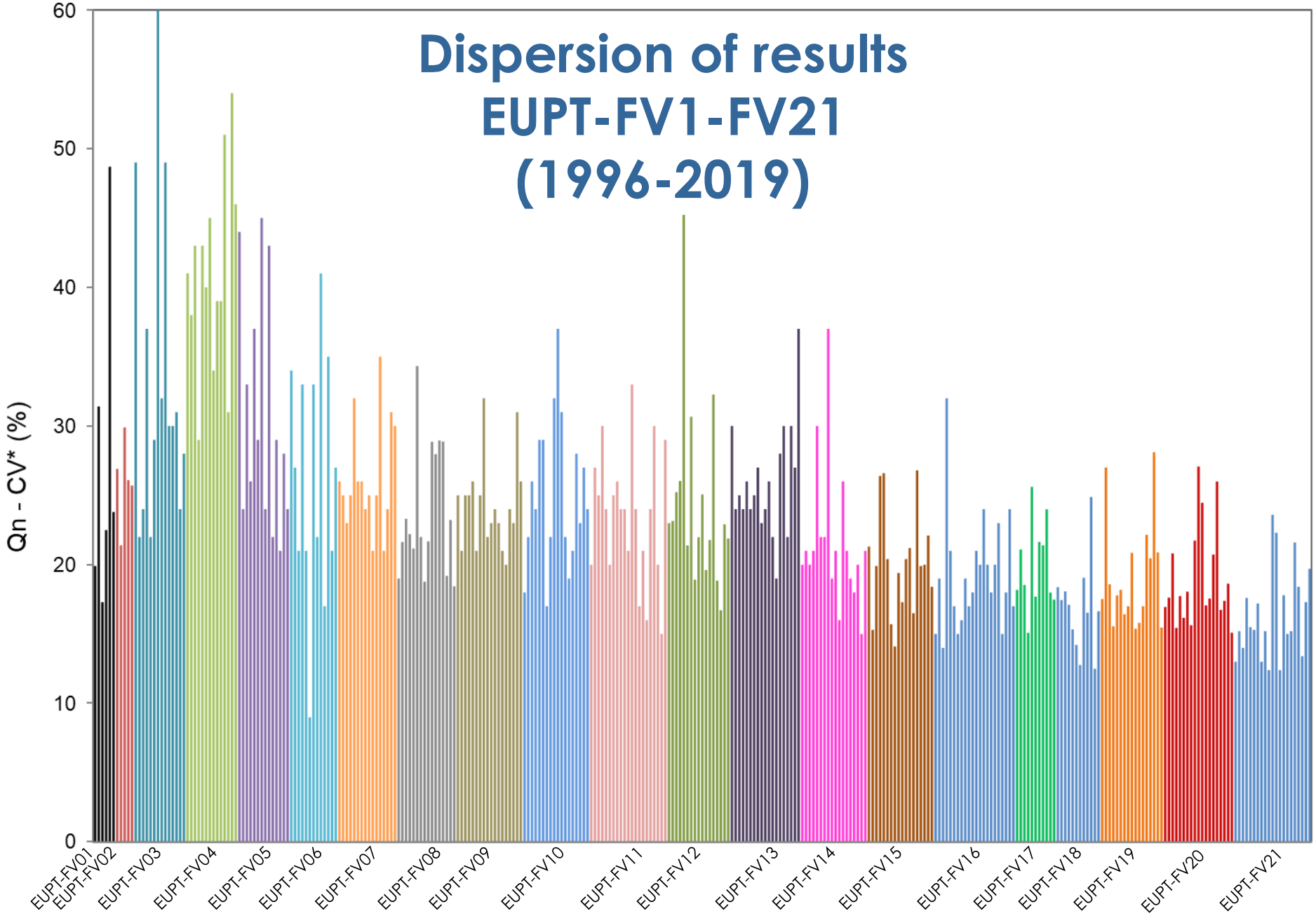
* Voluntary compounds

Dispersion of Results



* Voluntary compounds

Dispersion of results EUPT-FV1-FV21 (1996-2019)



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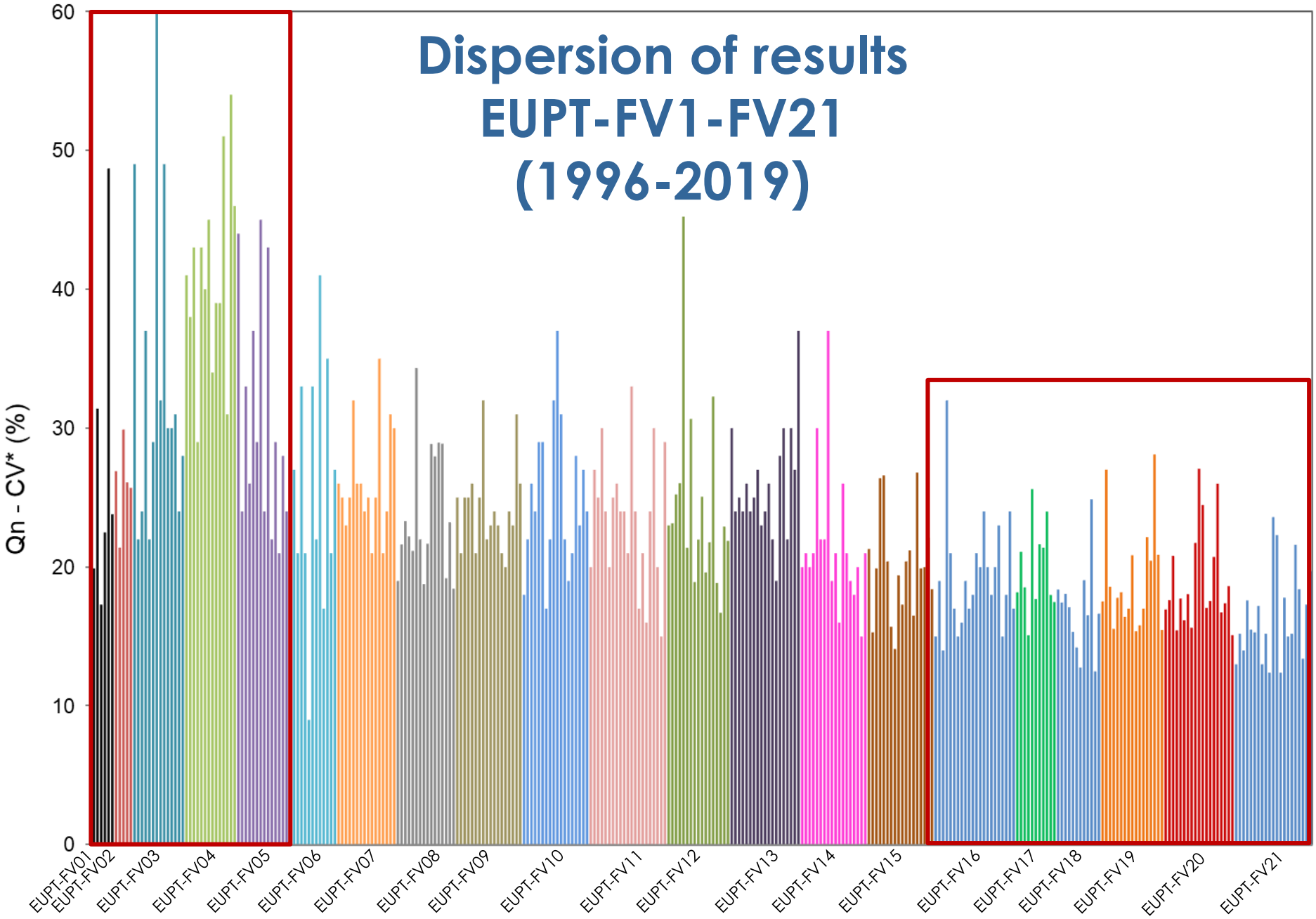

Pesticides	No. of Reported Results	No. of False Negative Results	No. of Not Analysed Results	Percentage of Labs Reporting Results (out of 172)
Acetamiprid	154	3	15	89
Chlorantraniliprole	139	5	28	80
Chlorpropham	159	4	9	92
Chlorpyrifos	168	1	3	97
Clothianidin	149	4	19	86
Diazinon	166	0	6	96
Difenoconazole	166	3	3	96
Dimethoate	166	0	6	96
Fenamidone	156	4	12	90
Fluxapyroxad	110	5	57	64
Metaflumizone (sum of E- and Z- isomers)	119	6	47	69
Omethoate	122	-	14	71
Penthiopyrad*	87	9	76	50
Propamocarb (only parent compound)	146	4	22	84
Propyzamide	158	1	13	91
Pyraclostrobin	154	4	14	89
Spinetoram*	86	8	78	50
Teflubenzuron	131	6	35	76
Trifloxystrobin	162	2	8	94
Triflumuron	137	5	30	79
Tritosulfuron*	44	15	113	25

* Voluntary compounds

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Chlorpyrifos	168	1	3	97
Clothianidin	149	4	19	86
Diazinon	166	0	6	96
Difenoconazole	166	3	3	96
Dimethoate	166	0	6	96
Fenamidone	156	4	12	90
Fluxapyroxad	110	5	57	64
Metaflumizone (sum of E- and Z- isomers)	119	6	47	69
Omethoate	122	-	14	71
Penthiopyrad*	87	9	76	50
Propamocarb (only parent compound)	146	4	22	84
Propyzamide	158	1	13	91
Pyraclostrobin	154	4	14	89
Spinetoram*	86	8	78	50
Teflubenzuron	131	6	35	76
Trifloxystrobin	162	2	8	94
Triflumuron	137	5	30	79
Tritosulfuron*	44	15	113	25

* Voluntary compounds

Pesticides	No. of Reported Results	No. of False Negative Results	No. of Not Analysed Results	Percentage of Labs Reporting Results (out of 172)
Acetamiprid	154	3	15	89
Chlorantraniliprole	139	5	28	80
Chlorpropham	159	4	9	92
Chlorpyrifos	168	1	3	97
Clothianidin	149	4	19	86
Diazinon	166	0	6	96
Difenoconazole	166	3	3	96
Dimethoate	166	0	6	96
Fenamidone	156	4	12	90
Fluxapyroxad	110	5	57	64
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* Voluntary compounds

z-Scores

Z Scores classification

$$z_i = \frac{(x_i - x_{pt})}{FFP\text{-}\sigma_{pt}}$$

$|z| \leq 2.0$ Acceptable

$2.0 < |z| < 3.0$ Questionable

$|z| \geq 3.0$ Unacceptable

Z Scores classification

* Voluntary compounds

Pesticides	Robust Mean (mg/kg)	% Acceptable z scores	% Questionable z scores	% Unacceptable z scores
Acetamiprid	0,174	94,3	1,9	3,8
Chlorantraniliprole	0,136	94,4	0,7	4,9
Chlorpropham	0,084	95,7	0,6	3,7
Chlorpyrifos	0,051	96,4	1,8	1,8
Clothianidin	0,052	96,7	0,0	3,3
Diazinon	0,077	96,4	3,0	0,6
Difenoconazole	0,169	92,3	3,6	4,1
Dimethoate	0,124	97,0	0,0	3,0
Fenamidone	0,615	95,0	1,9	3,1
Fluxapyroxad	0,536	92,2	1,7	6,1
Metaflumizone (sum of E- and Z- isomers)	0,210	87,2	5,6	7,2
Omethoate	0,008	92,6	3,3	4,1
Penthiopyrad*	0,223	89,6	0,0	10,4
Propamocarb (only parent compound)	0,170	93,3	2,0	4,7
Propyzamide	0,083	98,1	0,6	1,3
Pyraclostrobin	0,076	92,4	4,4	3,2
Spinetoram*	0,056	85,1	4,3	10,6
Teflubenzuron	0,110	92,7	0,7	6,6
Trifloxystrobin	0,230	97,6	0,6	1,8
Triflumuron	0,469	93,0	2,1	4,9
Tritosulfuron*	0,066	72,9	1,7	25,4

Z Scores classification

* Voluntary compounds

Pesticides	Robust Mean (mg/kg)	% Acceptable z scores	% Questionable z scores	% Unacceptable z scores
Acetamiprid	0,174	94,3	1,9	3,8
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Trifloxystrobin	0,230	97,6	0,6	1,8
Triflumuron	0,469	93,0	2,1	4,9
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Z Scores classification

* Voluntary compounds

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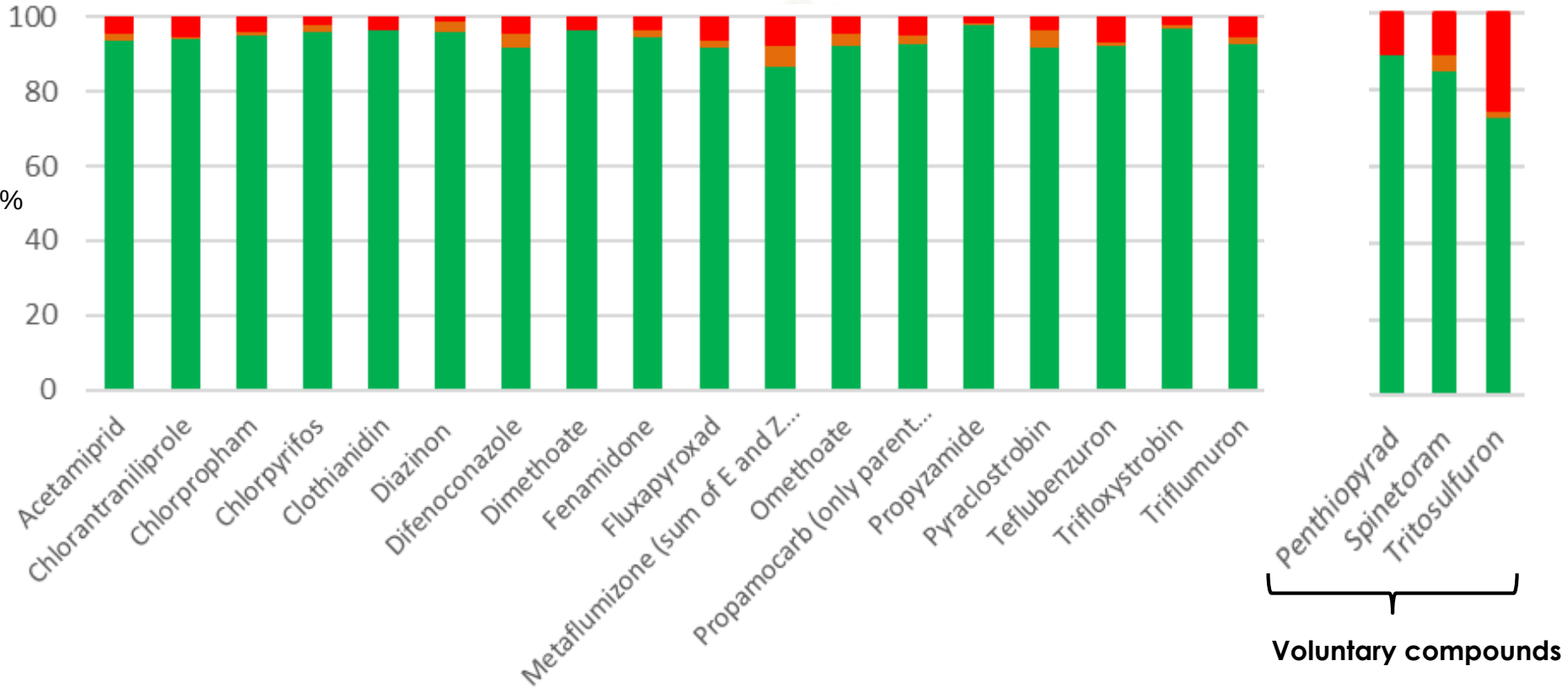
Pyraclostrobin	0,076	92,4	4,4	3,2
Spinetoram*	0,056	85,1	4,3	10,6
Teflubenzuron	0,1			
Trifloxystrobin	0,2			
Triflumuron	0,4			
Tritosulfuron*	0,066	72,9	1,7	25,4

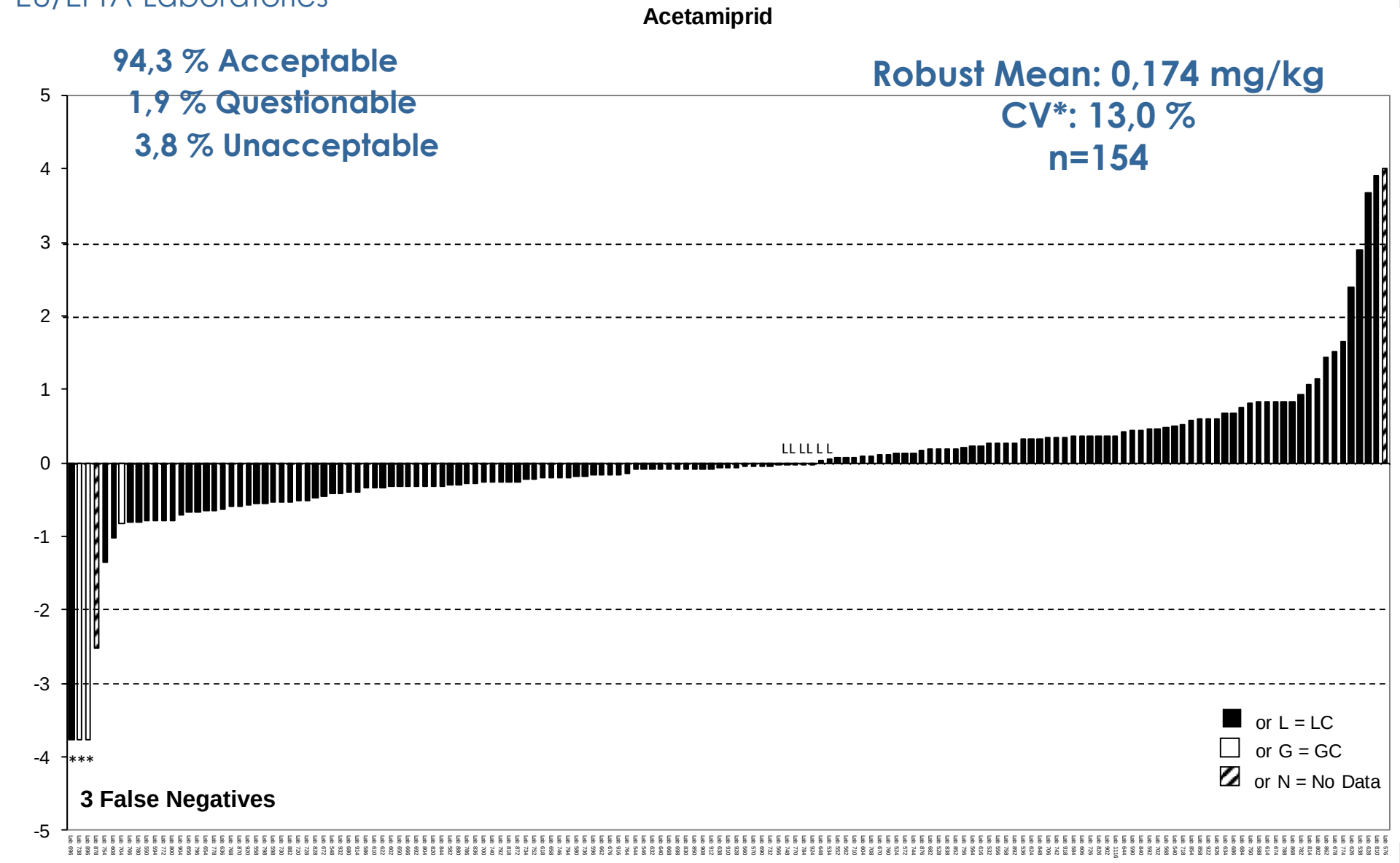
15 False Negative Results

Z Scores classification

EU/EFTA Laboratories



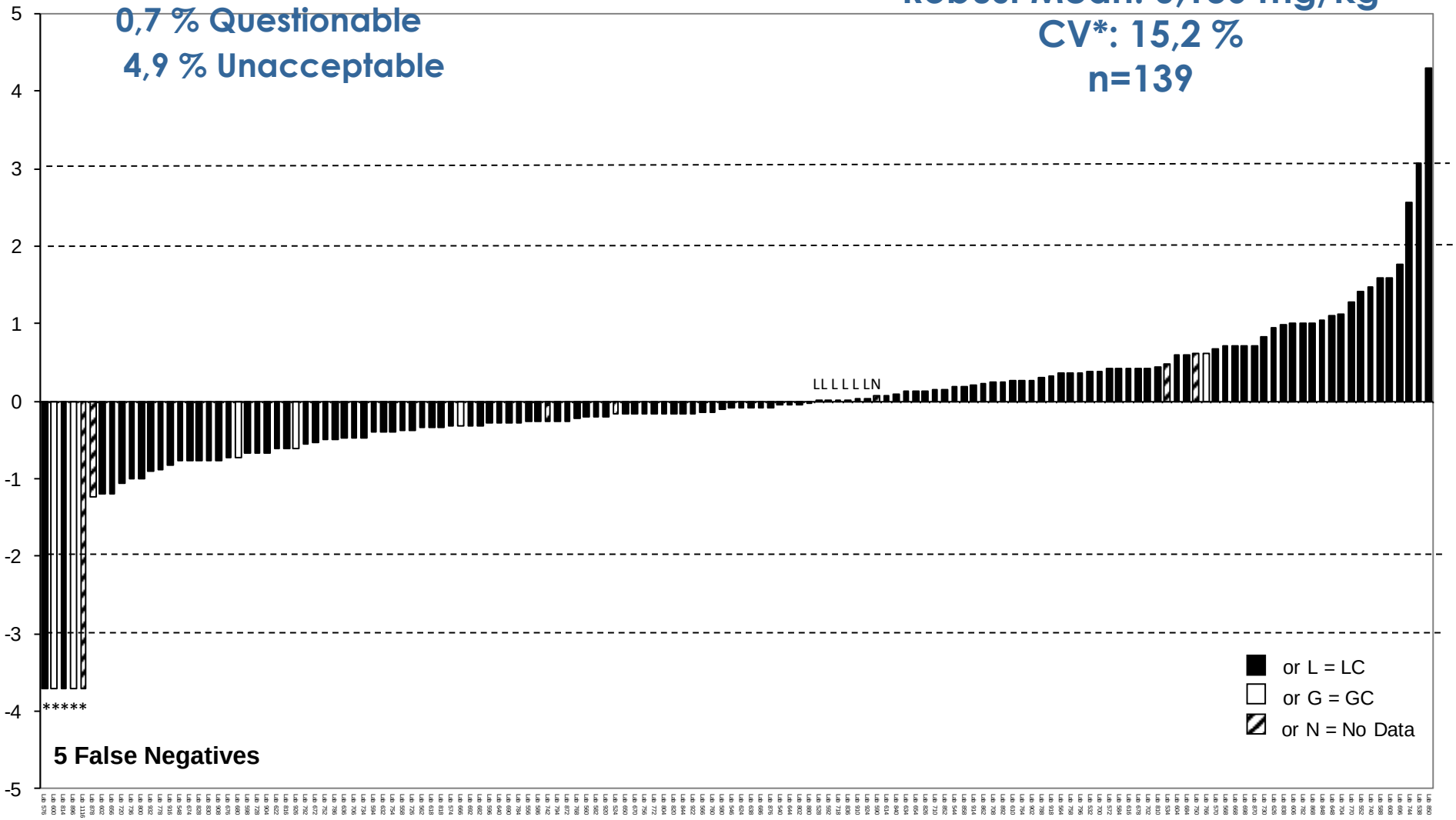
Acceptable **Questionable** **Unacceptable**


Acetamiprid
94,3 % Acceptable
1,9 % Questionable
3,8 % Unacceptable
Robust Mean: 0,174 mg/kg
CV*: 13,0 %
n=154
5
4
3
2
1
0
-1
-2
-3
-4
-5
***
3 False Negatives
or L = LC
or G = GC
or N = No Data

Chlorantraniprole

94,4 % Acceptable
0,7 % Questionable
4,9 % Unacceptable

Robust Mean: 0,136 mg/kg
CV*: 15,2 %
n=139

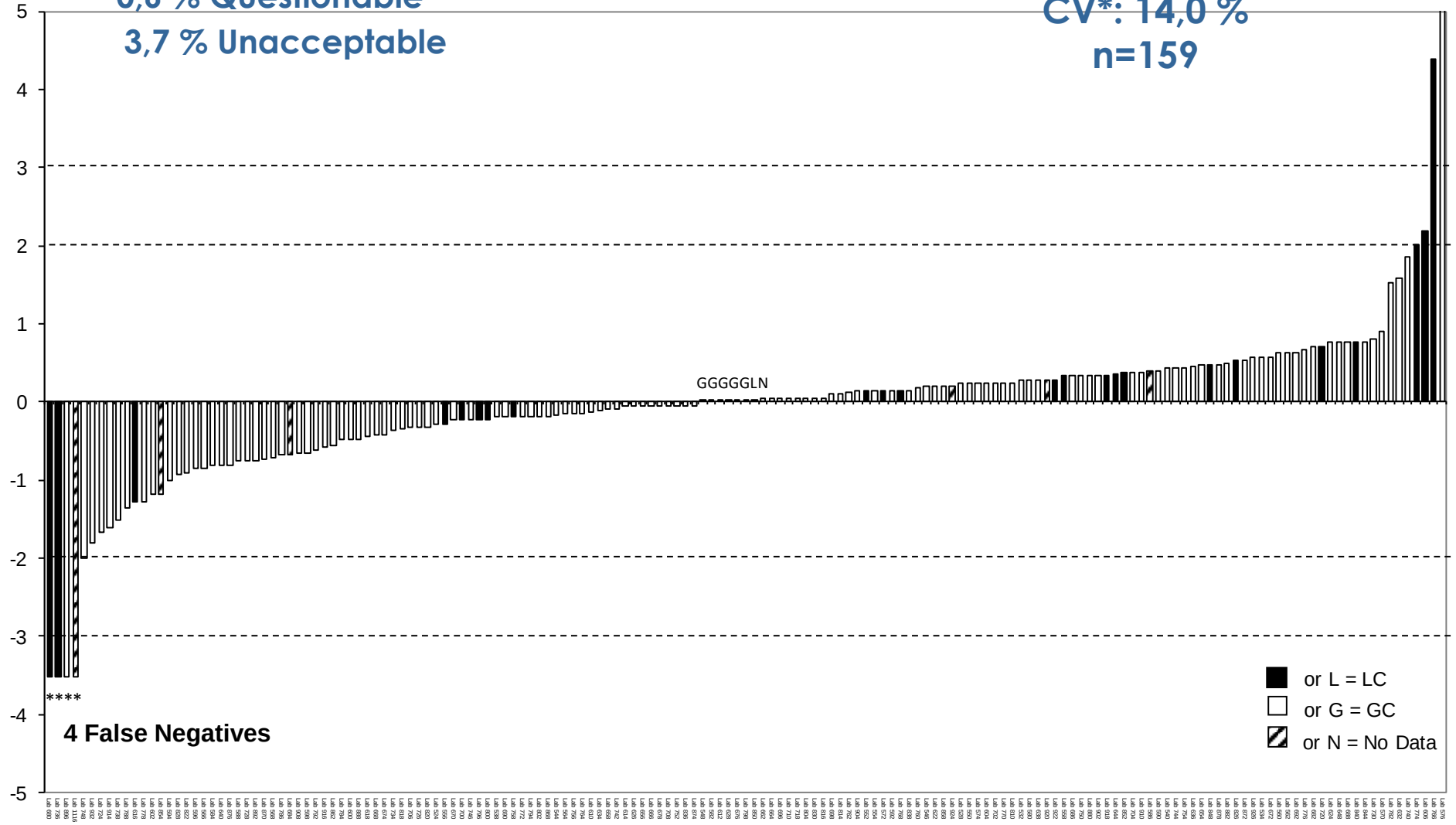


EU/EFTA Laboratories

Chlorpropham

95,7 % Acceptable
0,6 % Questionable
3,7 % Unacceptable

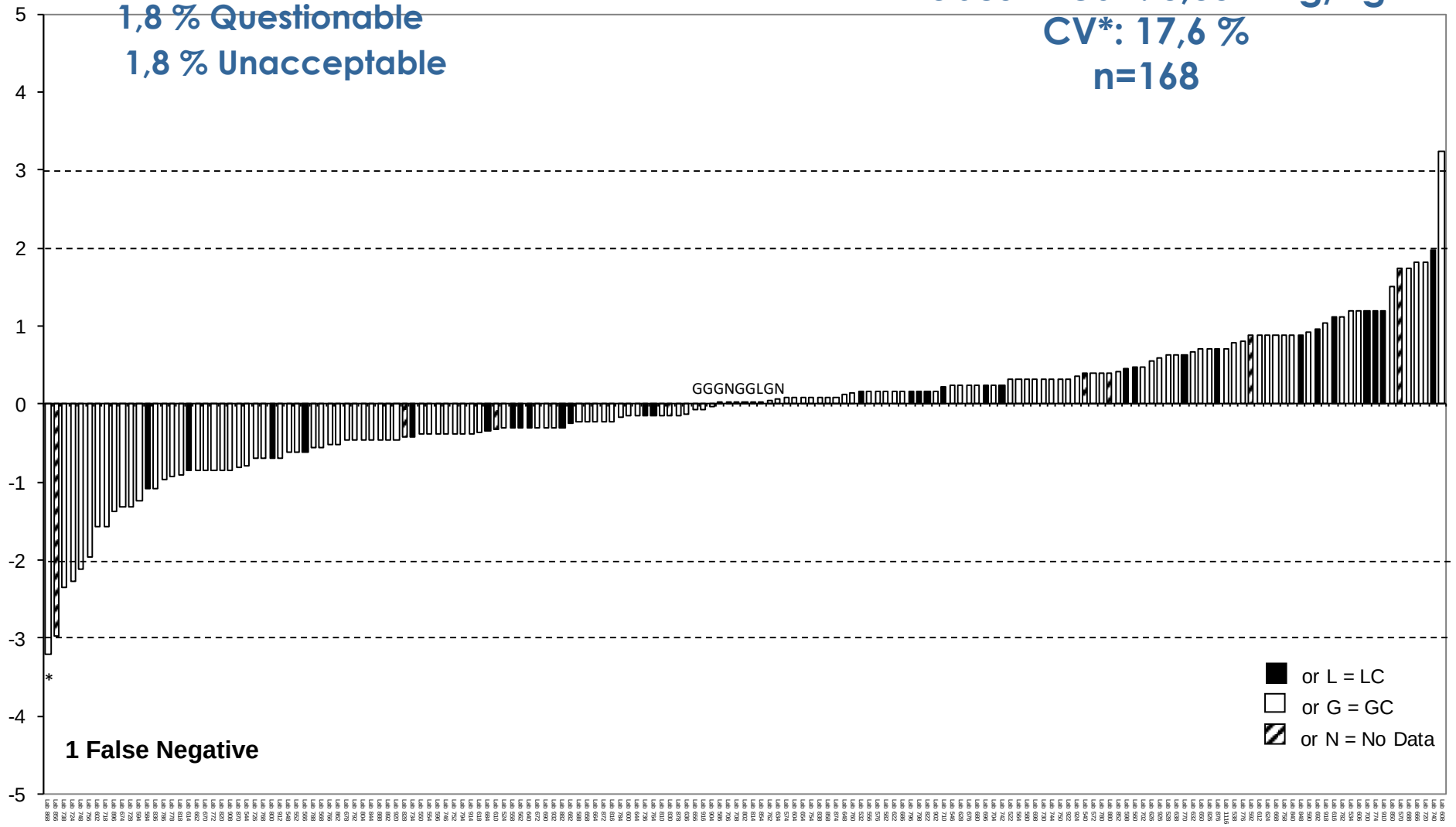
Robust Mean: 0,084 mg/kg
CV*: 14,0 %
n=159



Chlorpyrifos

96,4 % Acceptable
1,8 % Questionable
1,8 % Unacceptable

Robust Mean: 0,051 mg/kg
CV*: 17,6 %
n=168



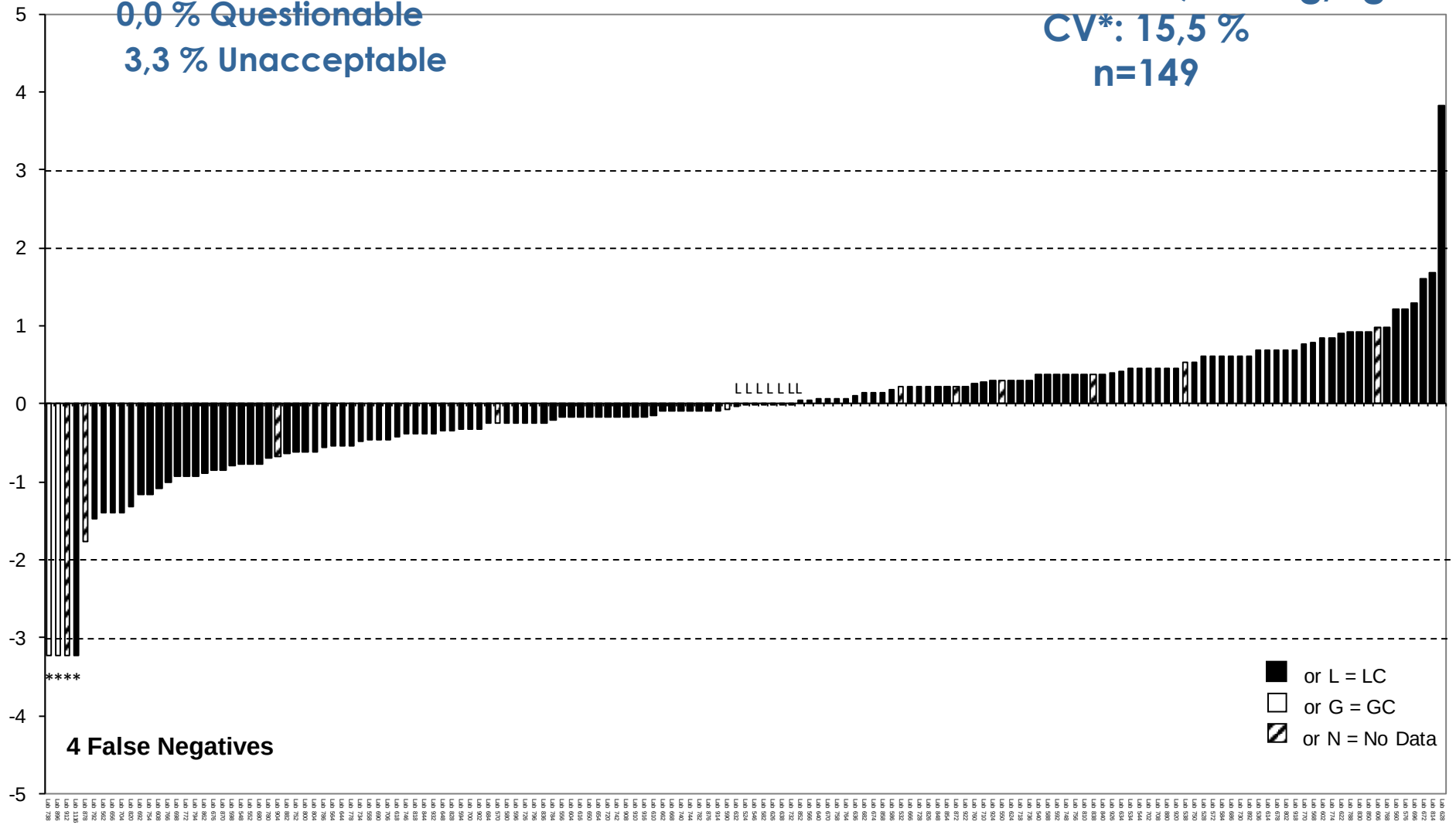
1 False Negative

EU/EFTA Laboratories

Chlothianidin

96,7 % Acceptable
0,0 % Questionable
3,3 % Unacceptable

Robust Mean: 0,052 mg/kg
CV*: 15,5 %
n=149

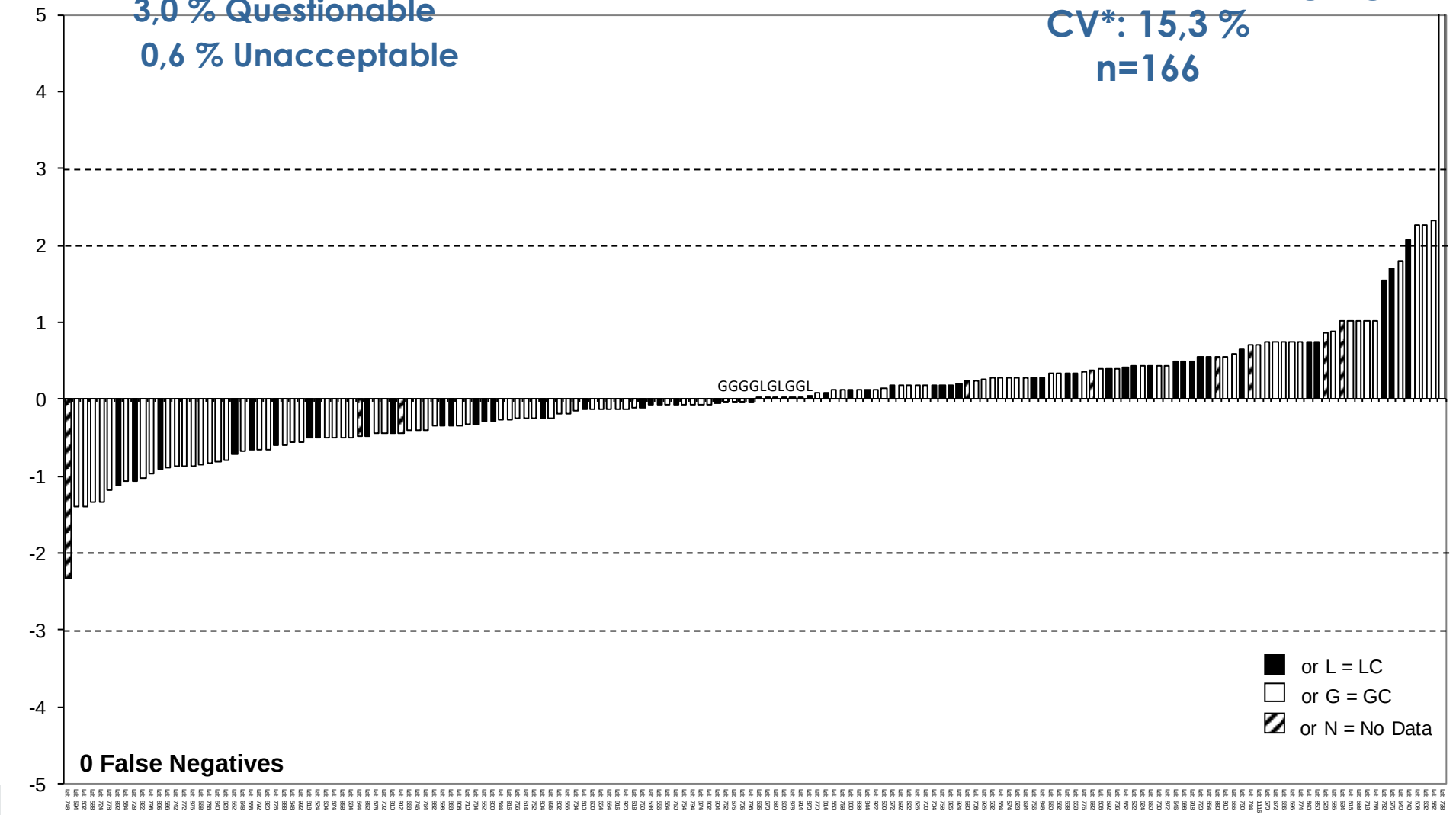


EU/EFTA Laboratories

Diazinon

96,4 % Acceptable
3,0 % Questionable
0,6 % Unacceptable

Robust Mean: 0,077 mg/kg
CV*: 15,3 %
n=166



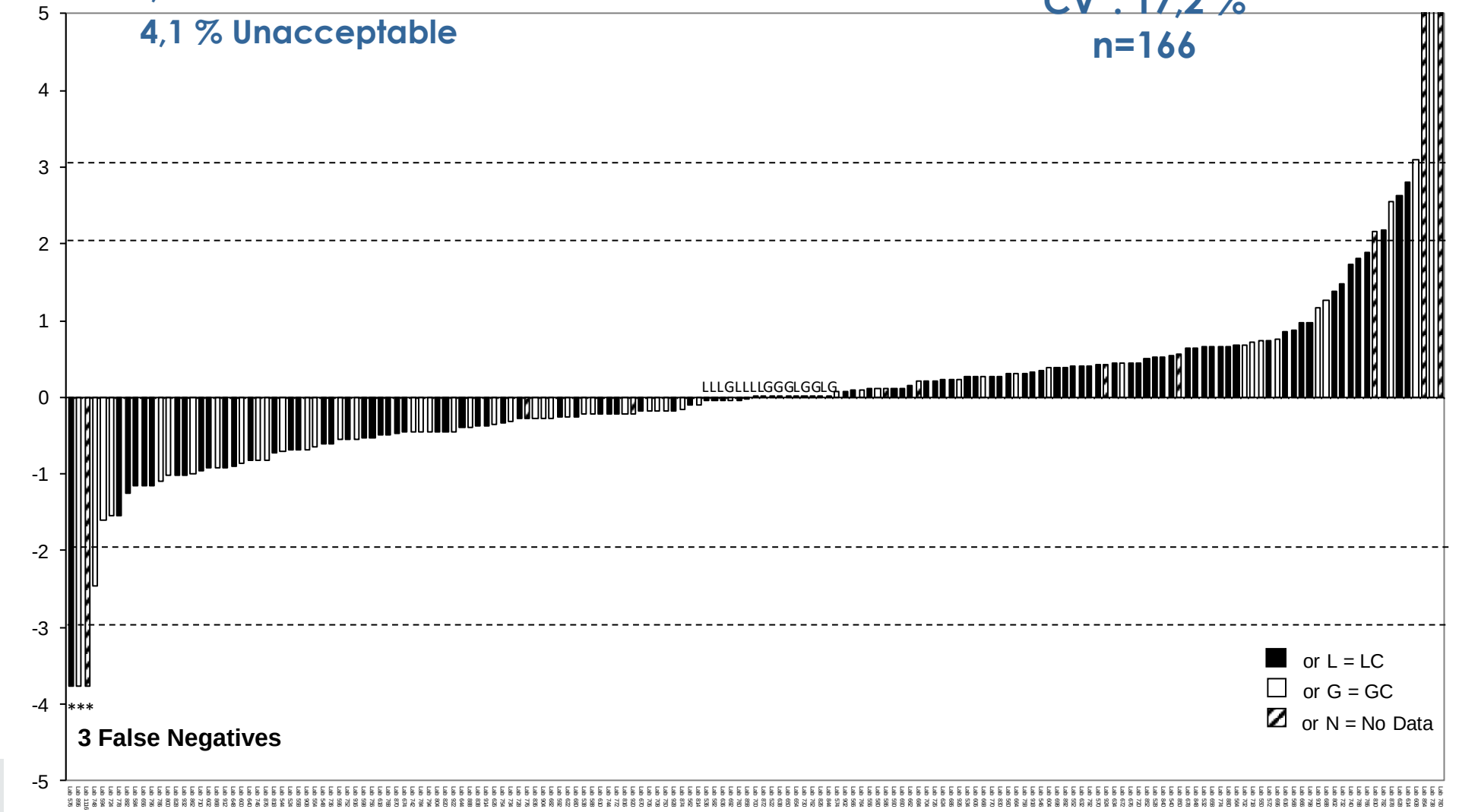
0 False Negatives

EU/EFTA Laboratories

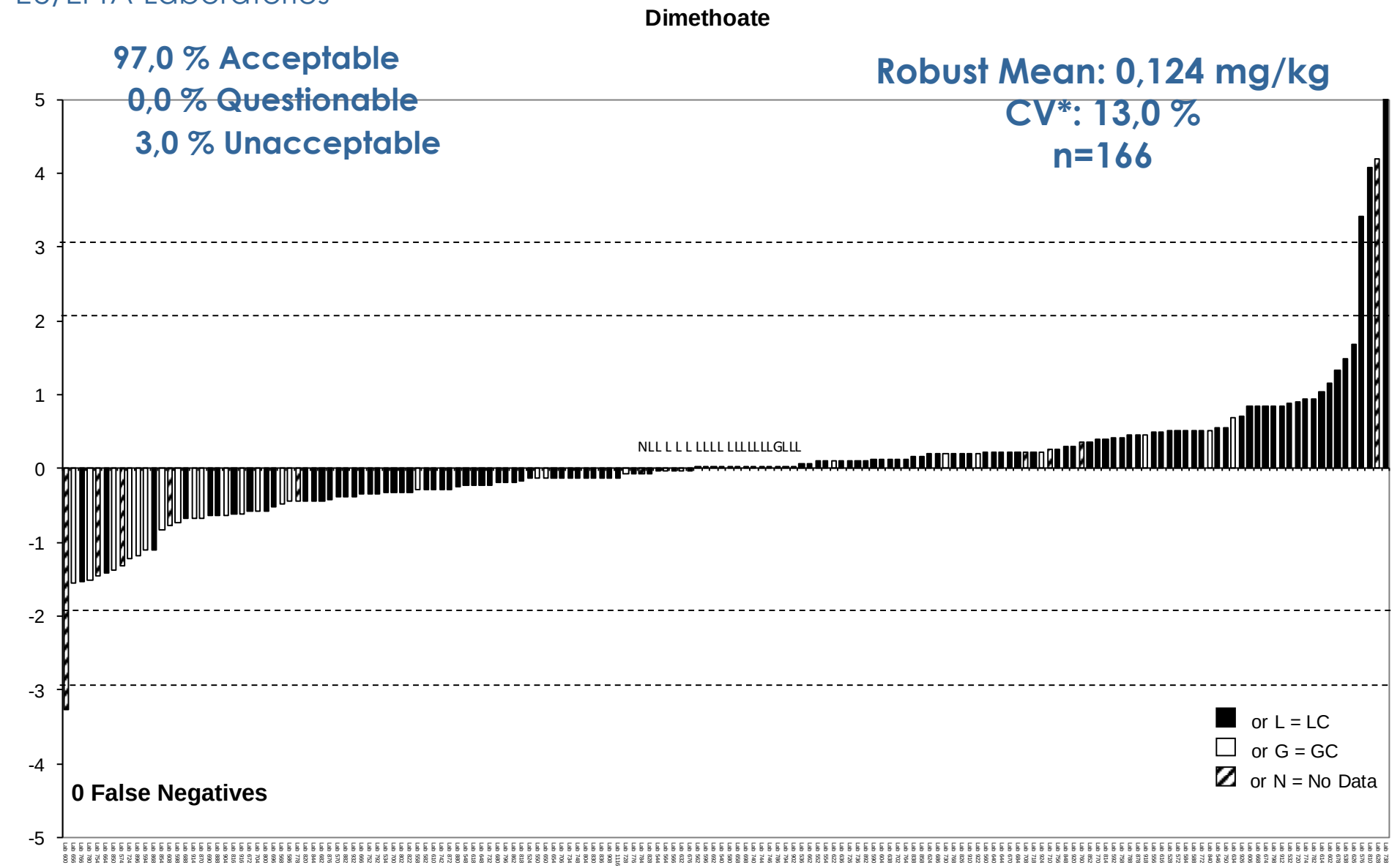
92,3 % Acceptable
3,6 % Questionable
4,1 % Unacceptable

Difenoconazole

Robust Mean: 0,169 mg/kg
CV*: 17,2 %
n=166



EU/EFTA Laboratories

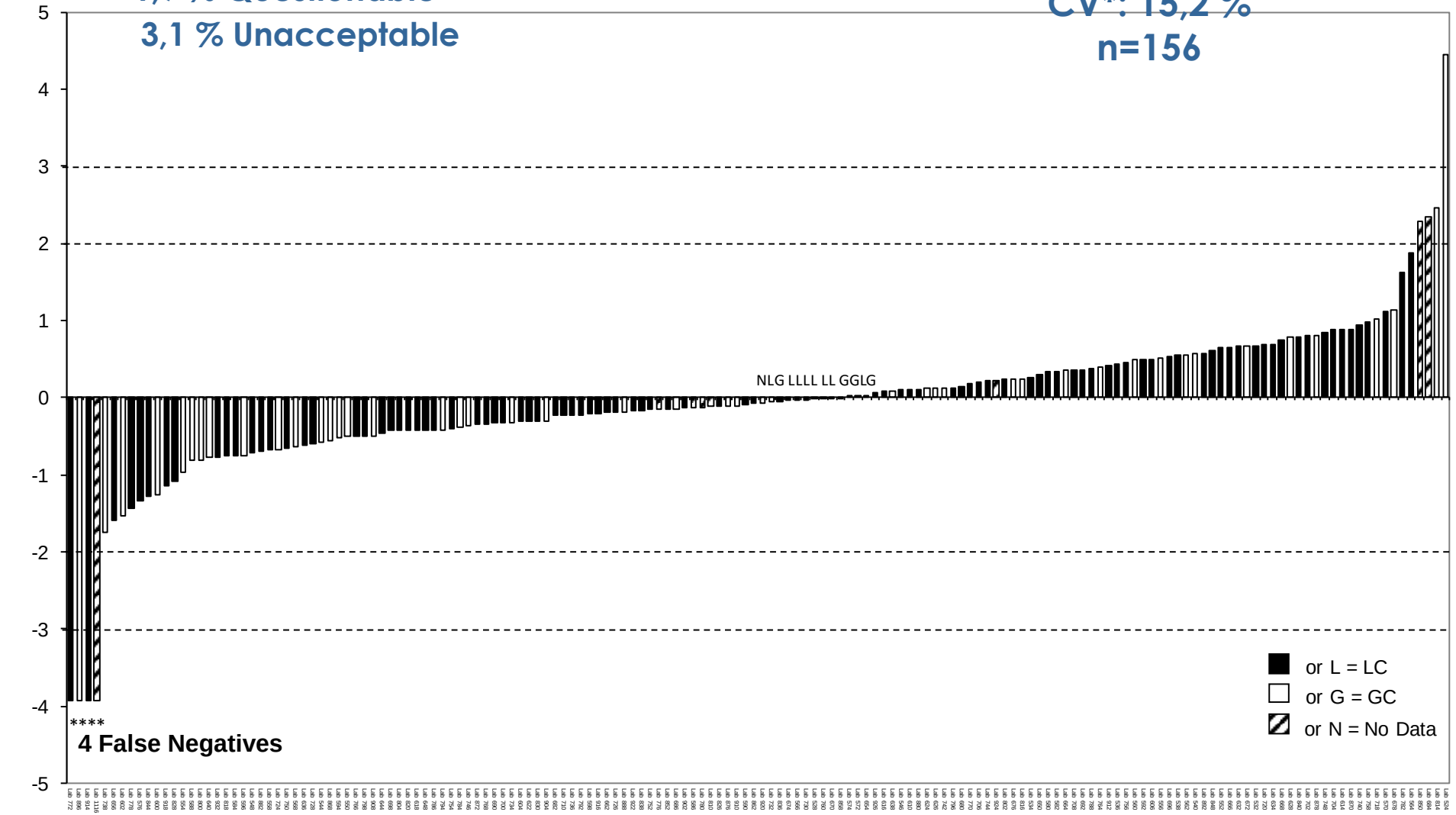


EU/EFTA Laboratories

Fenamidone

95,0 % Acceptable
1,9 % Questionable
3,1 % Unacceptable

Robust Mean: 0,615 mg/kg
CV*: 15,2 %
n=156

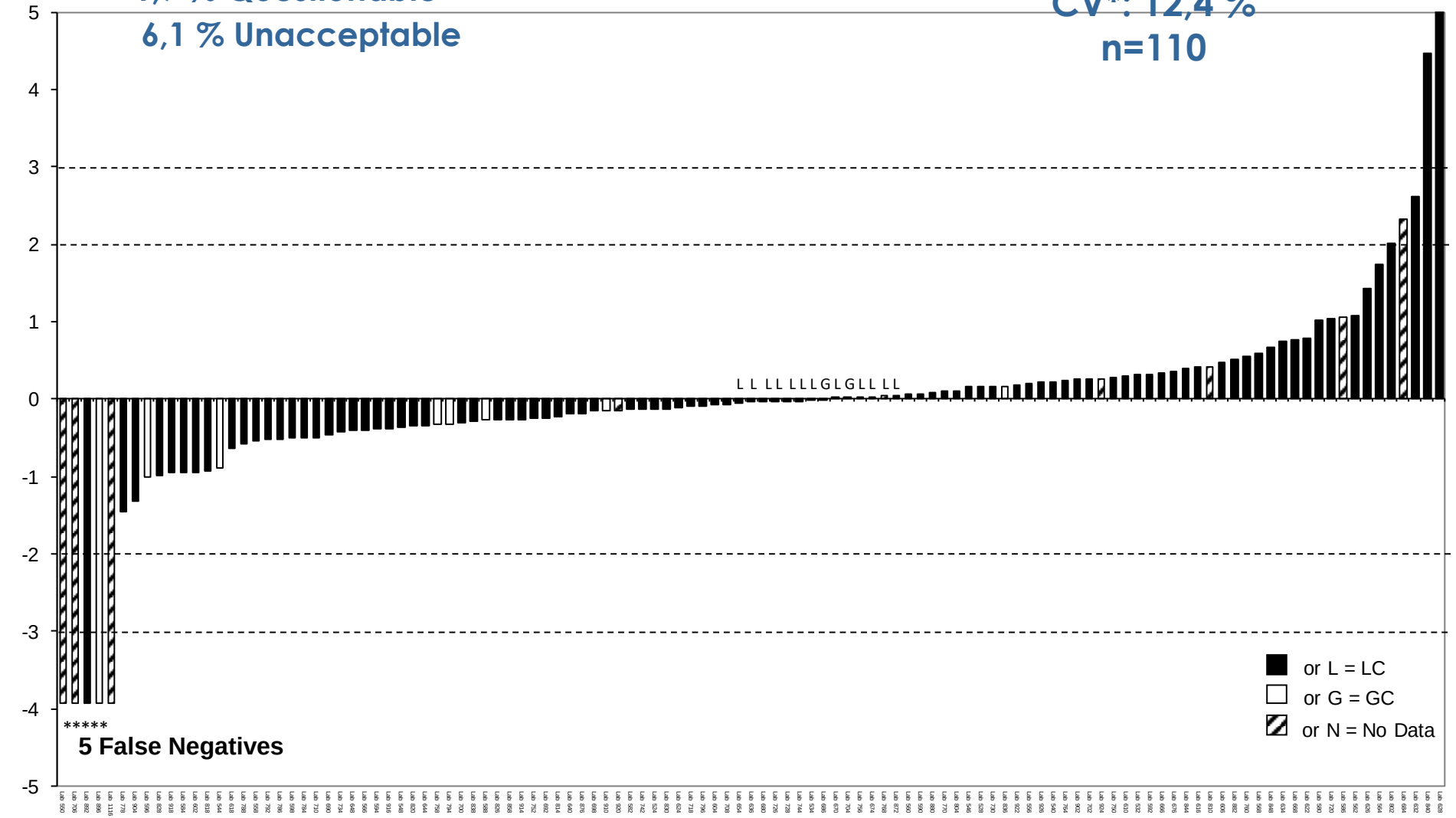


EU/EFTA Laboratories

Fluxapyroxad

92,2 % Acceptable
1,7 % Questionable
6,1 % Unacceptable

Robust Mean: 0,536 mg/kg
CV*: 12,4 %
n=110

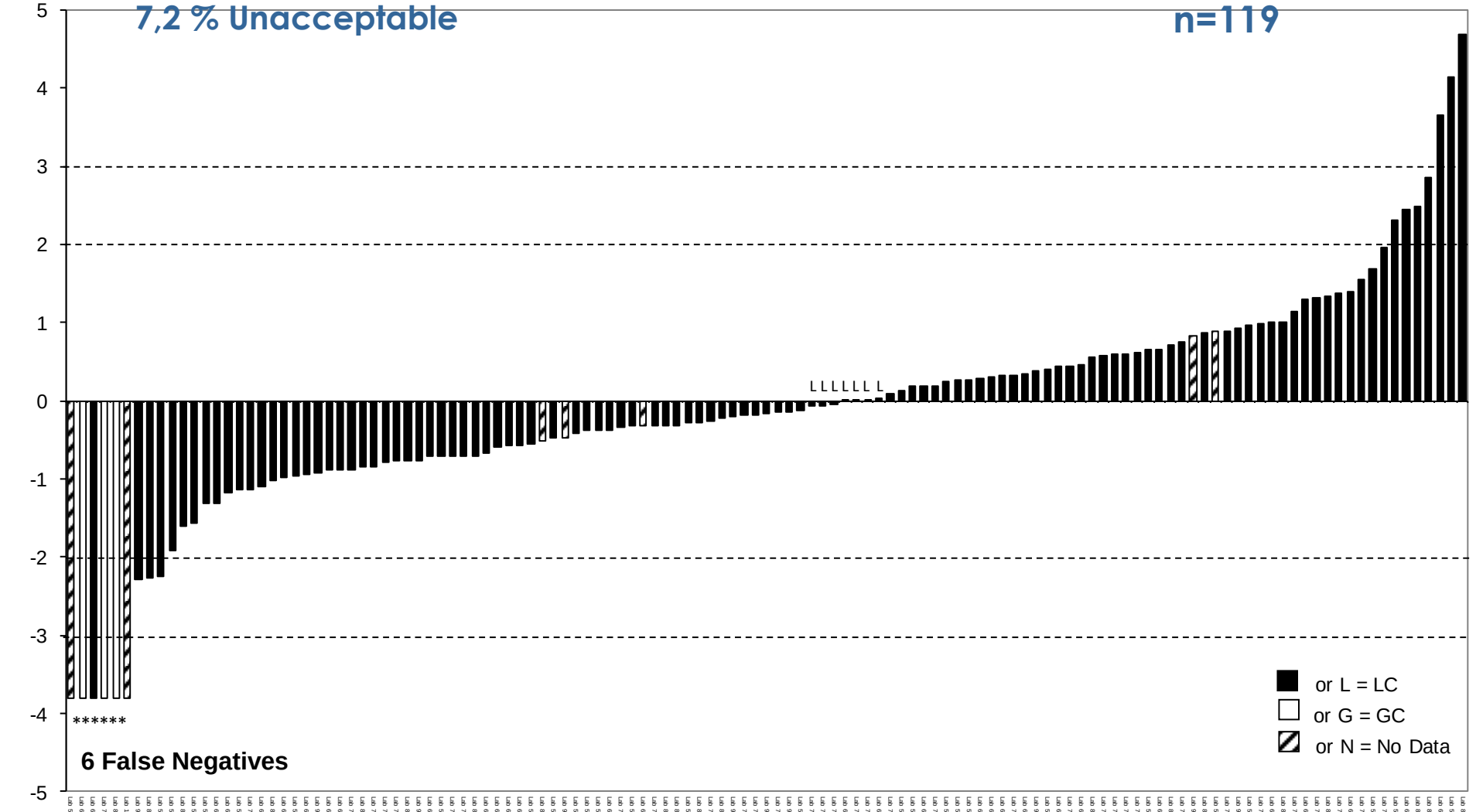


EU/EFTA Laboratories

87, 2 % Acceptable
5,6 % Questionable
7,2 % Unacceptable

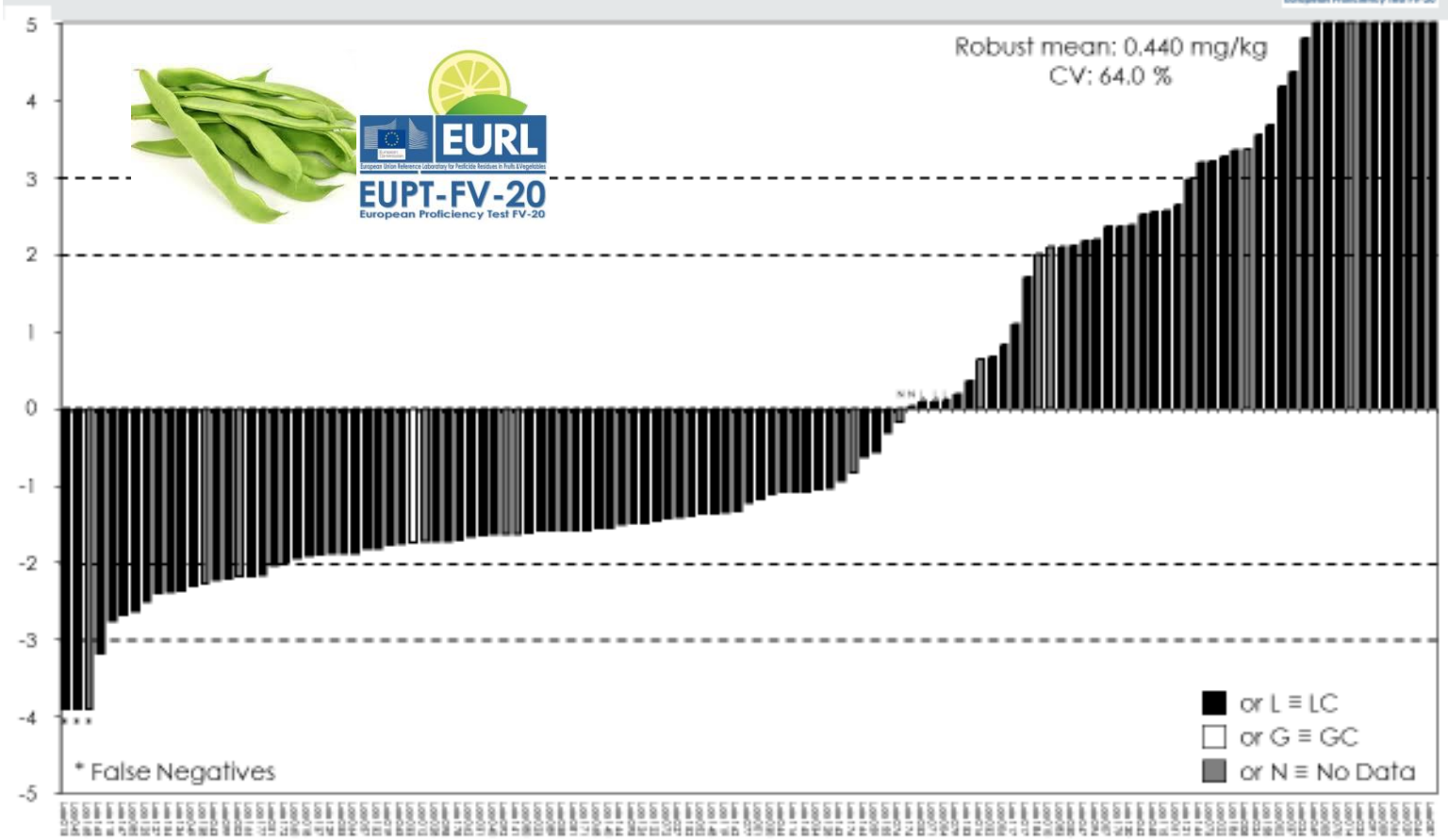
Metaflumizone (sum of E- and Z- isomers)

Robust Mean: 0,210 mg/kg
CV*: 23,6 %
n=119



EURL-FV
EUPT-FV-20

Metaflumizone



EUPT-FV20 Results

Metaflumizone

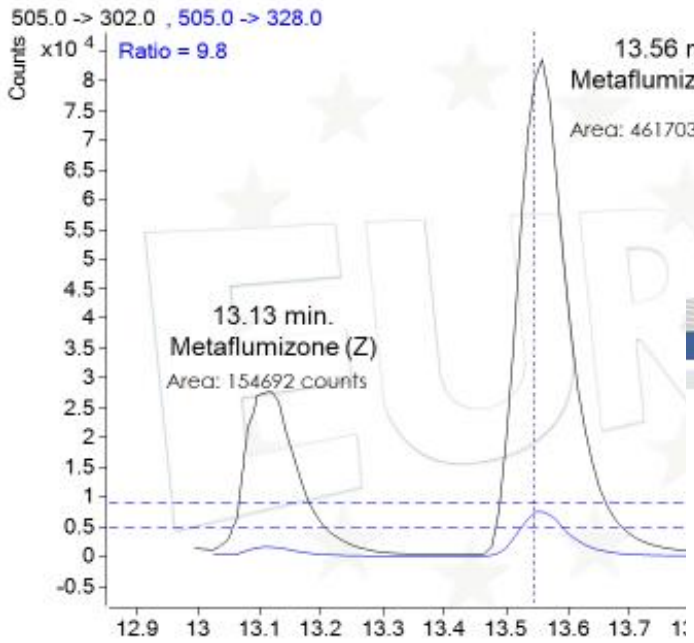
EURL-FV

EUPT-FV-21
European Proficiency Test FV-21

EURL-FV

EUPT-FV-20

Metaflumizone - Sample 209 FV20



Area ratio (E/Z): 2,9

EUPT-FV20 Results

EURL-FV

EUPT-FV-20

SIGMA-ALDRICH is now MERCK

PRODUCTS | SERVICES | INDUSTRIES | ACCOUNT

Spain Página Principal › 32966 - Metaflumizone

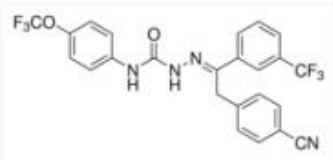
32966 Sigma-Aldrich

Metaflumizone

PESTANAL®, analytical standard

Synonym: 2'-[2-(4-Cyanophenyl)-1-(α,α,α-trifluoro-*m*-tolyl)ethylidene]-4-(trifluoromethoxy)carbanilohydrazide

CAS Number 139968-49-3 | Empirical Formula (Hill Notation) $C_{24}H_{16}F_6N_4O_2$ | Molecular Weight 506.40 | MDL number MFCD08690508 | Put



SDS

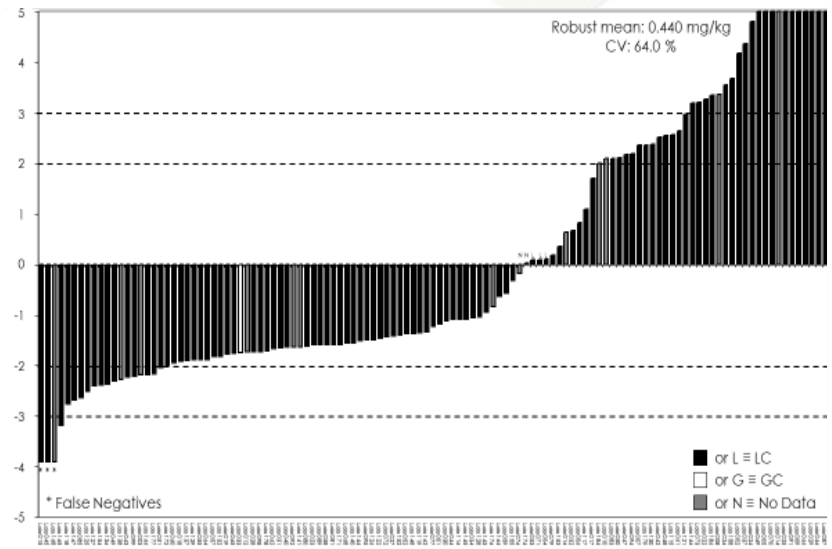
SKU-Tamaño de envase	Disponibilidad
32966-100MG	Sólo queda 5 disponible (más en camino) - DESDE

EUPT-FV21 Results

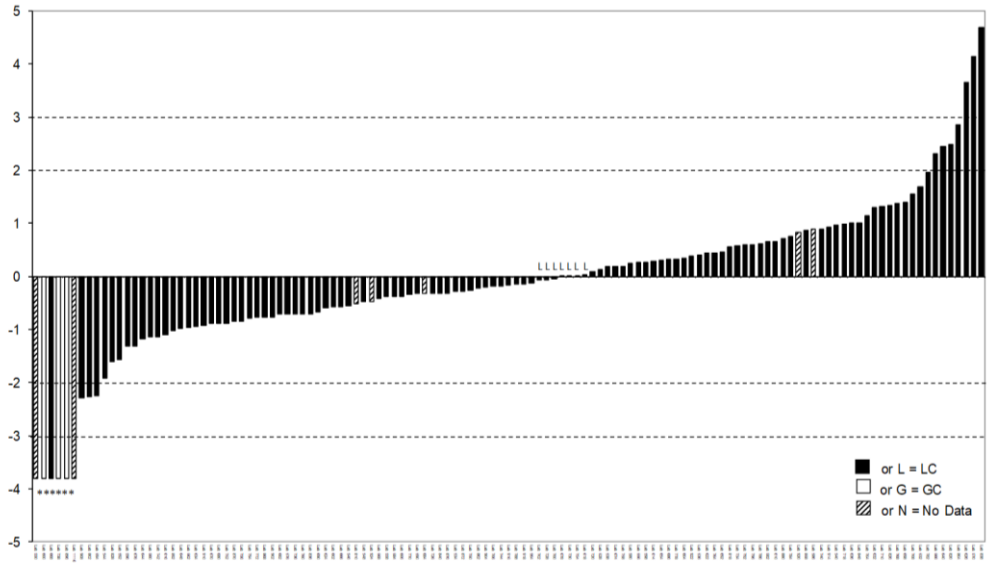
EUPT-FV20 Results

Metaflumizone

EUPT-FV20



EUPT-FV21

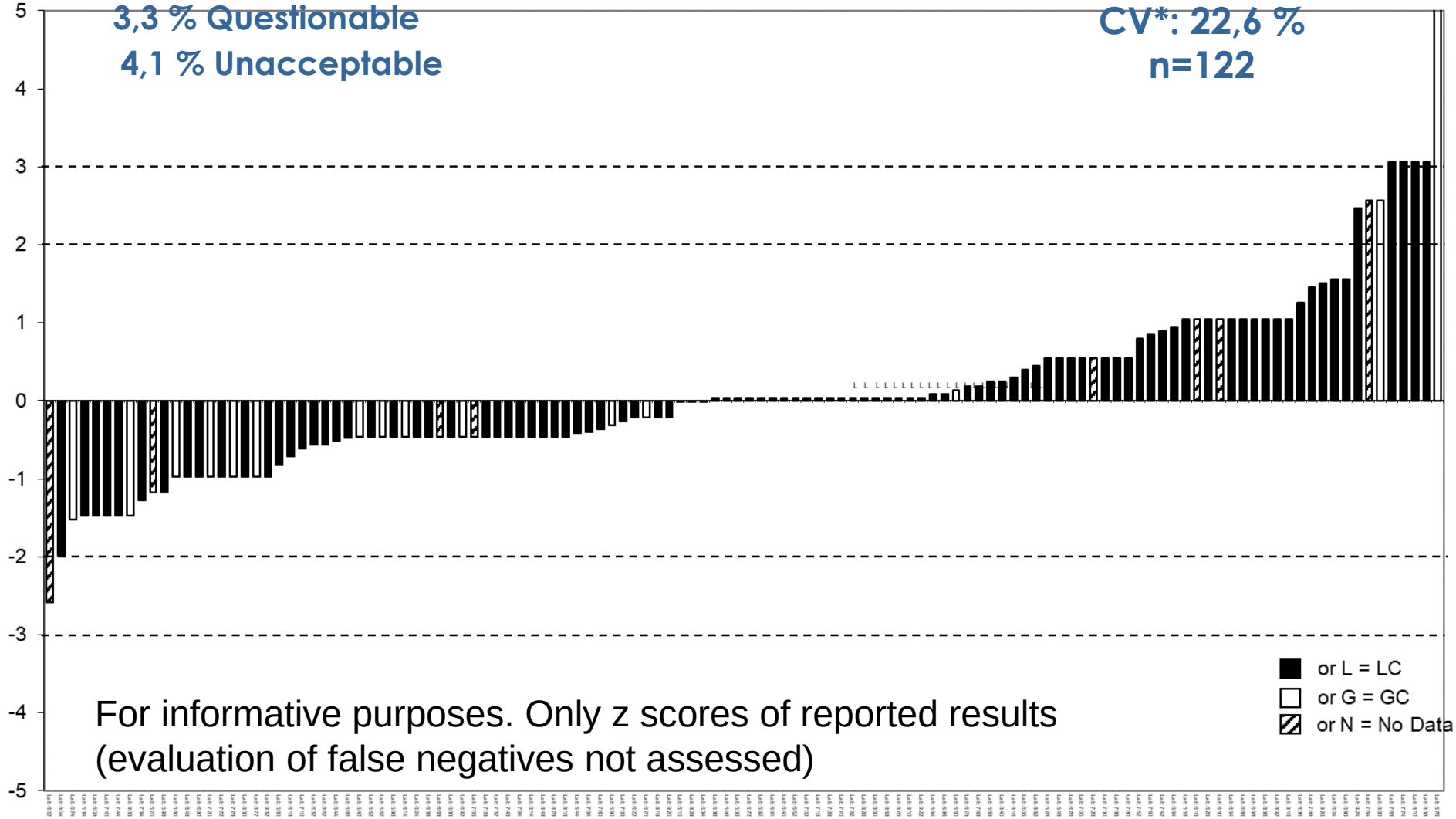


EU/EFTA Laboratories

Omethoate

92,6 % Acceptable
3,3 % Questionable
4,1 % Unacceptable

Robust Mean: 0,008 mg/kg
CV*: 22,6 %
n=122



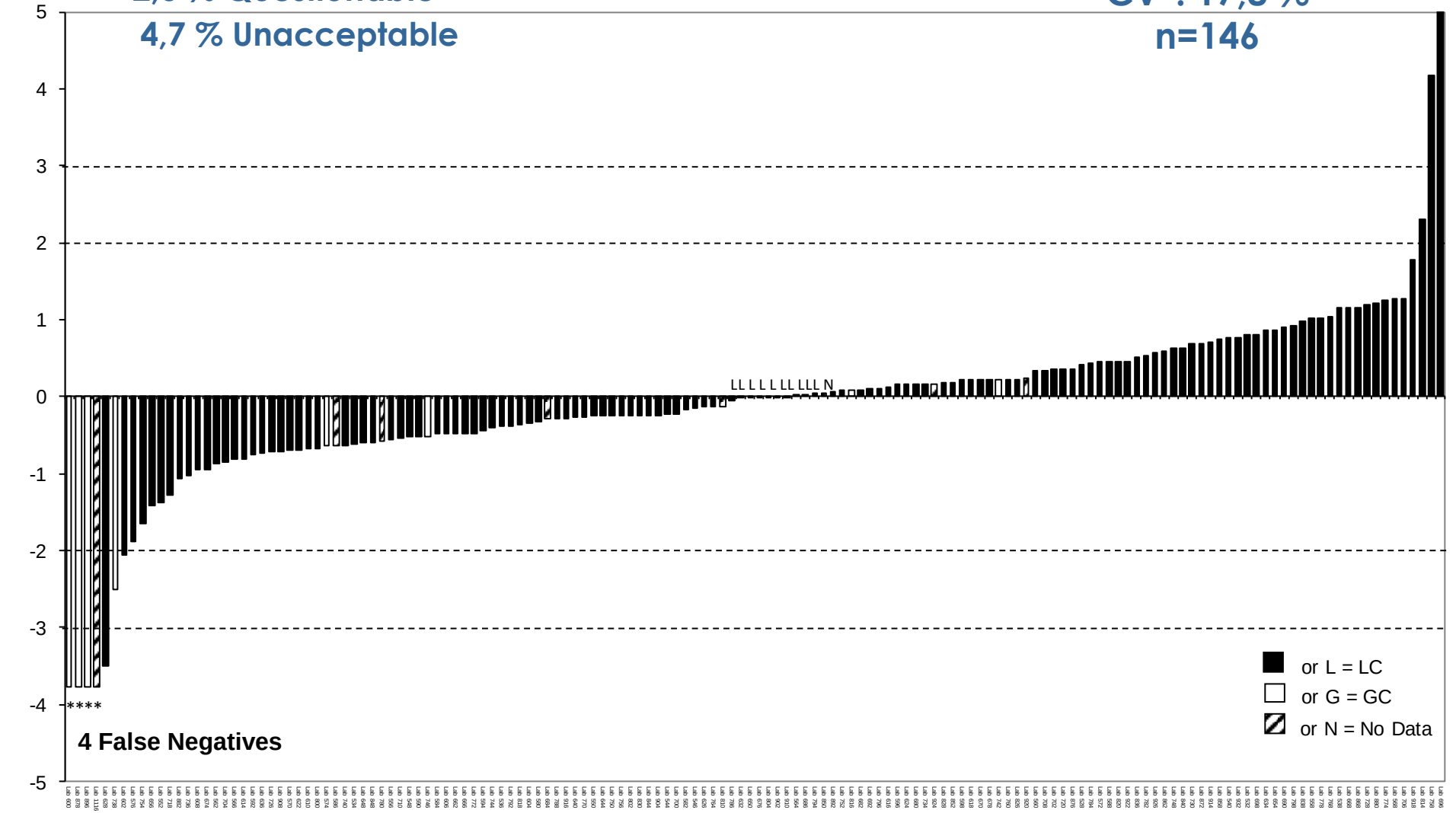
For informative purposes. Only z scores of reported results (evaluation of false negatives not assessed)

EU/EFTA Laboratories

Propamocarb

93,3 % Acceptable
2,0 % Questionable
4,7 % Unacceptable

Robust Mean: 0,170 mg/kg
CV*: 17,8 %
n=146

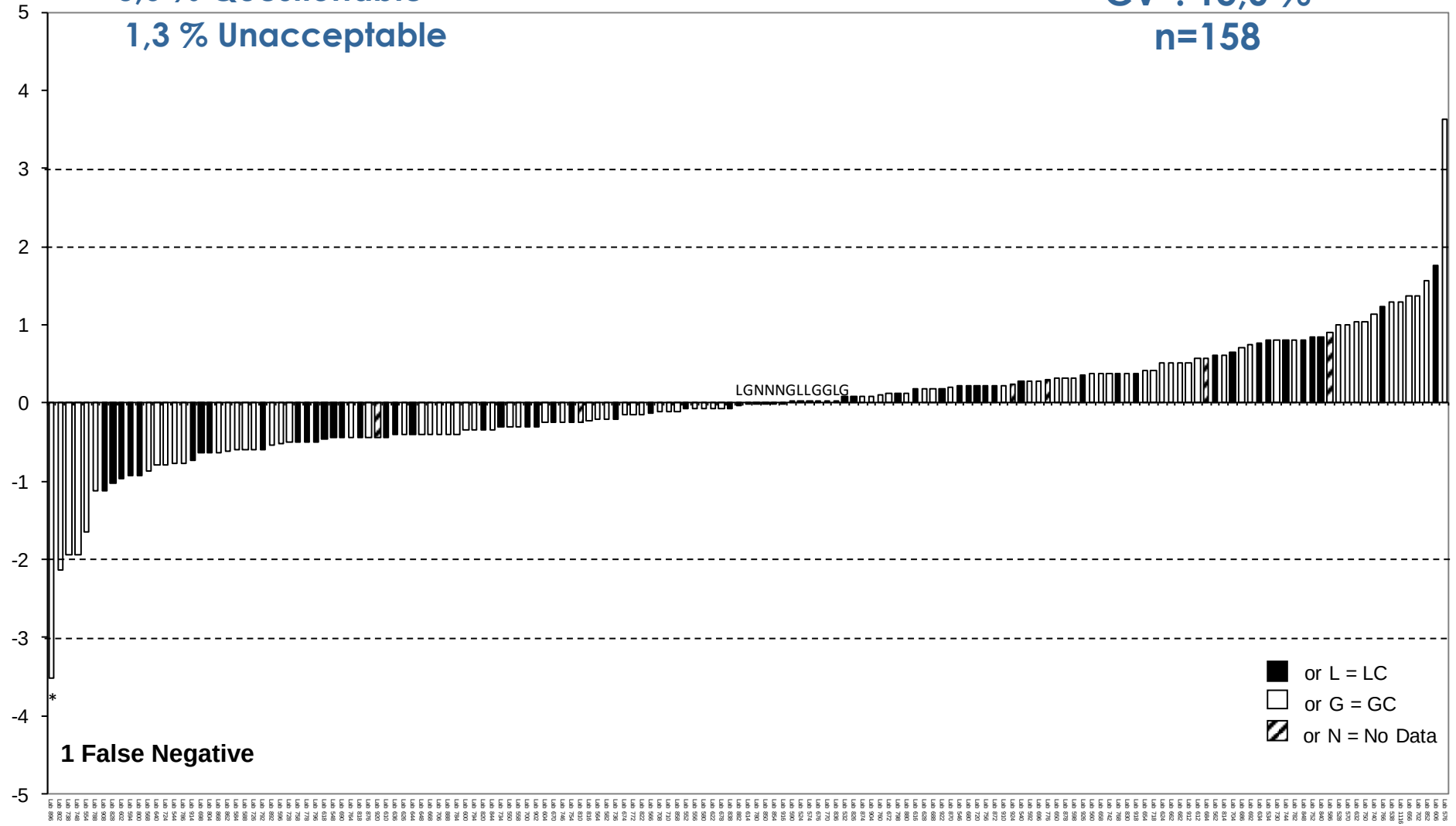


EU/EFTA Laboratories

Propyzamide

98,1 % Acceptable
0,6 % Questionable
1,3 % Unacceptable

Robust Mean: 0,083 mg/kg
CV*: 15,0 %
n=158



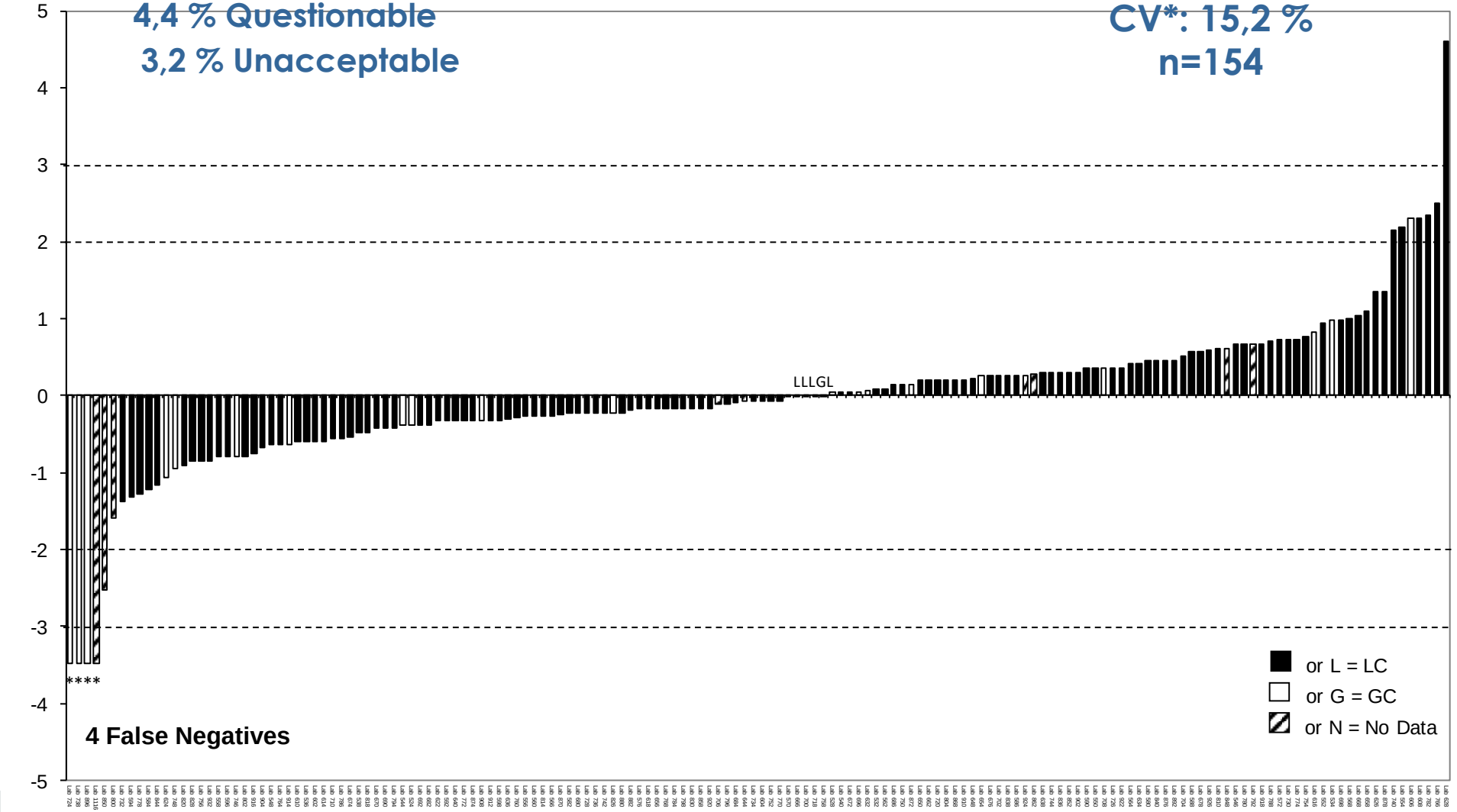
1 False Negative

EU/EFTA Laboratories

Pyraclostrobin

92,4 % Acceptable
4,4 % Questionable
3,2 % Unacceptable

Robust Mean: 0,076 mg/kg
CV*: 15,2 %
n=154

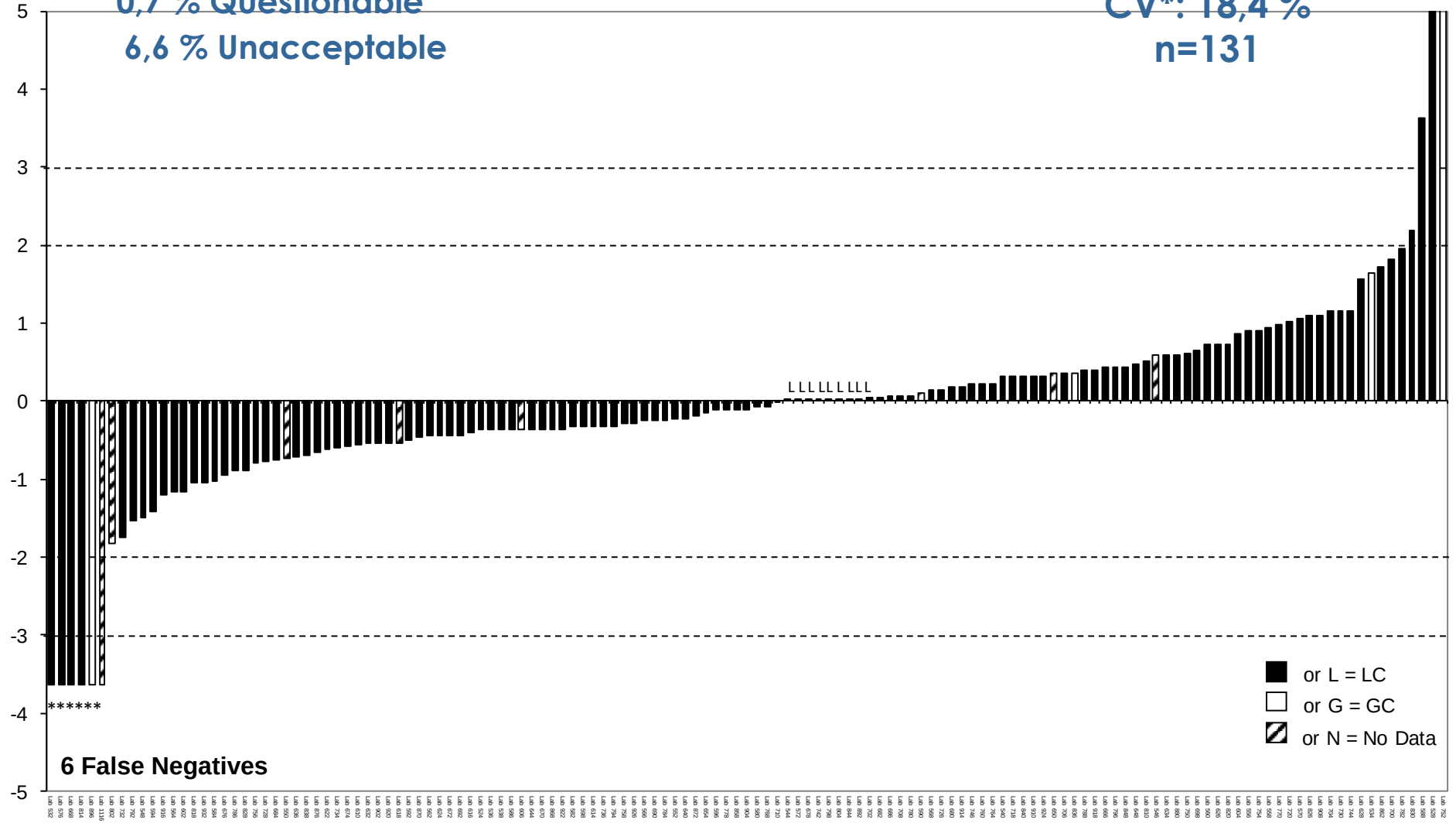


EU/EFTA Laboratories

Teflubenzuron

92,7 % Acceptable
0,7 % Questionable
6,6 % Unacceptable

Robust Mean: 0,110 mg/kg
CV*: 18,4 %
n=131

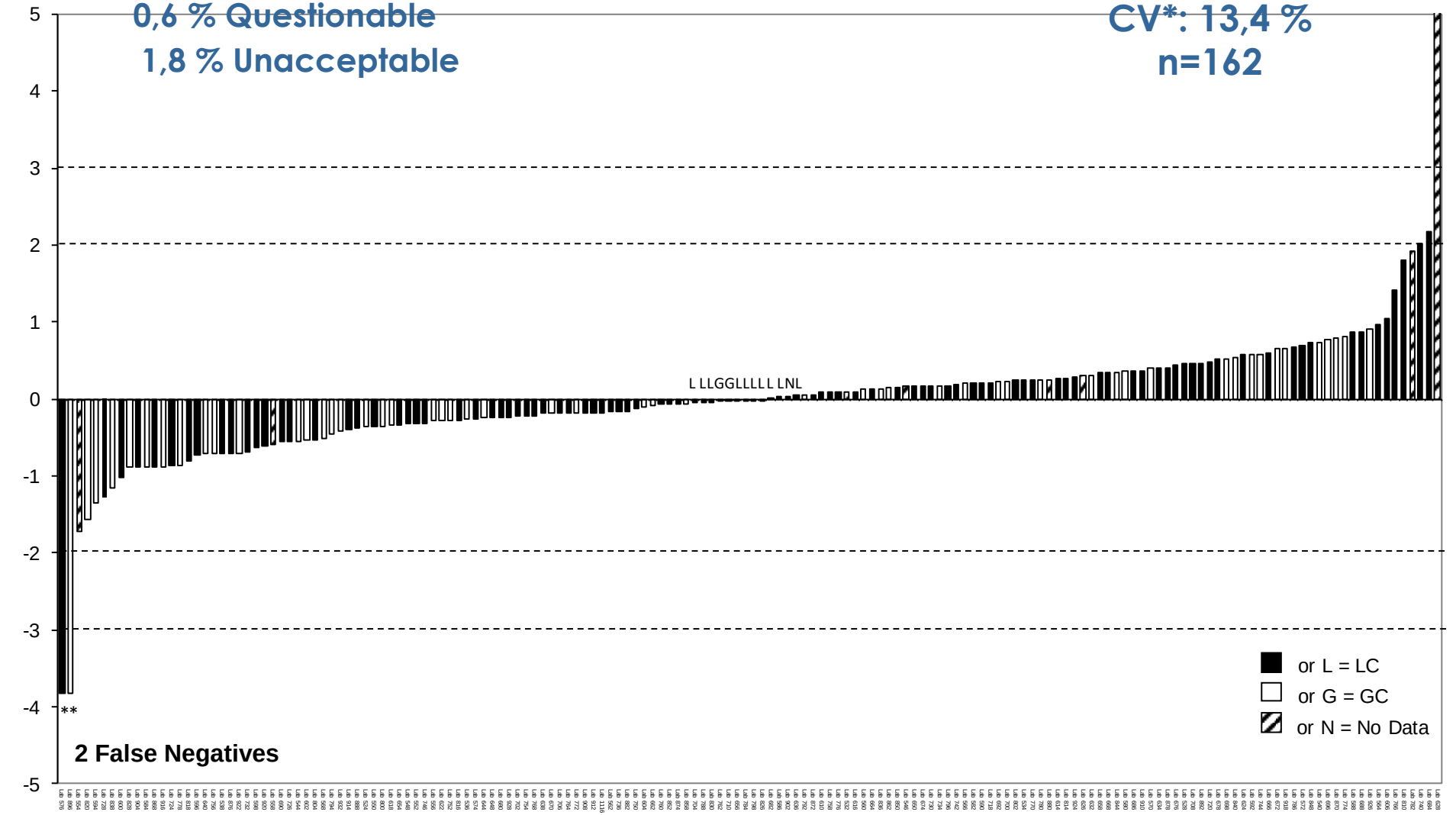


EU/EFTA Laboratories

Trifloxystrobin

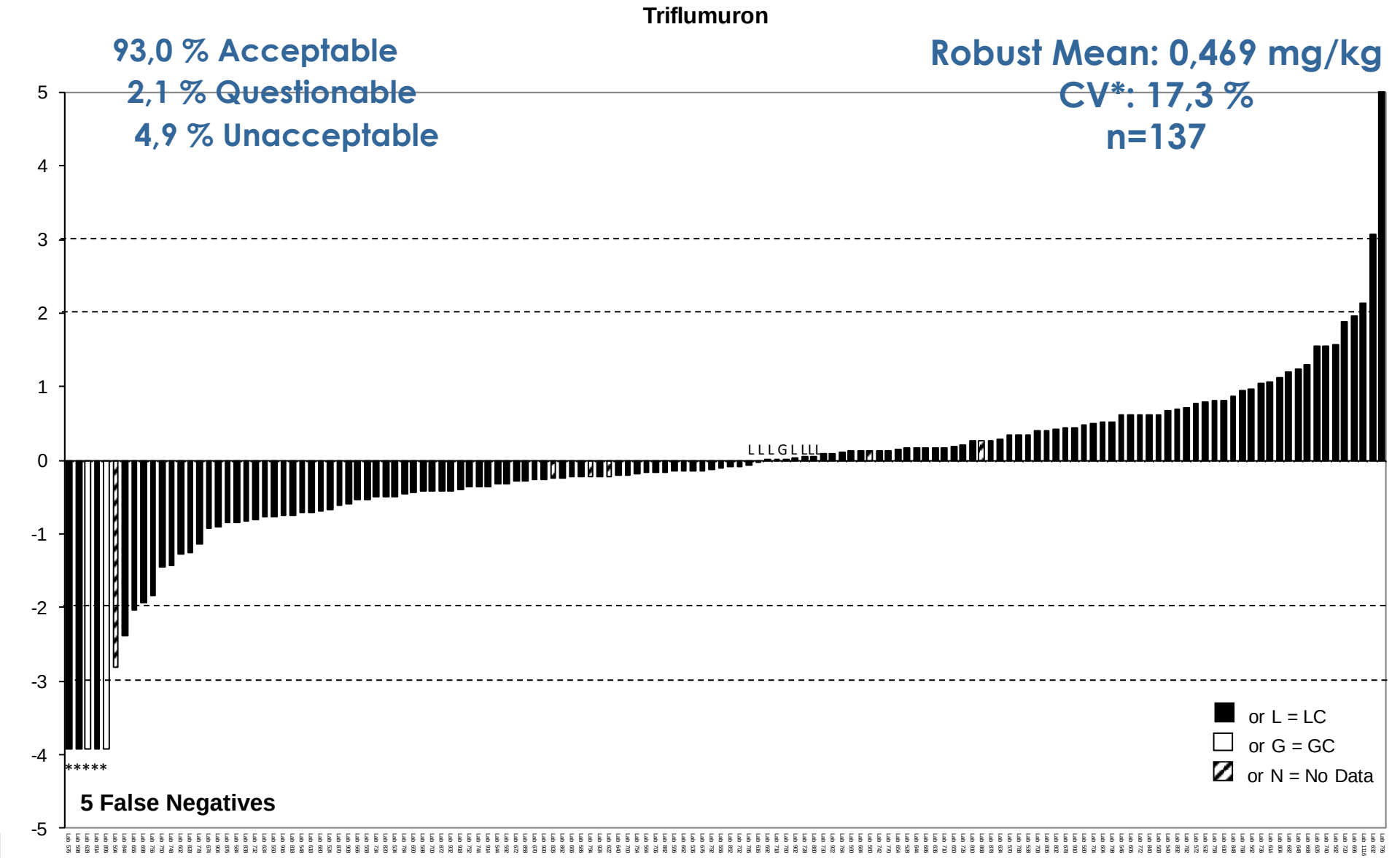
97,6 % Acceptable
0,6 % Questionable
1,8 % Unacceptable

Robust Mean: 0,230 mg/kg
CV*: 13,4 %
n=162



2 False Negatives

EU/EFTA Laboratories



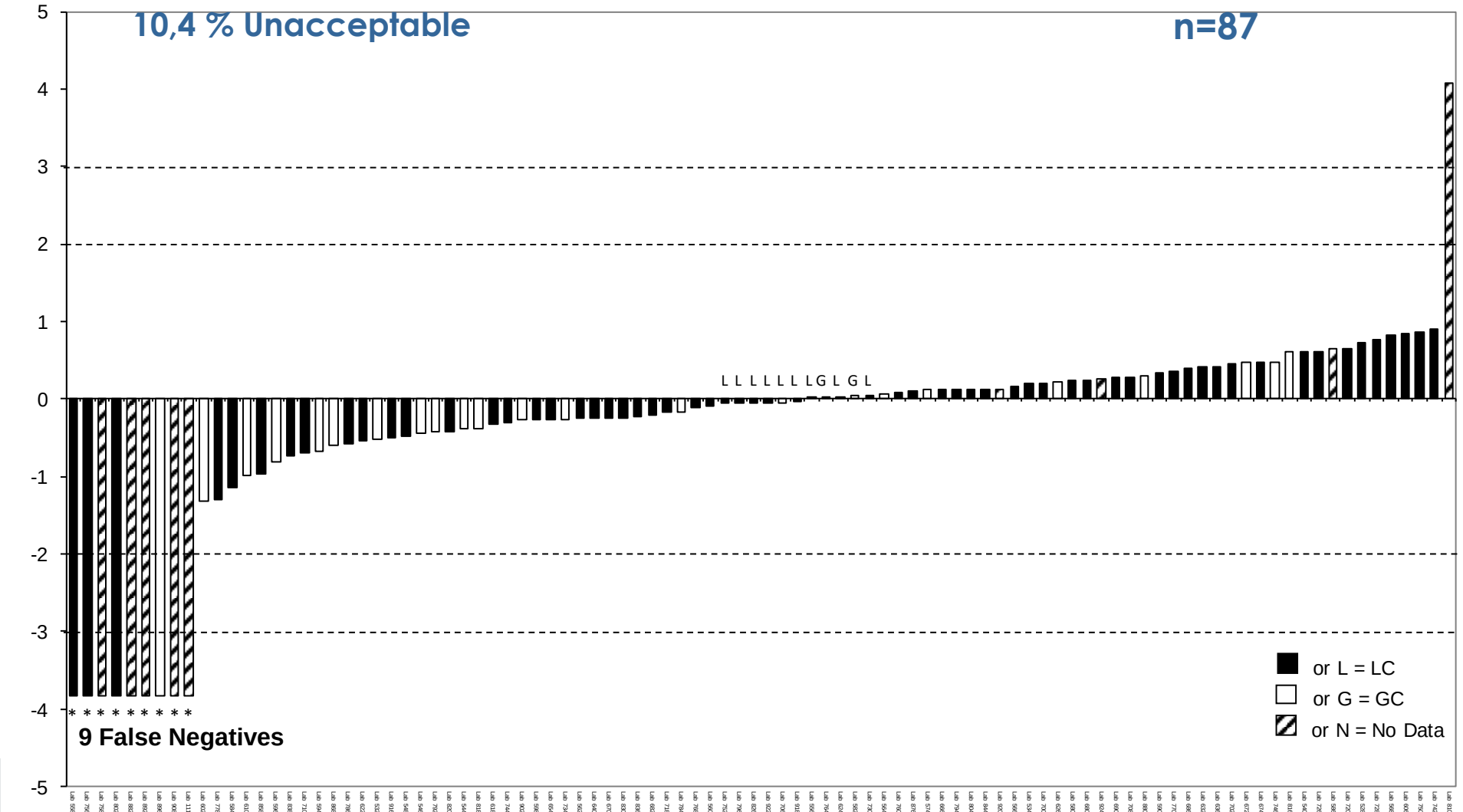
Voluntary Componds

EU/EFTA Laboratories

89,6 % Acceptable
0,0 % Questionable
10,4 % Unacceptable

Penthiopyrad

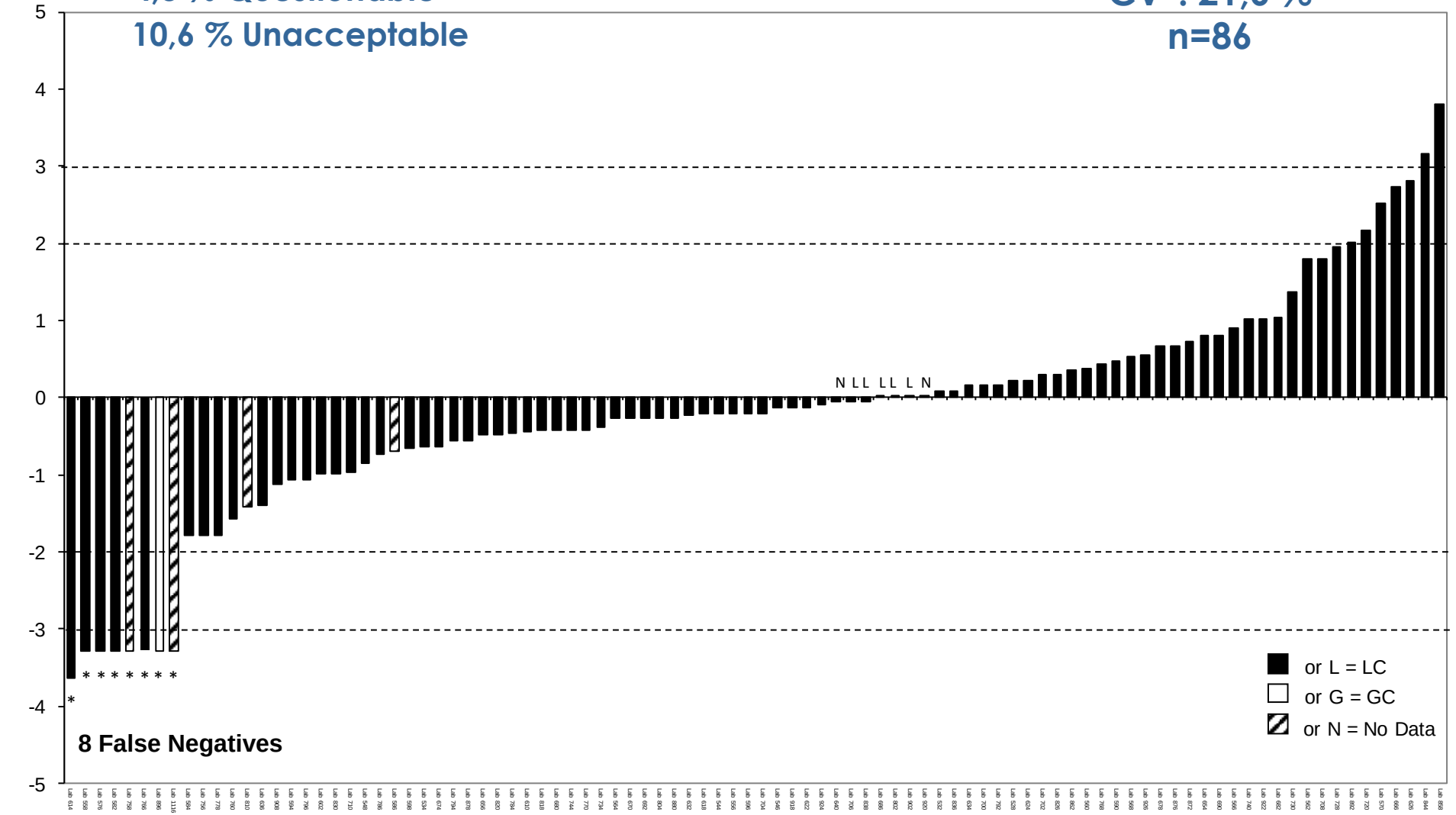
Robust Mean: 0,223 mg/kg
CV*: 12,4 %
n=87



Spinetoram

85,1 % Acceptable
4,3 % Questionable
10,6 % Unacceptable

Robust Mean: 0,056 mg/kg
CV*: 21,6 %
n=86

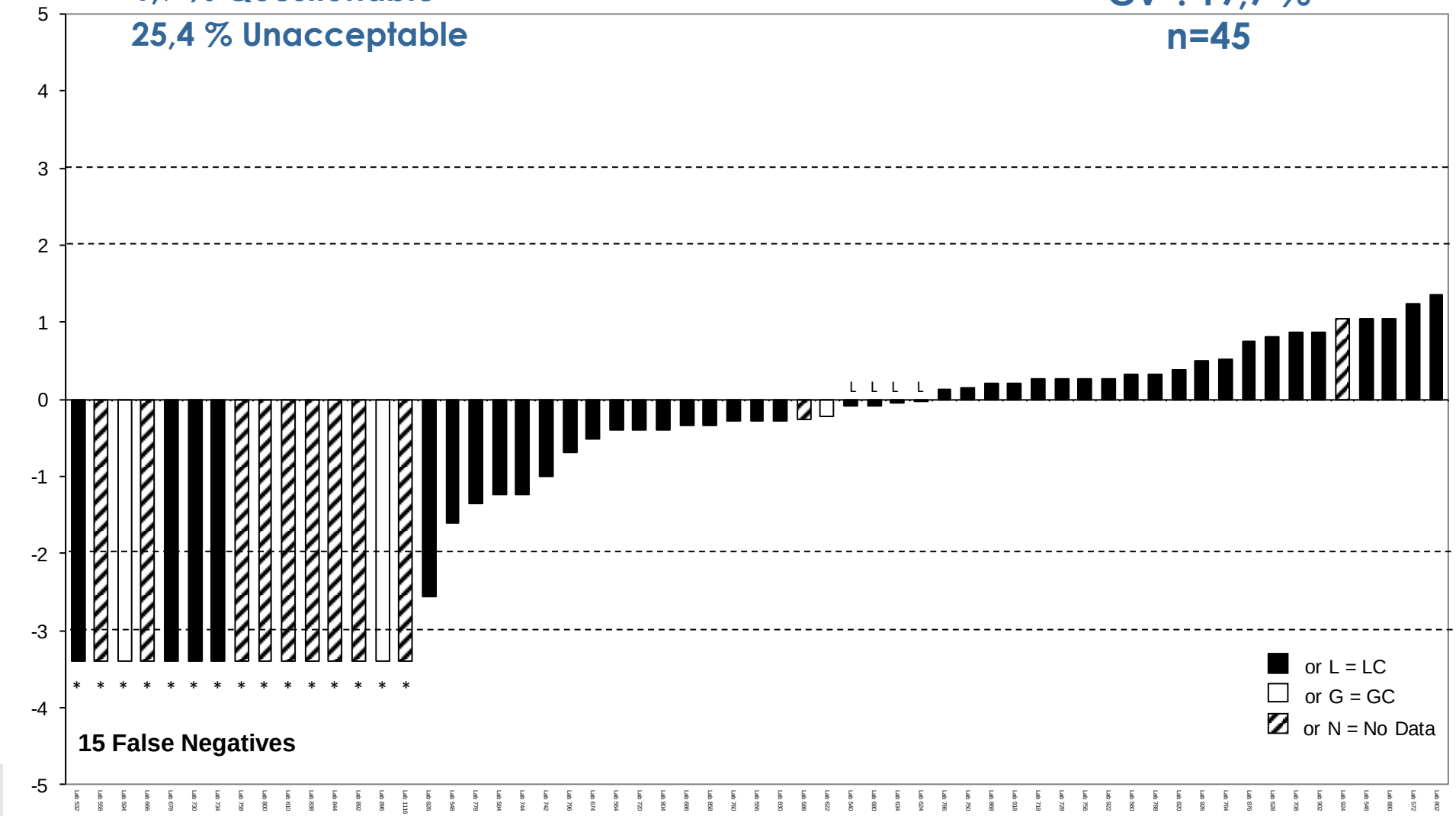


EU/EFTA Laboratories

Tritosulfuron

72,9 % Acceptable
1,7 % Questionable
25,4 % Unacceptable

Robust Mean: 0,066 mg/kg
CV*: 19,7 %
n=45



Combined z-Scores

Average of Squared z-Scores

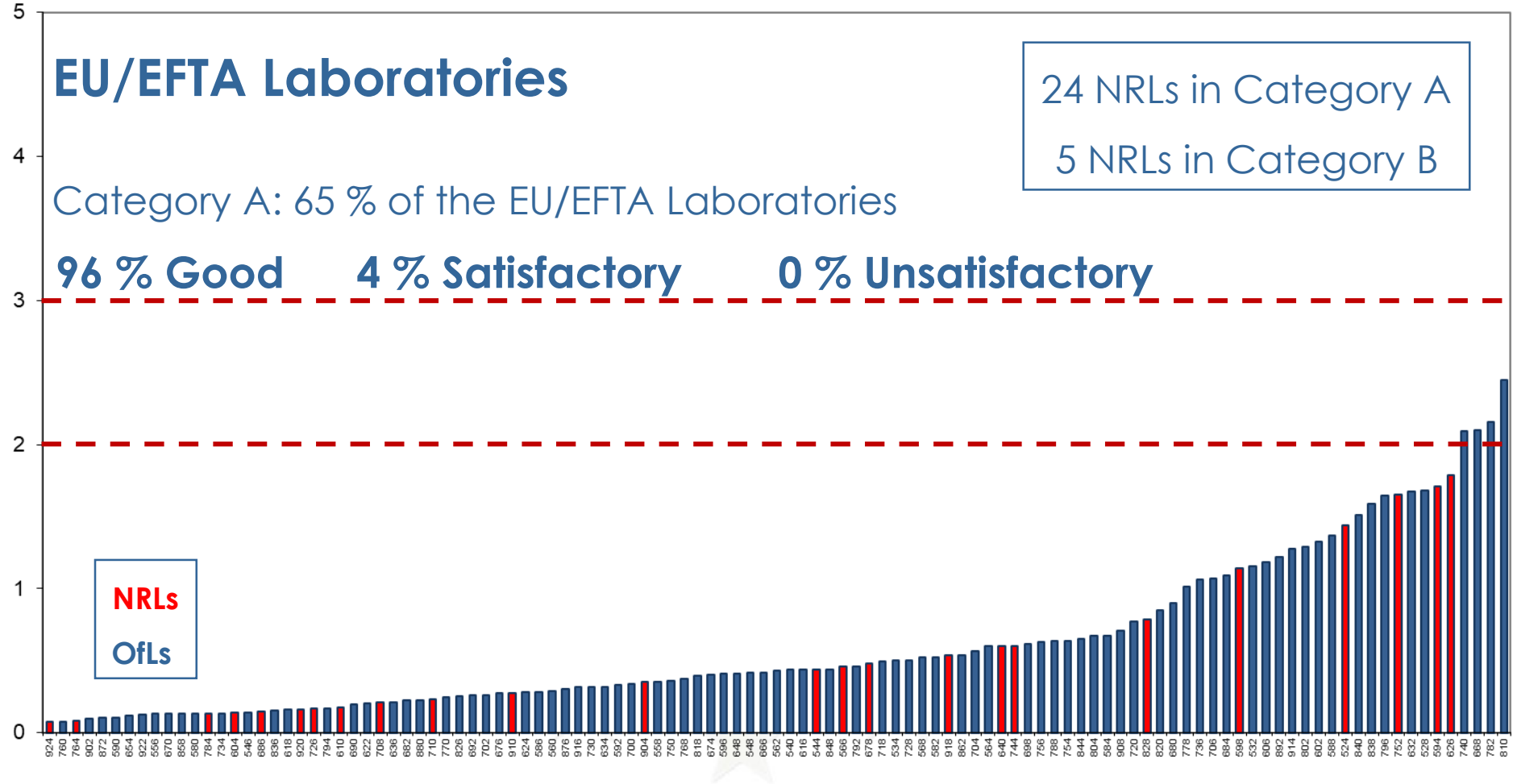
$$AZ^2 = \frac{\sum_{i=1}^{n} Z_i^2}{n}$$

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

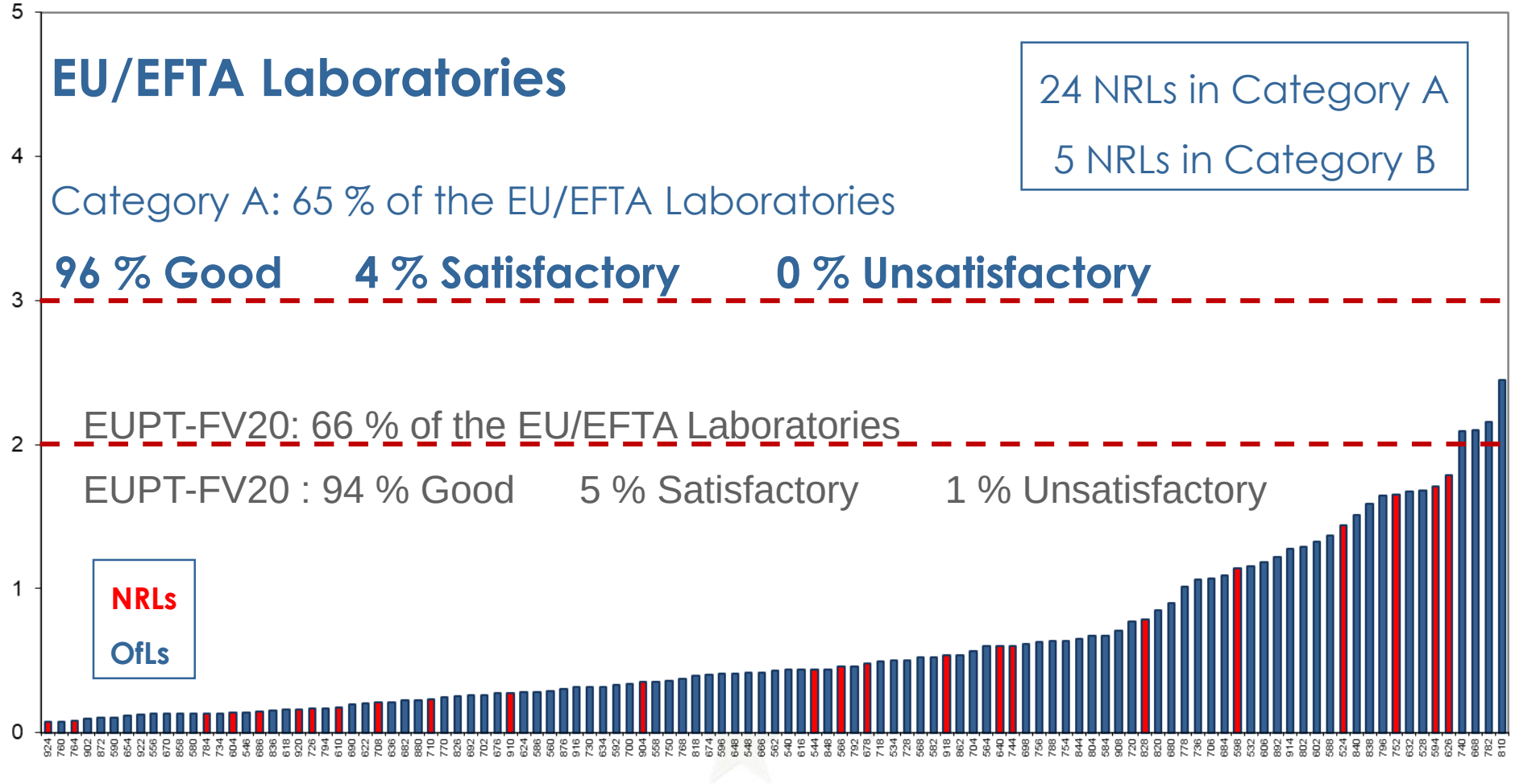
Category A

Laboratories that were able to analyse at least **90% of the compulsory pesticides in the target pesticides list**, that detected and quantified at least **90 % of the pesticides present in the Test Item** and reported **no false positives.**

Category A Clasification



Category A Clasification



False Positives

8 laboratories reported **6** pesticides as false positives (including non-EU/EFTA)

Lab Code	Pesticide	Reporting level (mg/kg)	Concentration (mg/kg)	Determination technique
608	Benalaxyl including other mixtures of constituent isomers including benalaxyl-M (sum of isomers)	0.01	0.048	GC-MS/MS (QQQ)
786	Benalaxyl including other mixtures of constituent isomers including benalaxyl-M (sum of isomers)	0.01	0.0159	GC-MS/MS (QQQ)
716	Chlorfenapyr	0.01	0.14	LC-MS/MS QQQ
868	Chlorpyrifos-methyl	0.01	0.05	GC-MS/MS (QQQ)
758	Diflubenzuron	0.01	0.038	GC-MS/MS (QQQ)
884	Diflubenzuron	0.01	0.064	GC-MS
882	Diphenylamine	0.01	0.0136	LC-MS/MS QQQ
722	Fluopicolide	0.01	0.137	GC- (μ) ECD

EUROPEAN COMMISSION PROFICIENCY TEST FOR PESTICIDE RESIDUES IN FRUITS AND VEGETABLES

SCREENING METHODS 11
RED CABBAGE

RESULTS

European Commission
EURL
EUROPEAN UNION REFERENCE LABORATORIES

ACTIVITY	DATE
Publishing the Calendar and Matrix on the Web page.	January 2019
Receiving Application Form from invited laboratories.	28th Dec – 25th Jan 2019
Specific Protocol published on the Web site.	11th Feb 2019 at the latest
Sample distribution.	25th February 2019
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 2019
Final Report distributed to the Laboratories.	August 2019

Preparation of the test item

Pesticides used for the treatment

Bifenazate
Etoxazole
Fenpyrazamine
Flubendiamide
Flufenacet
Fluopicolide
Isoprothiolane
Isopyrazam
Metrafenone
Orthosulfamuron
Penthiopyrad
Propoxur
Pyridalil
Spinetoram
Tricyclazole
Valifenalate

Participation

67 Participants

20 EU/EFTA Countries

- Austria
- Belgium
- Croatia
- Czech Republic
- Denmark
- Finland
- France
- Germany
- Hungary
- Ireland
- Italy
- Lithuania
- Malta
- Netherlands
- Norway
- Slovenia
- Spain
- Sweden
- Switzerland
- United Kingdom

4 Non EU/EFTA Countries

- China
- Costa Rica
- Kenya
- Turkey

Participation

EUPT-FV-SM011- Participants		67 Participants	
COUNTRY	No.	COUNTRY	No.
Austria	1	Italy	7
Belgium	5	Kenia	1
China	3	Lithuania	1
Costa Rica	1	Malta	1
Croatia	1	Norway	1
Czech Republic	2	Slovenia	1
Denmark	1	Spain	10
Finland	1	Sweden	2
France	4	Switzerland	2
Germany	12	The Netherlands	2
Hungary	4	Turkey	1
Ireland	1	UK	1

RESULTS

Concentrations

Pesticides	No of Detections	N° of Labs detected the pesticide	% of Labs detected the pesticide	No of concentrations Reported	Robust mean (mg/kg)	CV (%)
Bifenazate	58	53	79	43	0.037	44.9
Bifenazate-diazene*	15	15	22	9	0.031	46.2
Etoxazole	69	62	93	58	0.060	20.7
Fenpyrazamine	58	52	78	47	0.052	17.2
Flubendiamide	56	52	78	47	0.065	22.8
Flufenacet	62	57	85	49	0.085	21.1
Fluopicolide	64	60	90	54	0.084	19.5
Isoprothiolane	65	58	87	55	0.067	18.5
Isopyrazam	55	51	76	44	0.057	22.0
Metrafenone	65	59	88	54	0.064	20.8
Orthosulfamuron	28	26	39	18	0.119	79.8
Penthiopyrad	56	51	76	44	0.054	17.9
Propoxur	68	62	93	57	0.081	18.1
Pyridalil	55	50	75	42	0.041	12.9
Spinetoram	71	54	81	49	0.052	35.1
Tricyclazole	62	57	85	51	0.082	15.2
Valifenalate	44	42	63	31	0.043	20.2

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Fenpyr						.2
Fluben						.8
Flufena						.1
Fluopic						.5
Isoprot						.5
Isopyra						.0
Metrafe						.8
Orthosu						.8
Penthio						.9
Propox						.1
Pyridali						.9
Spineto						.1
Tricyclazole	62	57	85	51	0.082	15.2
Valifenalate	44	42	63	31	0.043	20.2

EU - Maximum Residue Levels (Reg. (EC) No 396/2005) (MRLs)

Legislation	Annexes
Reg. (EU) 2017/624 Reg. (EU) 2016/1 Reg. (EU) No 79/2014 Reg. (EU) No 251/2013 Reg. (EU) No 592/2012 Reg. (EU) No 441/2012 Reg. (EC) No 149/2008	Bifenazate (sum of bifenazate plus bifenazate-diazene expressed as bifenazate) (F) Annex II MRLs >

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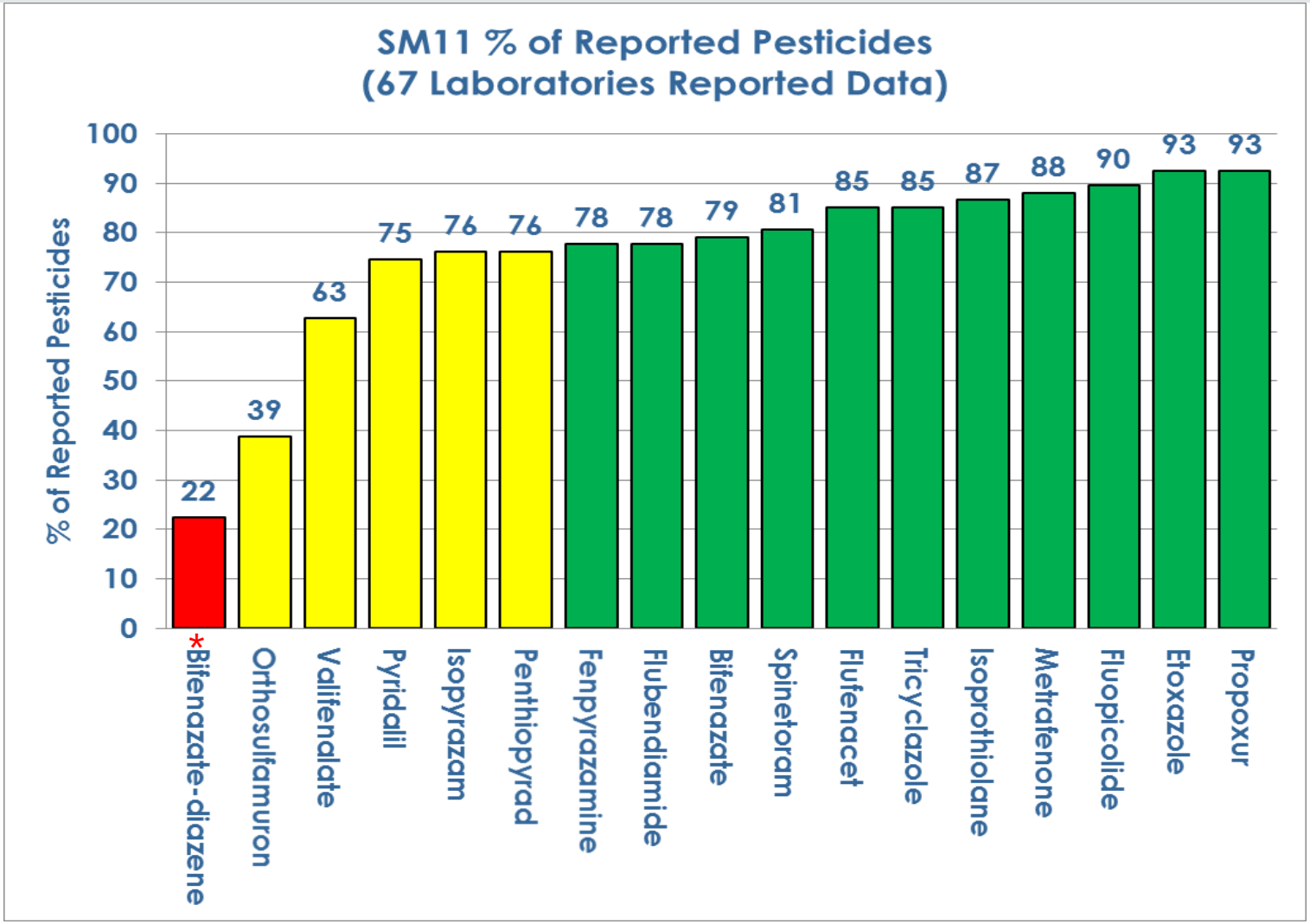
Results

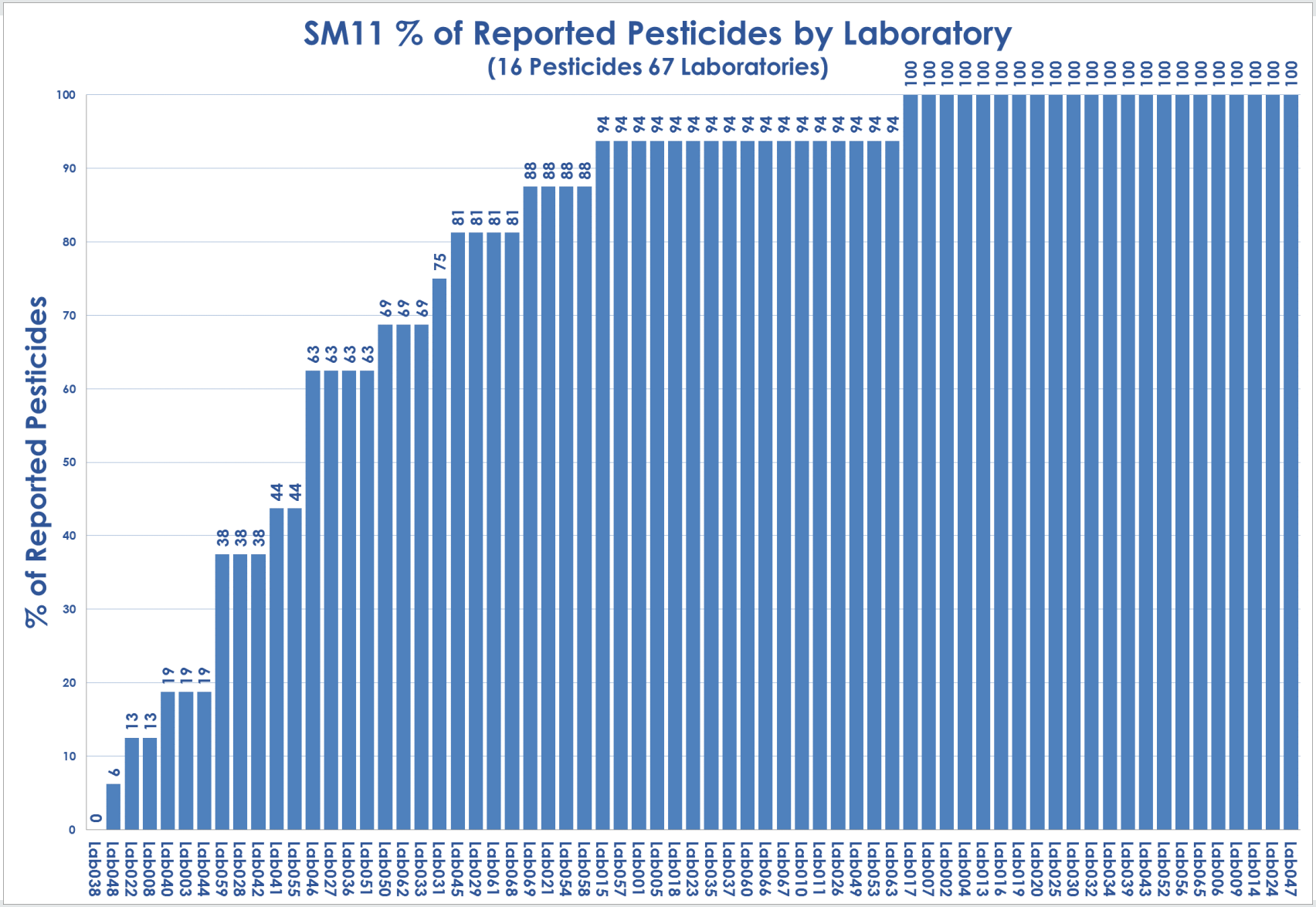
16 Evaluated Pesticides + bifenazate diazene (only informative)
67 Laboratories

16 Pesticides= 1+1+14

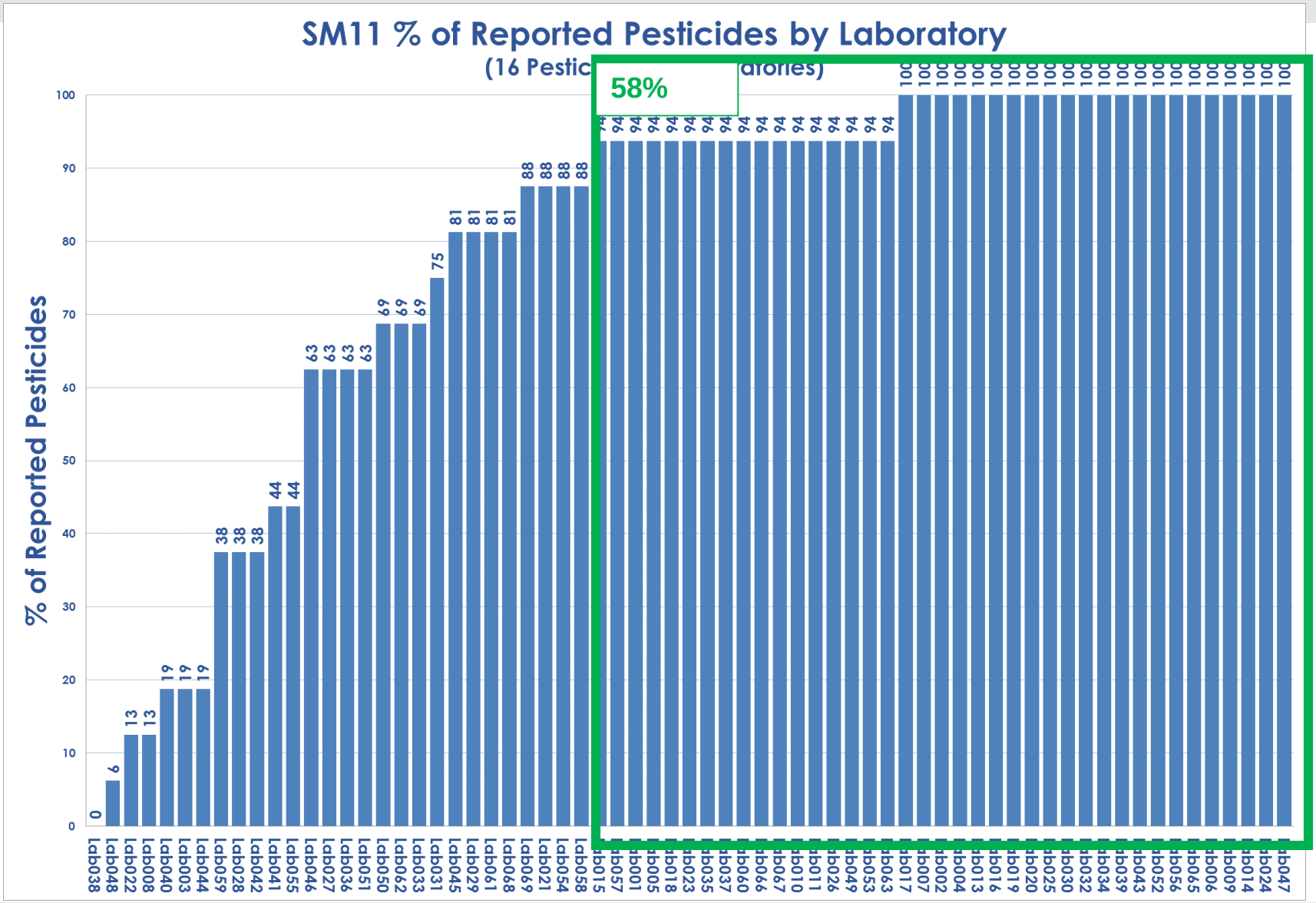
	Bifenazate	Bifenazate-diazene*	Etoxazole	Fenpyrazamine	Flubendiamide	Flufenacet	Fluopicolide	Isoprothiolane	Isopyrazam	Metrafenone	Orthosulfamuron	Penthiopyrad	Propoxur	Pyridalil	Spinetoram	Tricyclazole	Valifenalate
Total Number of Reported Pesticides	53	15	62	52	52	57	60	58	51	59	26	51	62	50	54	57	42
% of Reported Pesticides	79	22	93	78	78	85	90	87	76	88	39	76	93	75	81	85	63


SM11 % of Reported Pesticides
(67 Laboratories Reported Data)
% of Reported Pesticides
100
90
80
70
60
50
40
30
20
10
0
22
39
63
75
76
76
78
78
79
81
85
85
87
88
90
93
93
*Bifenazate-diazene
Orthosulfamuron
Valifenalate
Pyridalil
Isopyrazam
Penthiopyrad
Fenpyrazamine
Flubendiamide
Bifenazate
Spinetoram
Flufenacet
Tricyclazole
Isoprothiolane
Metrafenone
Fluopicolide
Etoxazole
Propoxur

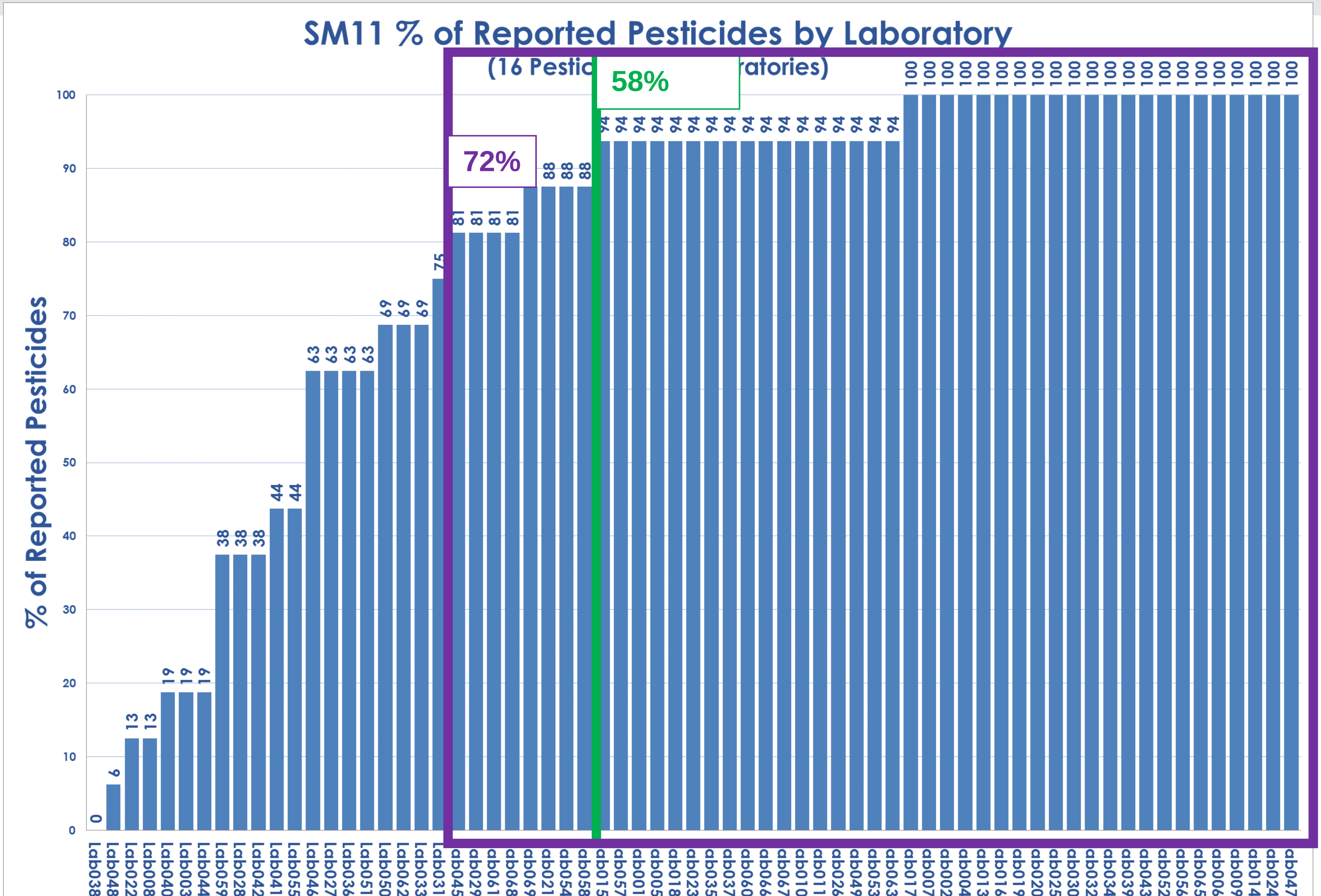
Results


SM11 % of Reported Pesticides by Laboratory
(16 Pesticides 67 Laboratories)
% of Reported Pesticides
0
10
20
30
40
50
60
70
80
90
100
Lab038 0
Lab048 6
Lab022 13
Lab008 13
Lab040 19
Lab003 19
Lab044 19
Lab059 38
Lab028 38
Lab042 38
Lab041 44
Lab055 44
Lab046 63
Lab027 63
Lab036 63
Lab051 63
Lab050 69
Lab062 69
Lab033 69
Lab031 75
Lab045 81
Lab029 81
Lab061 81
Lab068 81
Lab069 88
Lab021 88
Lab054 88
Lab058 88
Lab015 94
Lab057 94
Lab001 94
Lab005 94
Lab018 94
Lab023 94
Lab035 94
Lab037 94
Lab060 94
Lab066 94
Lab067 94
Lab010 94
Lab011 94
Lab026 94
Lab049 94
Lab053 94
Lab063 94
Lab017 100
Lab007 100
Lab002 100
Lab004 100
Lab013 100
Lab016 100
Lab019 100
Lab020 100
Lab025 100
Lab030 100
Lab032 100
Lab034 100
Lab039 100
Lab043 100
Lab052 100
Lab056 100
Lab065 100
Lab006 100
Lab009 100
Lab014 100
Lab024 100
Lab047 100

Results

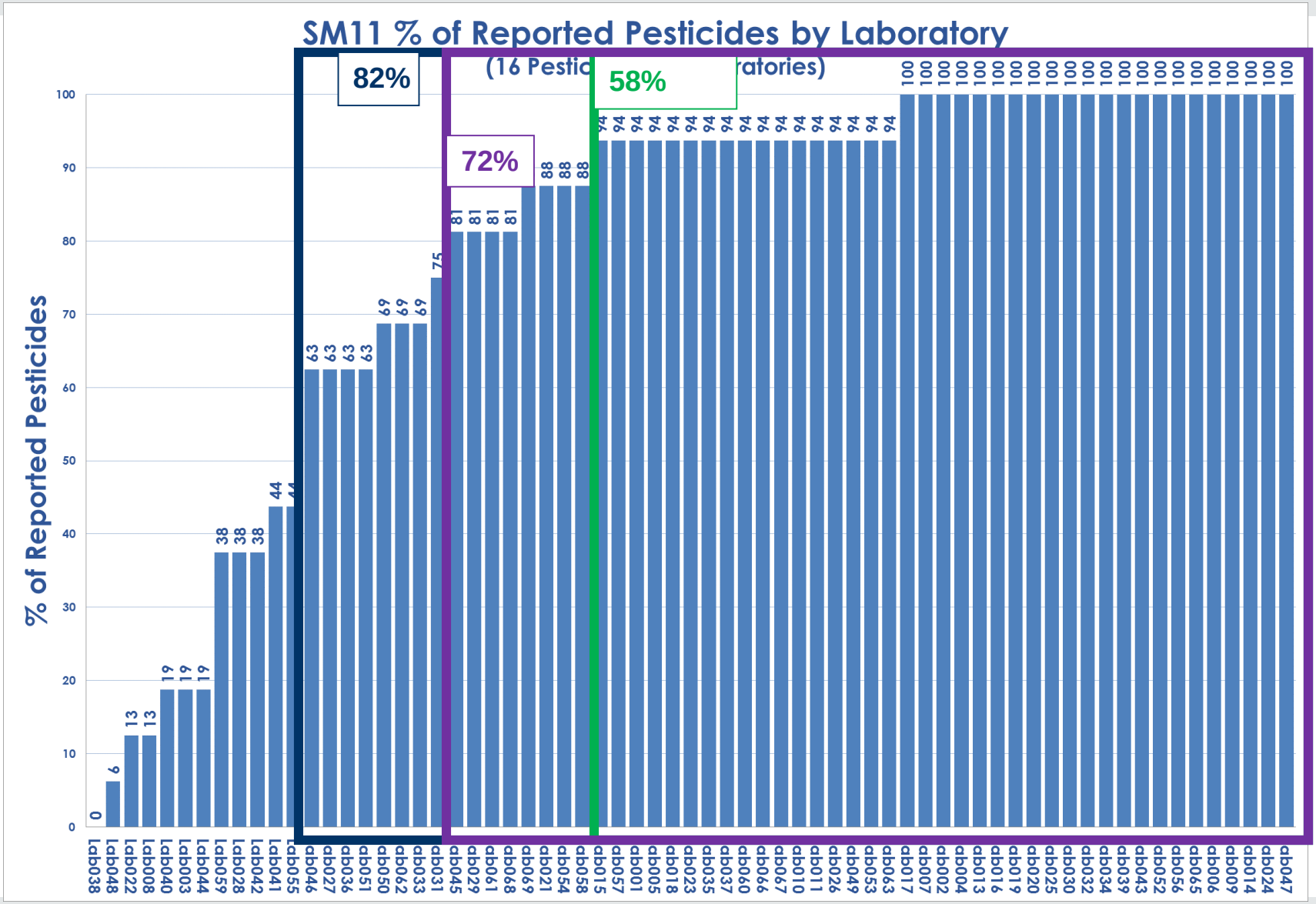

SM11 % of Reported Pesticides by Laboratory
(16 Pestic atories)
58%
% of Reported Pesticides
0 10 20 30 40 50 60 70 80 90 100
Lab038 Lab048 Lab022 Lab008 Lab040 Lab003 Lab044 Lab059 Lab028 Lab042 Lab041 Lab055 Lab046 Lab027 Lab036 Lab051 Lab050 Lab062 Lab033 Lab031 Lab045 Lab029 Lab061 Lab068 Lab069 Lab021 Lab054 Lab058 Lab015 Lab057 Lab001 Lab005 Lab018 Lab023 Lab035 Lab037 Lab060 Lab066 Lab067 Lab010 Lab011 Lab026 Lab049 Lab053 Lab063 Lab017 Lab007 Lab002 Lab004 Lab013 Lab016 Lab019 Lab020 Lab025 Lab030 Lab032 Lab034 Lab039 Lab043 Lab052 Lab056 Lab065 Lab006 Lab009 Lab014 Lab024 Lab047

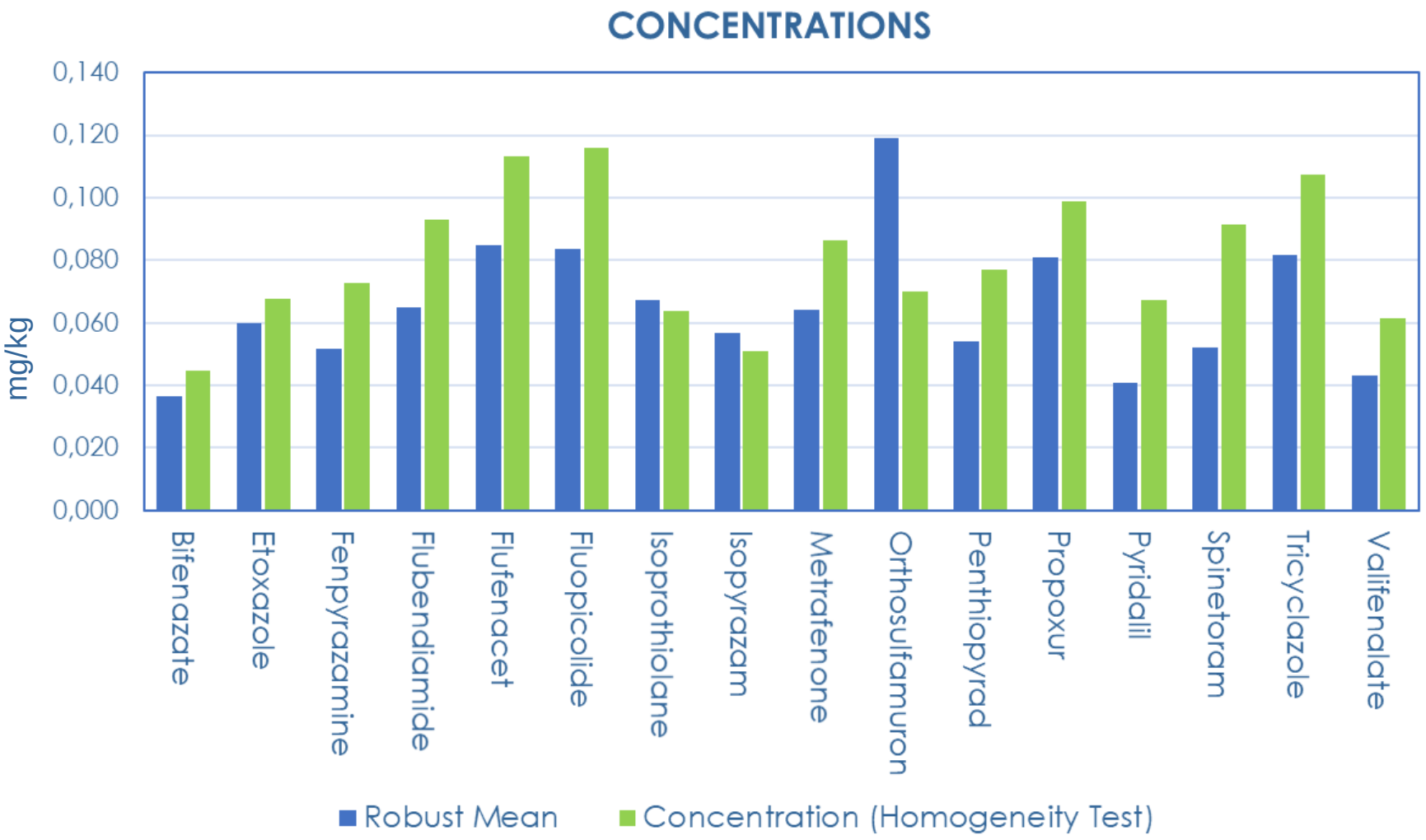
Results



SM11 % of Reported Pesticides by Laboratory
(16 Pestic
ratories)
72%
58%
% of Reported Pesticides
0
10
20
30
40
50
60
70
80
90
100
0 6 13 13 19 19 19 38 38 38 44 44 63 63 63 63 69 69 69 75 81 81 81 81 88 88 88 88 94 94 94 94 94 94 94 94 94 94 94 94 94 94 94 94 94 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100
lab038 lab048 lab022 lab008 lab040 lab003 lab044 lab059 lab028 lab042 lab041 lab055 lab046 lab027 lab036 lab051 lab050 lab062 lab033 lab031 lab045 lab029 lab061 lab068 lab069 lab021 lab054 lab058 lab015 lab057 lab001 lab005 lab018 lab023 lab035 lab037 lab060 lab066 lab067 lab010 lab011 lab026 lab049 lab053 lab063 lab017 lab007 lab002 lab004 lab013 lab016 lab019 lab020 lab025 lab030 lab032 lab034 lab039 lab043 lab052 lab056 lab065 lab006 lab009 lab014 lab024 lab047

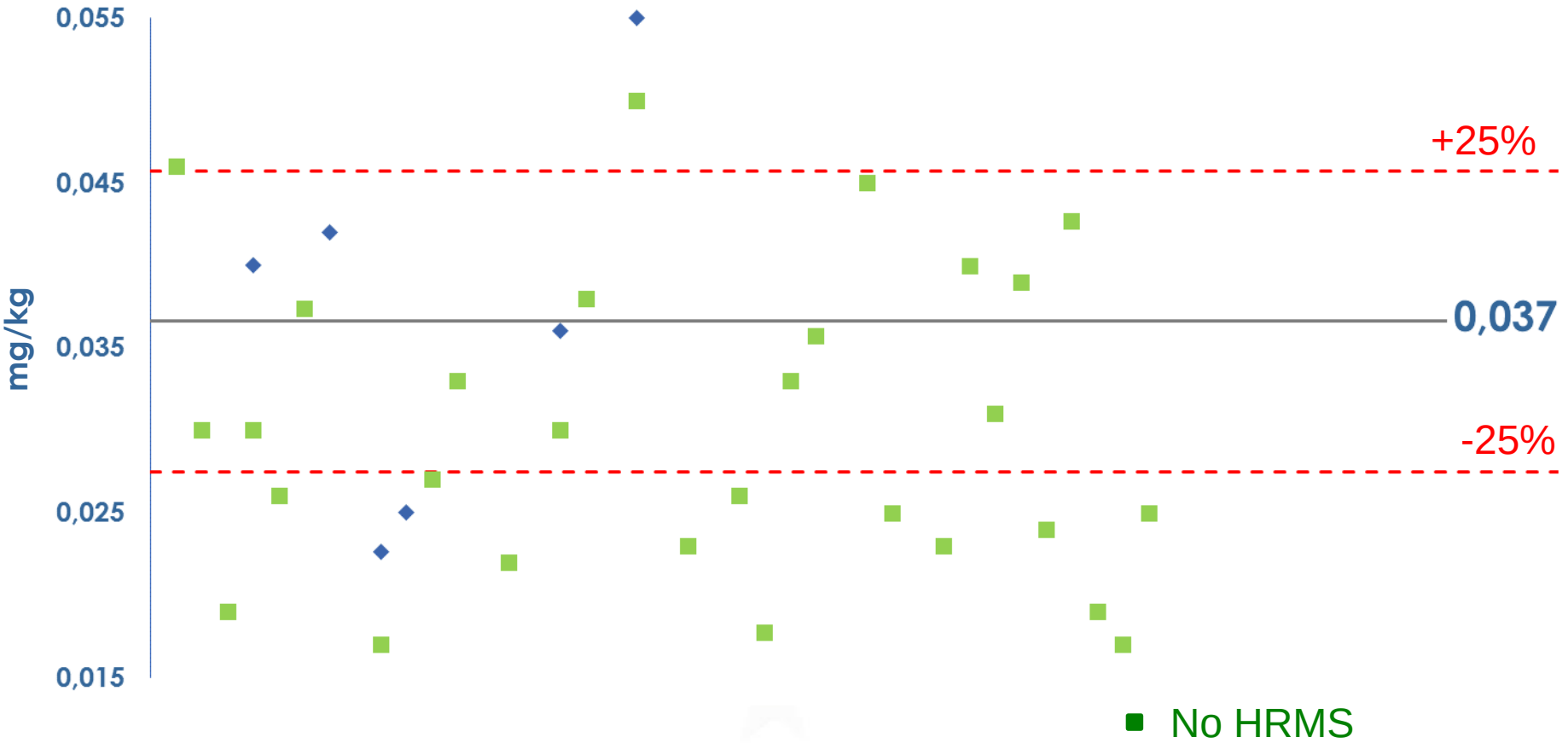
Results


SM11 % of Reported Pesticides by Laboratory
(16 Pesti
ratories)
82%
72%
58%
% of Reported Pesticides
0
10
20
30
40
50
60
70
80
90
100
Lab038 Lab048 Lab022 Lab008 Lab040 Lab003 Lab044 Lab059 Lab028 Lab042 Lab041 Lab055 Lab046 Lab027 Lab036 Lab051 Lab050 Lab062 Lab033 Lab031 Lab045 Lab029 Lab061 Lab068 Lab069 Lab021 Lab054 Lab058 Lab015 Lab057 Lab001 Lab005 Lab018 Lab023 Lab035 Lab037 Lab060 Lab066 Lab067 Lab010 Lab011 Lab026 Lab049 Lab053 Lab063 Lab017 Lab007 Lab002 Lab004 Lab013 Lab016 Lab019 Lab020 Lab025 Lab030 Lab032 Lab034 Lab039 Lab043 Lab052 Lab056 Lab065 Lab006 Lab009 Lab014 Lab024 Lab047


CONCENTRATIONS
mg/kg
0,140
0,120
0,100
0,080
0,060
0,040
0,020
0,000
Bifenazate
Etoxazole
Fenpyrazamine
Flubendiamide
Flufenacet
Fluopicolide
Isoprothiolane
Isopyrazam
Metrafenone
Orthosulfamuron
Penthiopyrad
Propoxur
Pyridalil
Spinetoram
Tricyclazole
Valifenalate
Robust Mean
Concentration (Homogeneity Test)

No of Detections (% of Laboratories)	No of Concentration Reported
58 (79%)	43

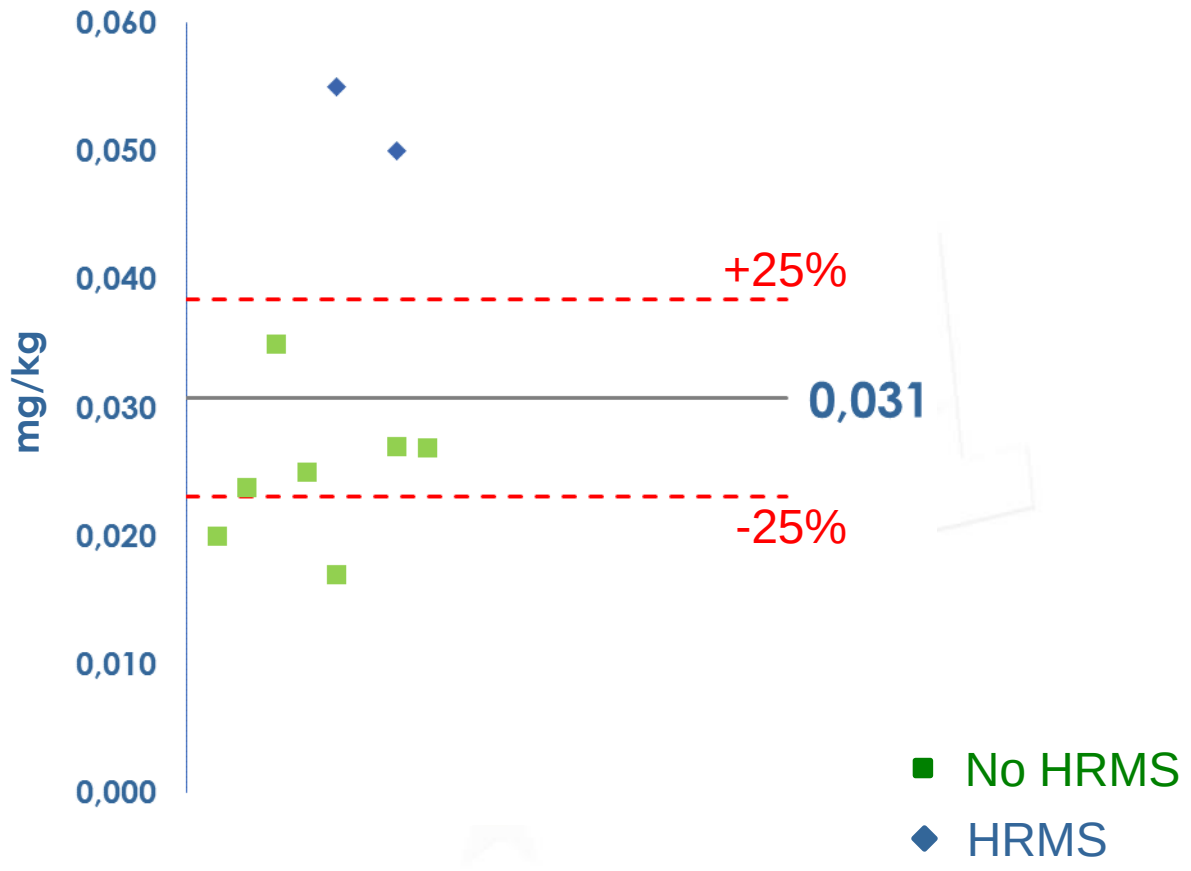
Bifenazate



Homogeneity: 0.045 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
15 (22%)	9

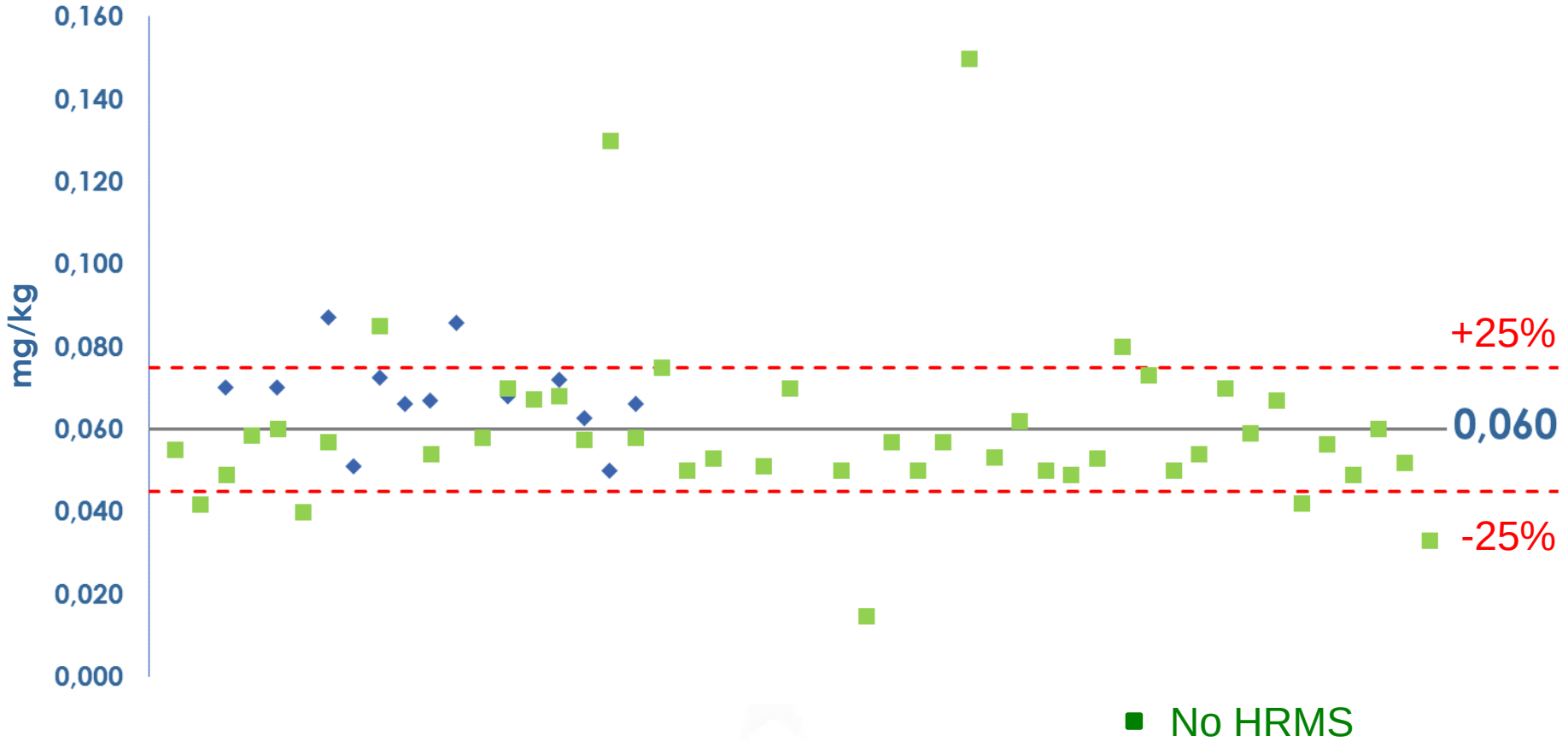
Bifenazate-diazene



*Only for informative purposes

No of Detections (% of Laboratories)	No of Concentration Reported
69 (93%)	58

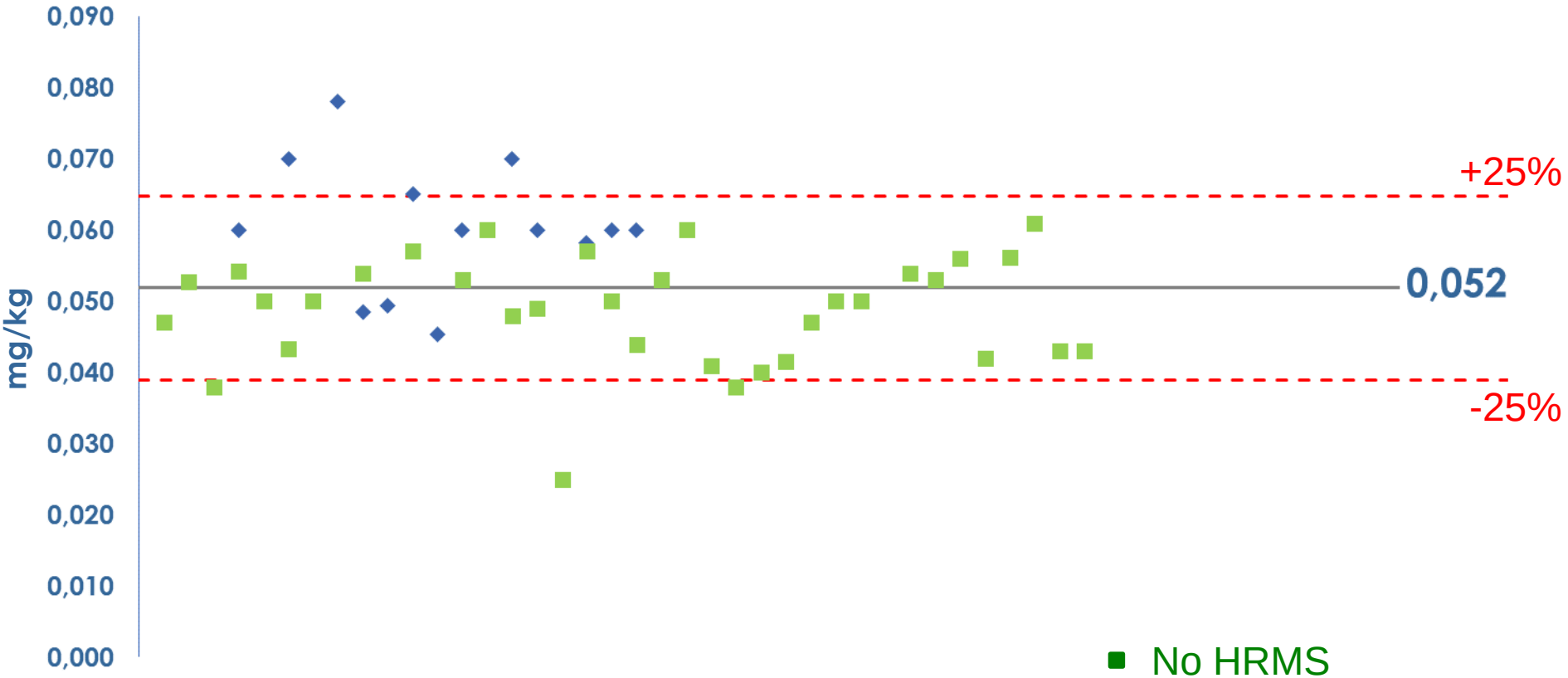
Etoxazole



Homogeneity: 0.068 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
58 (78%)	47

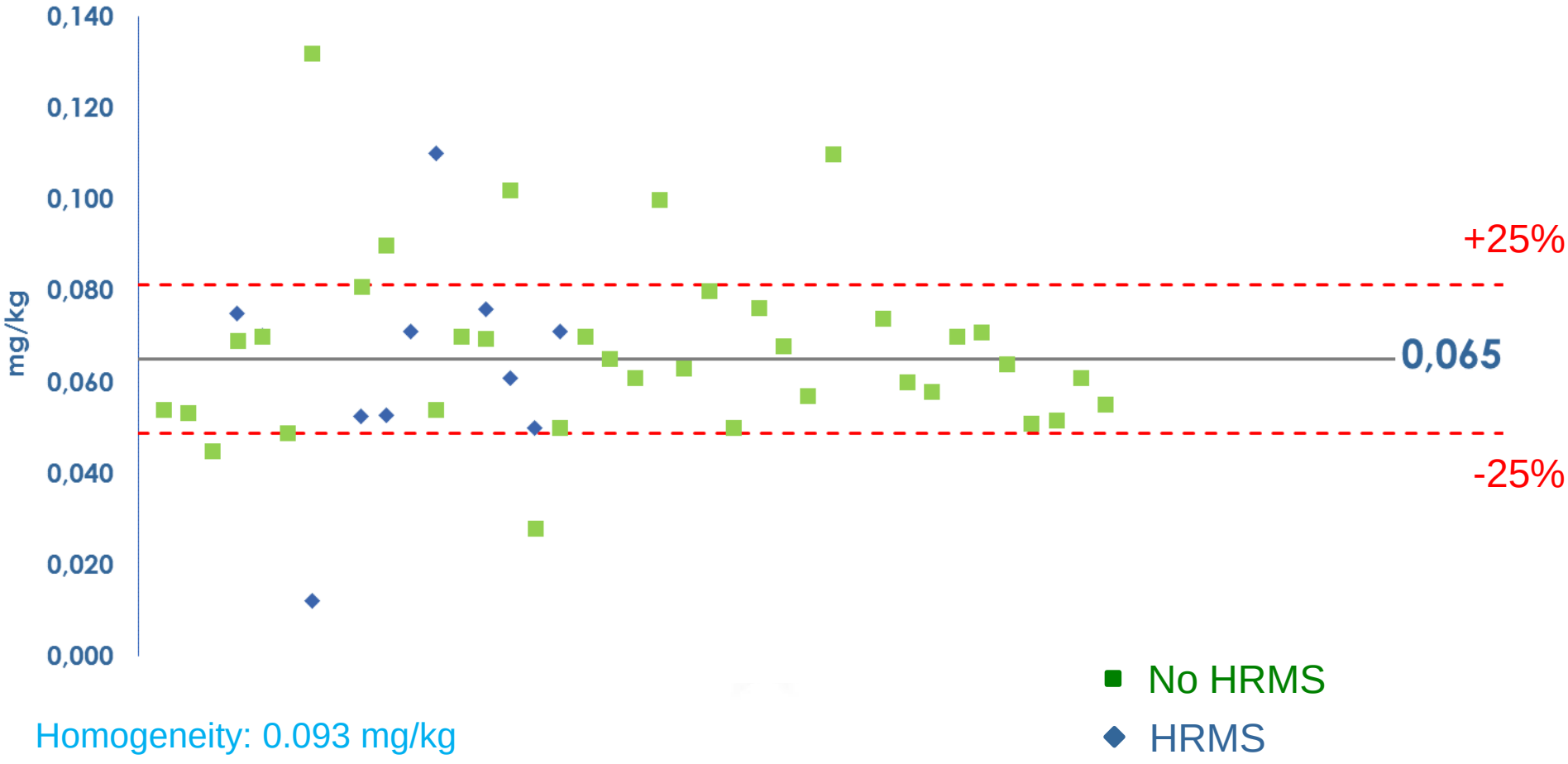
Fenpyrazamine



Homogeneity: 0.073 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
56 (78%)	47

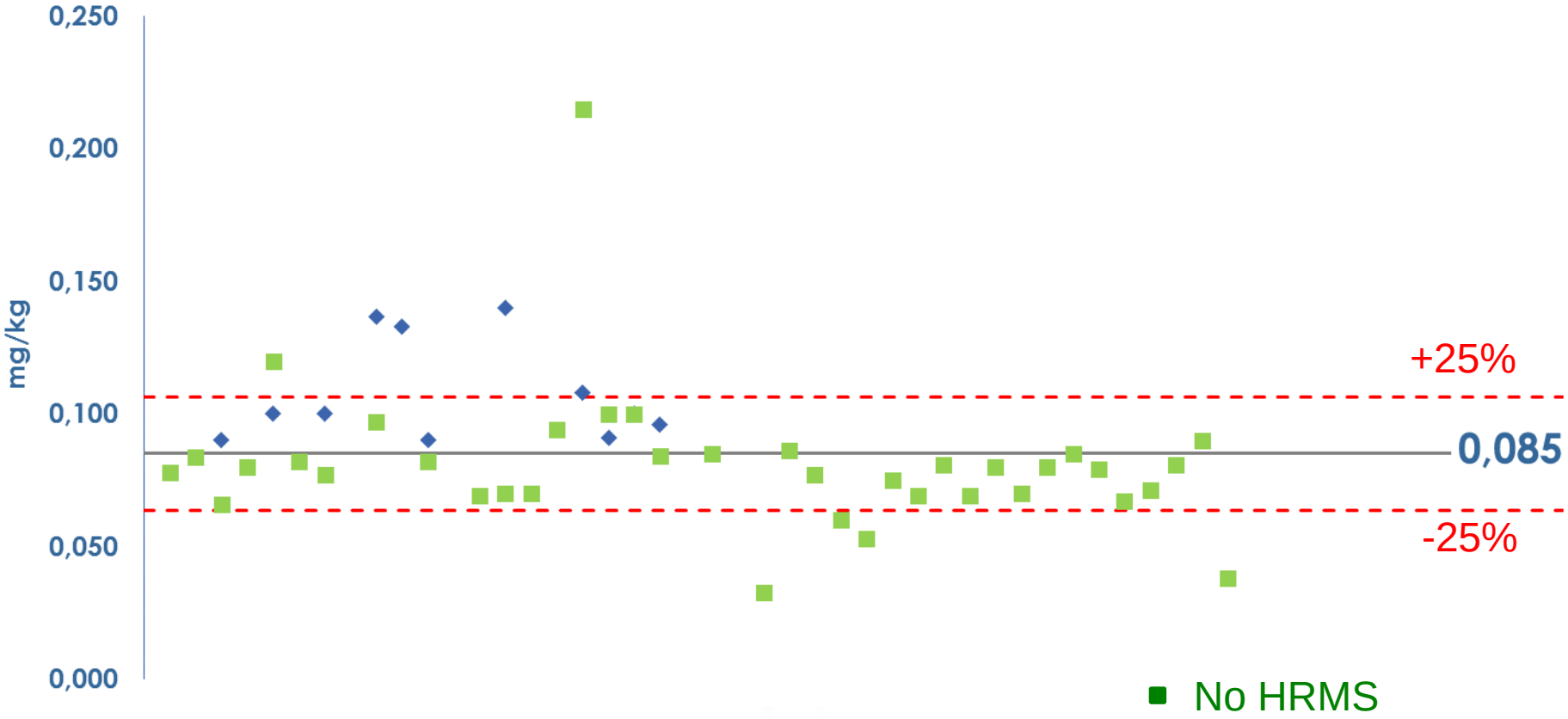
Flubendiamide



Homogeneity: 0.093 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
62 (85%)	49

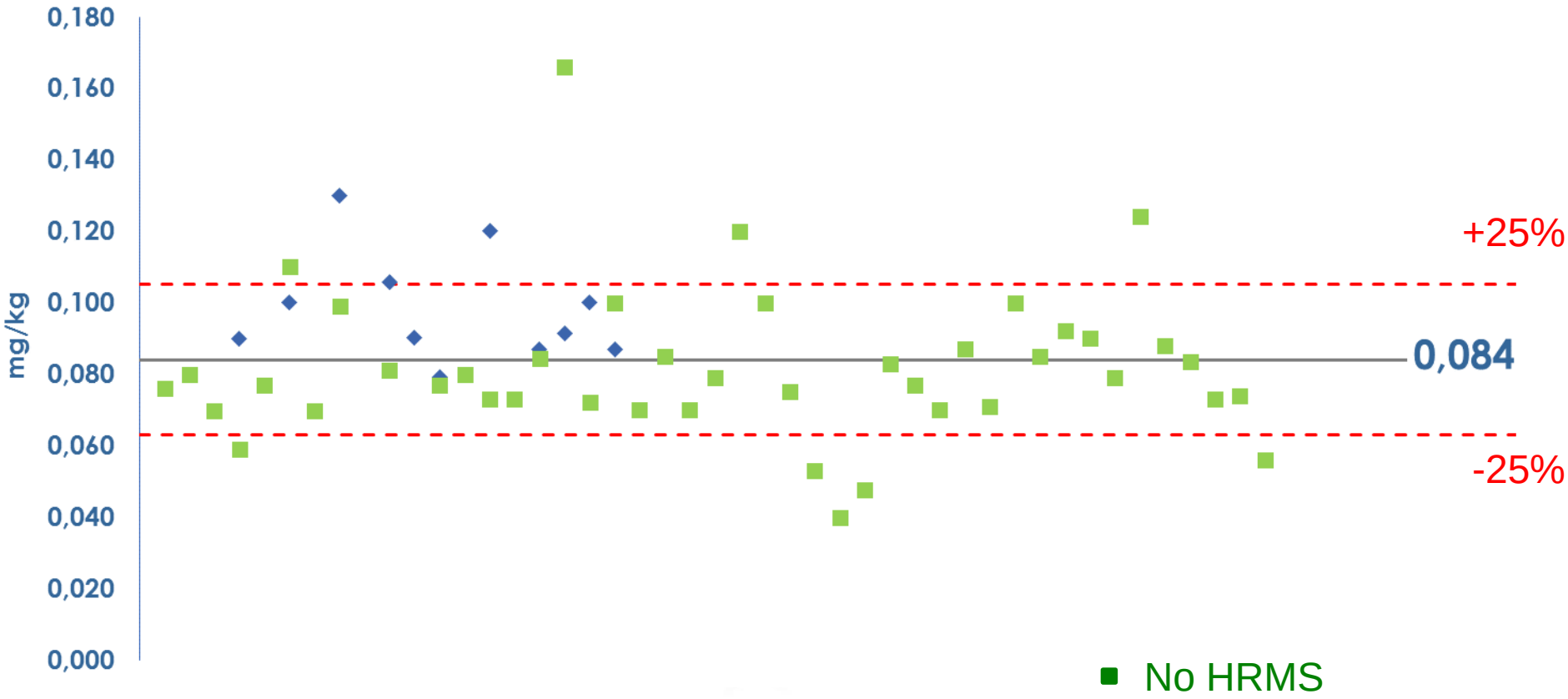
Flufenacet



Homogeneity: 0.113 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
64 (90%)	54

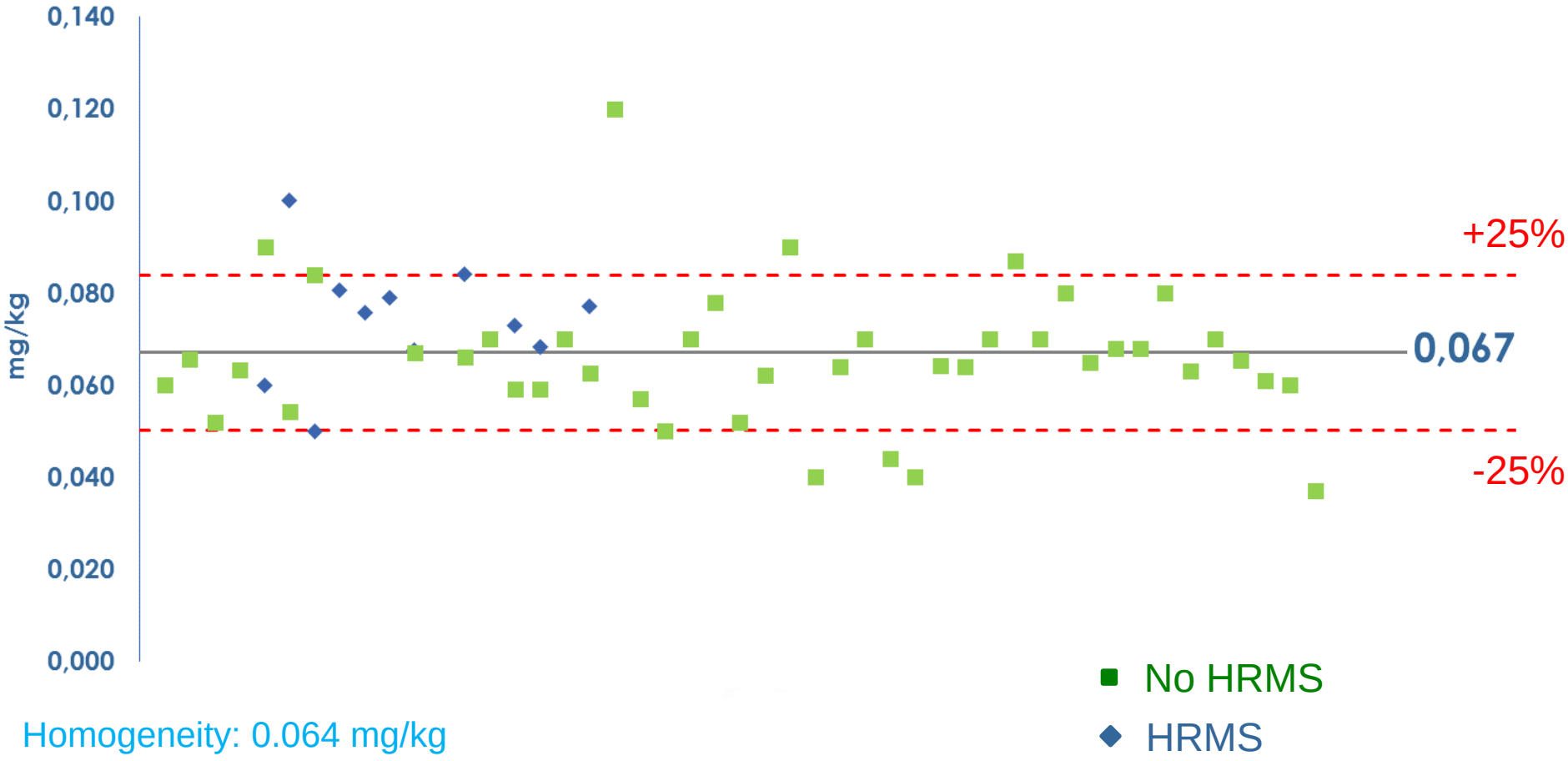
Fluopicolide



Homogeneity: 0.116 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
65 (87%)	55

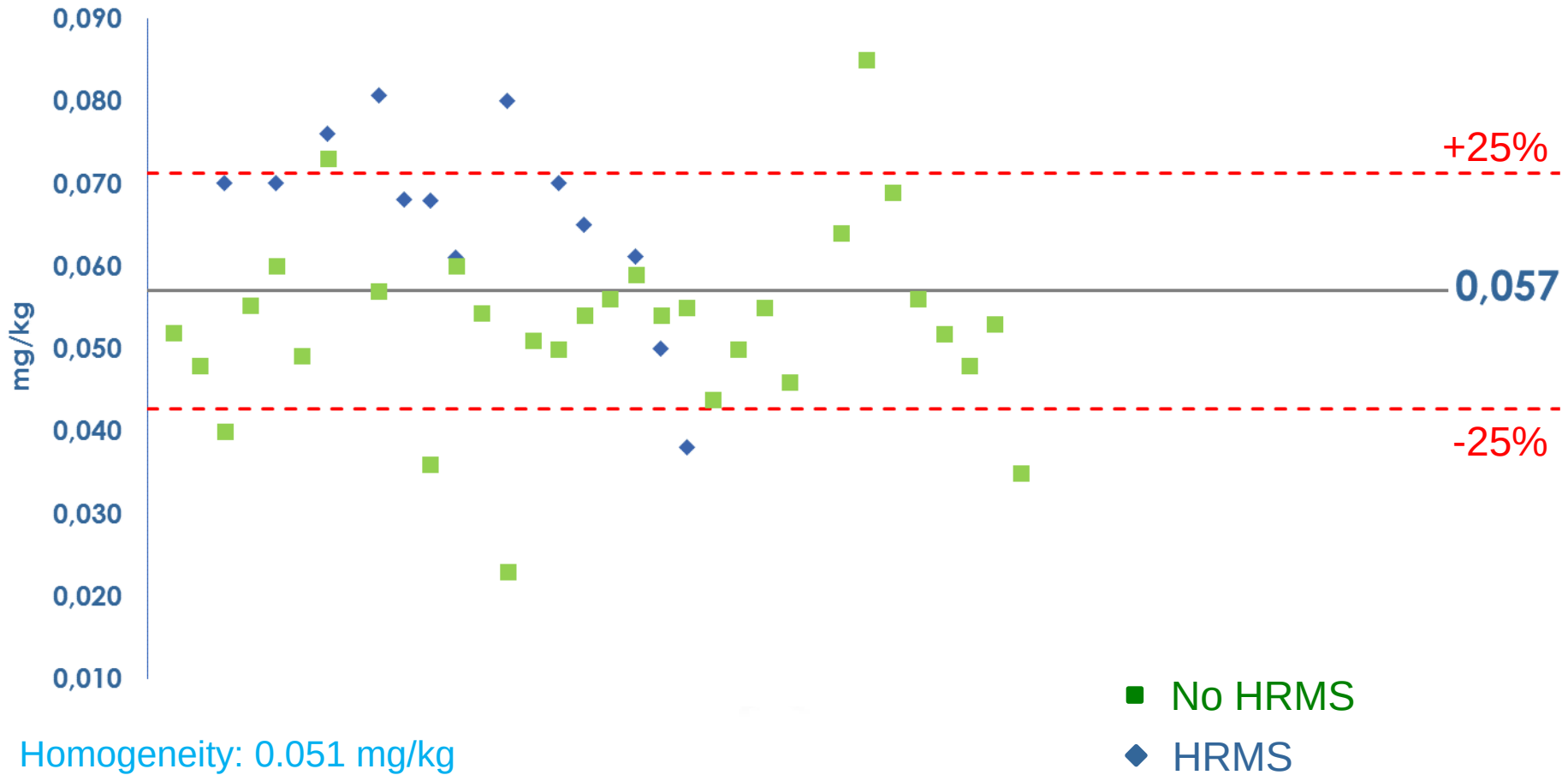
Isoprothiolane



Homogeneity: 0.064 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
55 (76%)	44

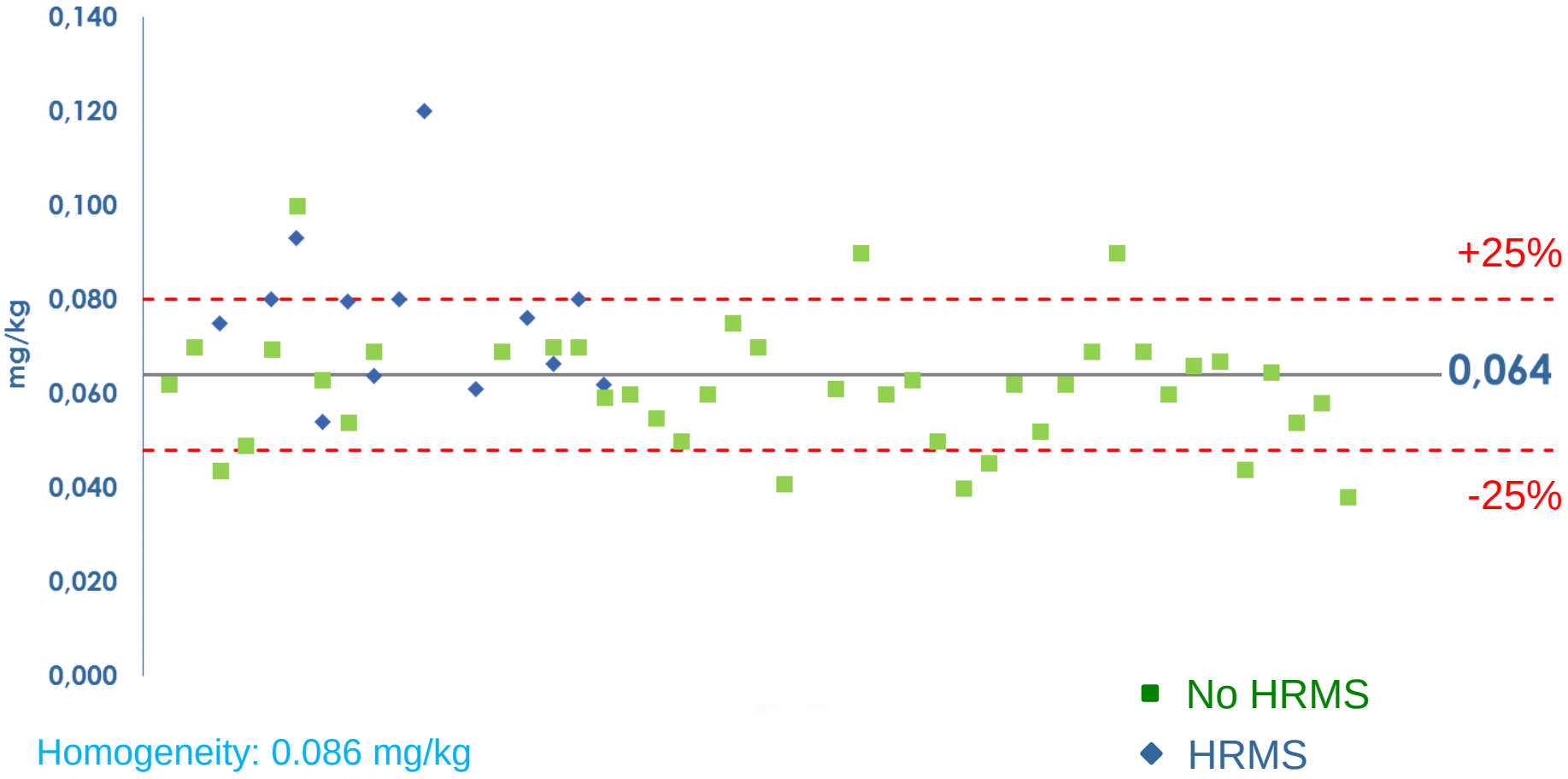
Isopyrazam



Homogeneity: 0.051 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
65 (88%)	54

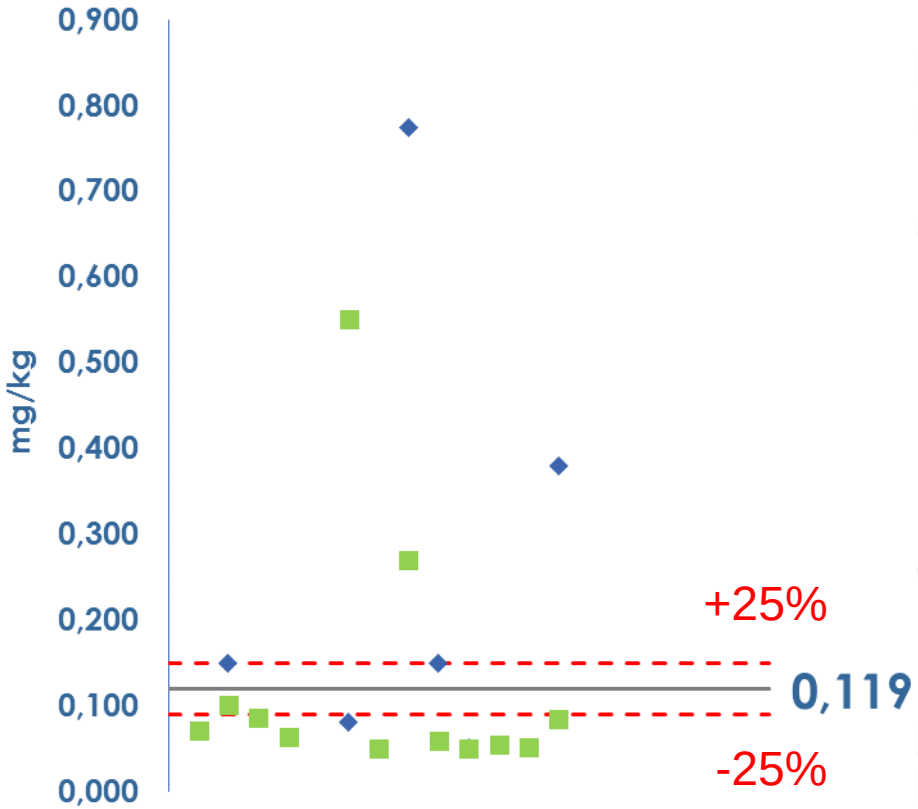
Metrafenone



Homogeneity: 0.086 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
28 (39%)	18

Orthosulfamuron

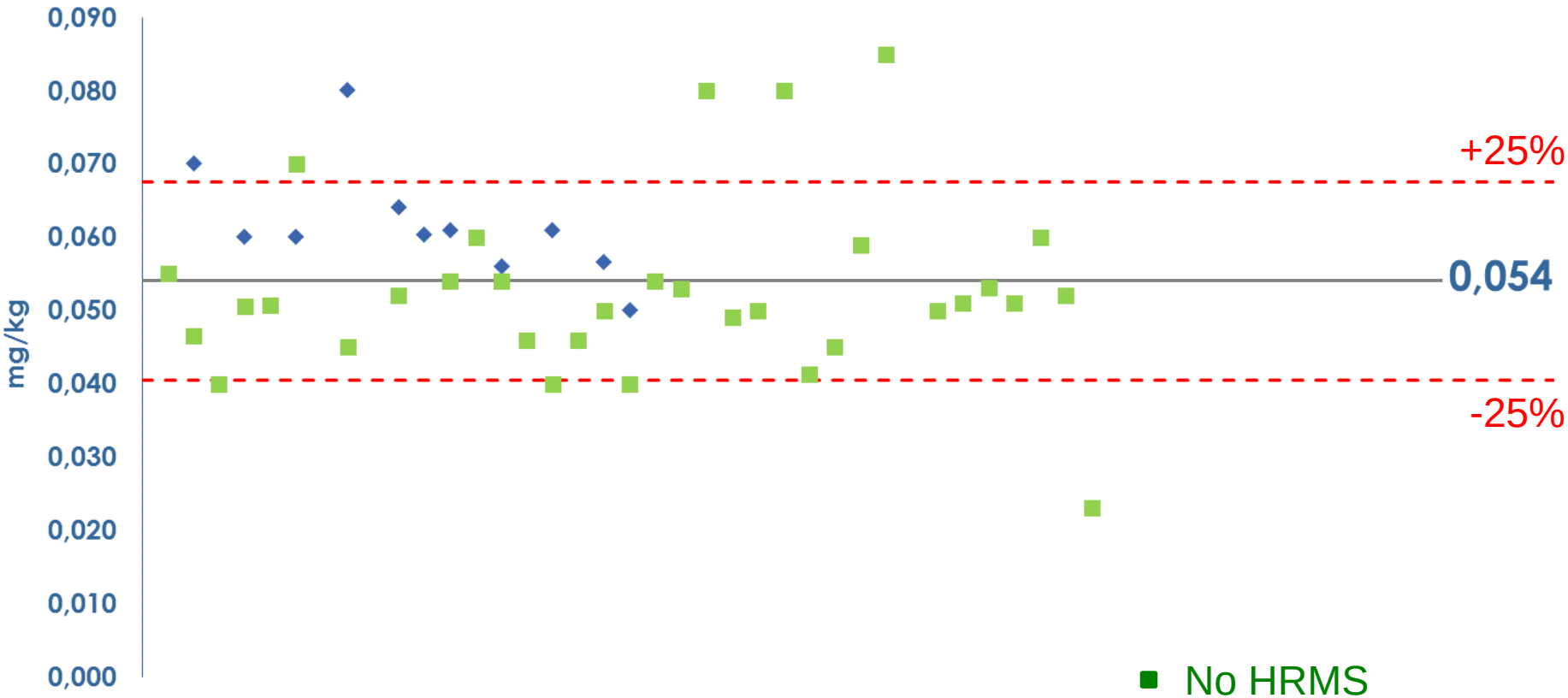


- No HRMS
- HRMS

Homogeneity: 0.070 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
56 (76%)	44

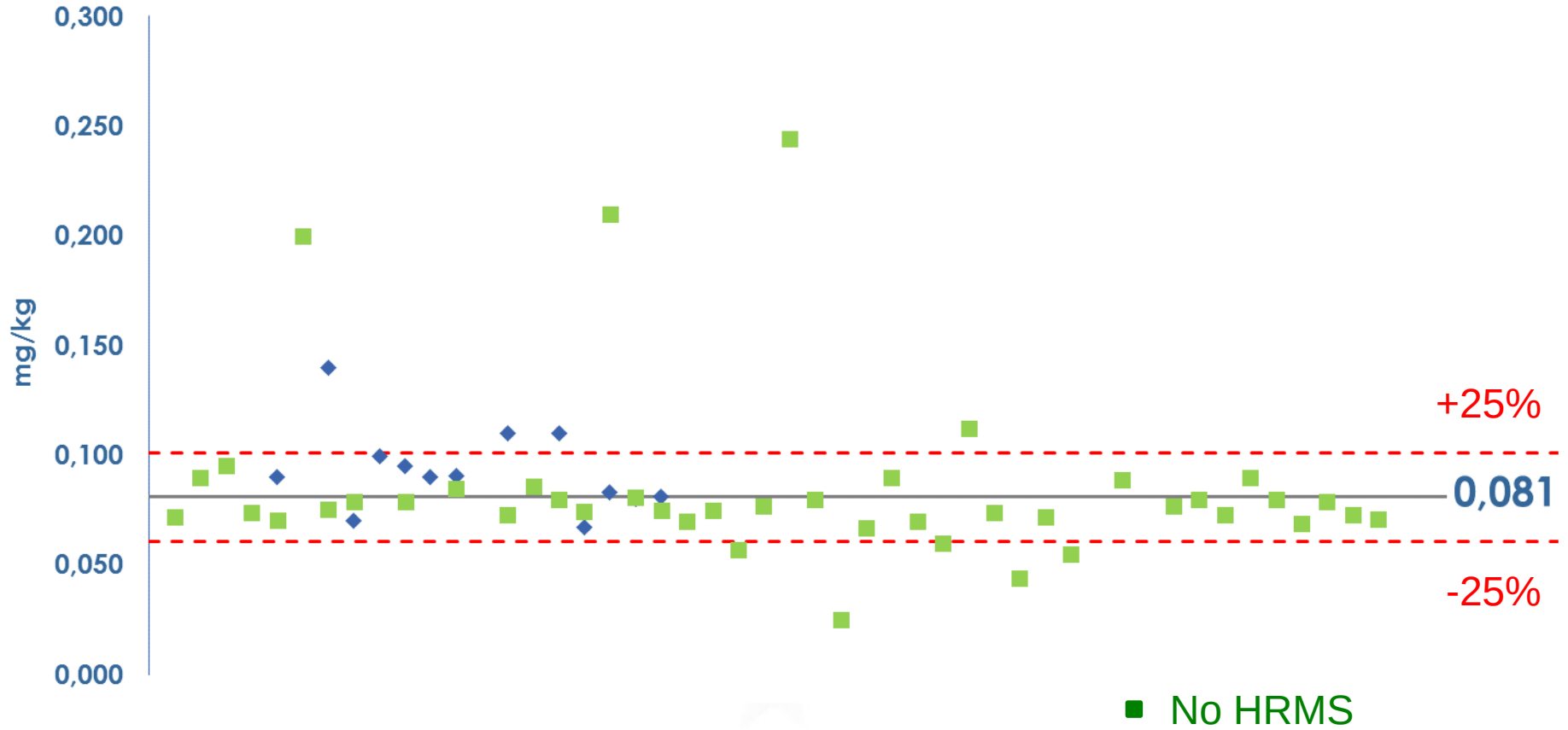
Penthiopyrad



Homogeneity: 0.077 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
68 (93%)	57

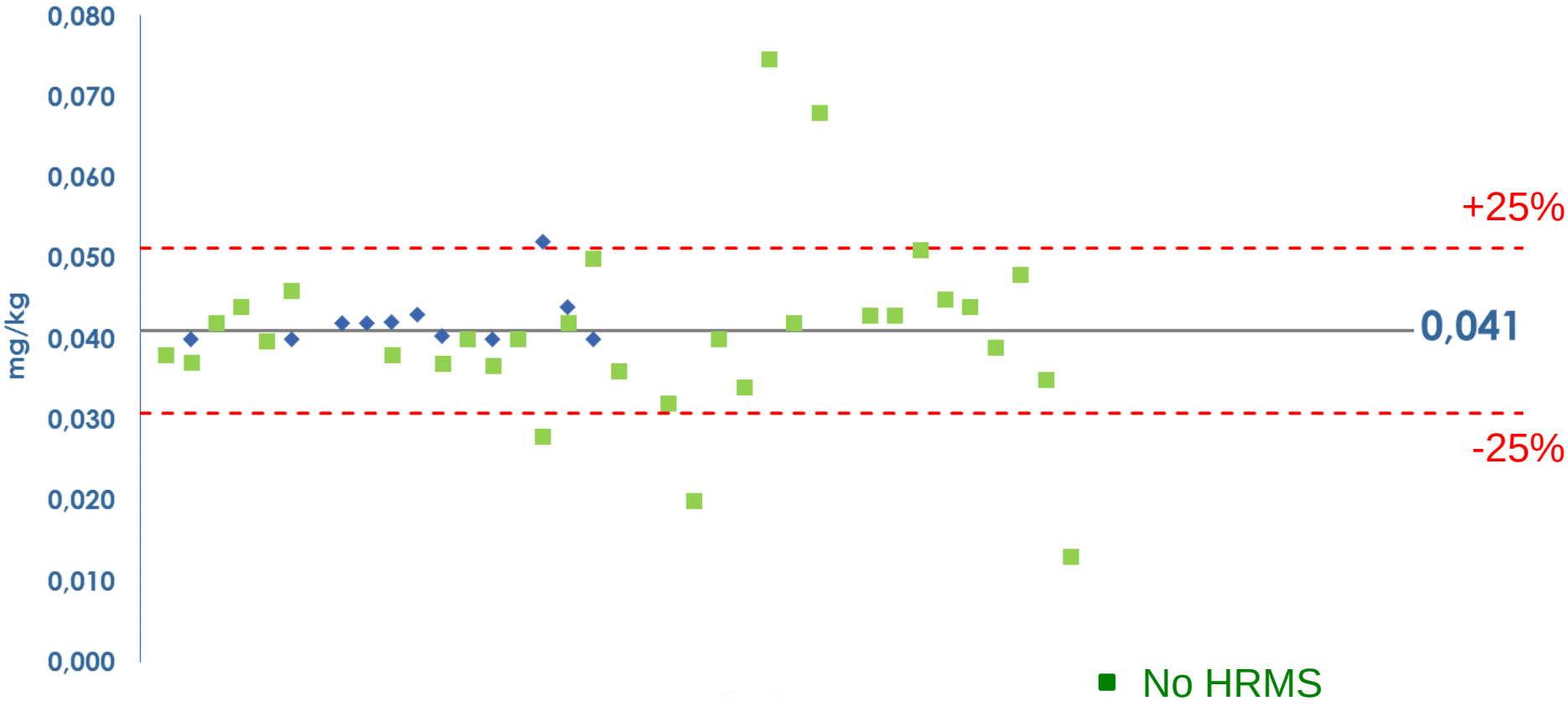
Propoxur



Homogeneity: 0.099 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
55 (75%)	42

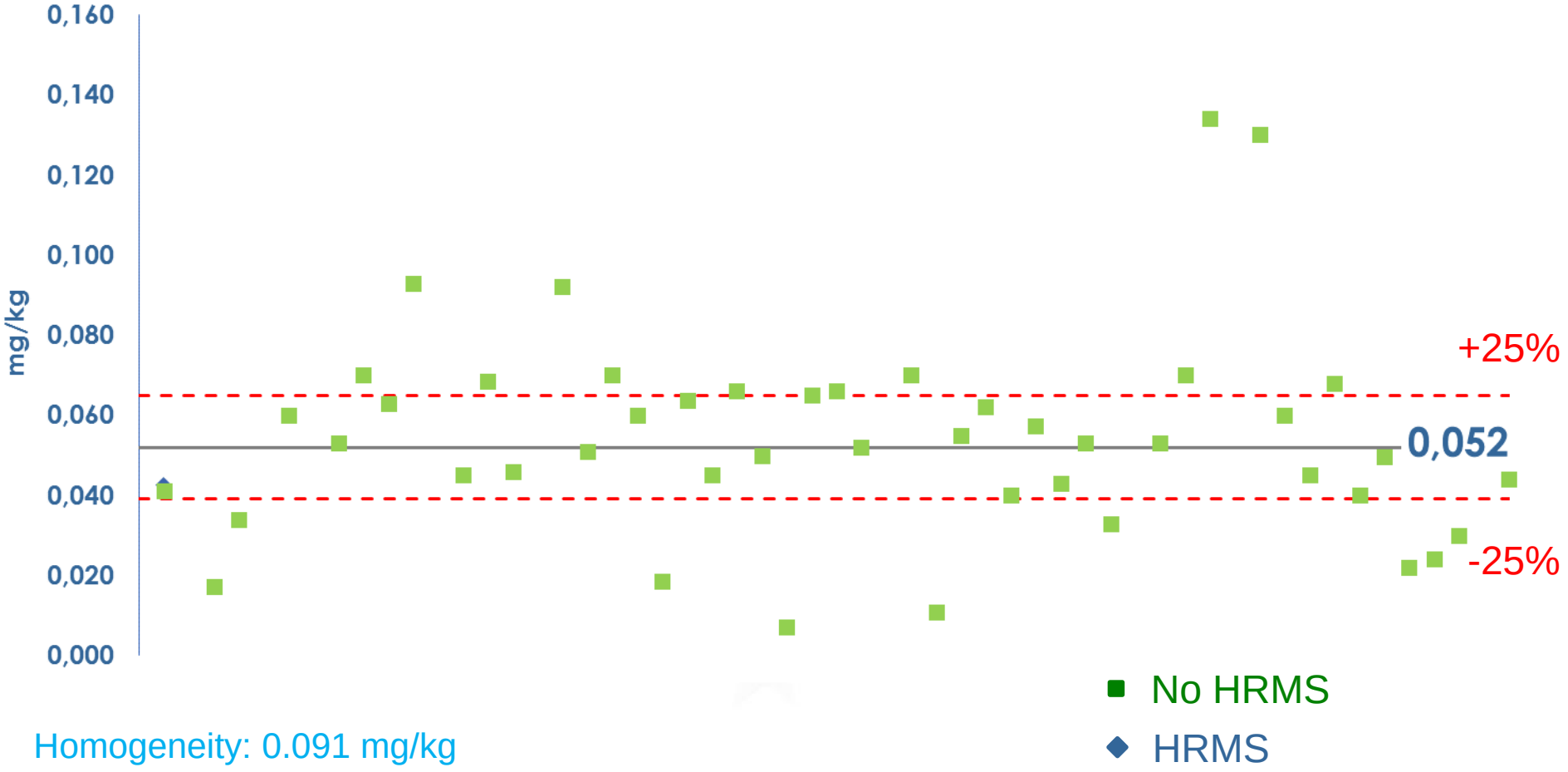
Pyridalil



Homogeneity: 0.067 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
71 (81%)	49

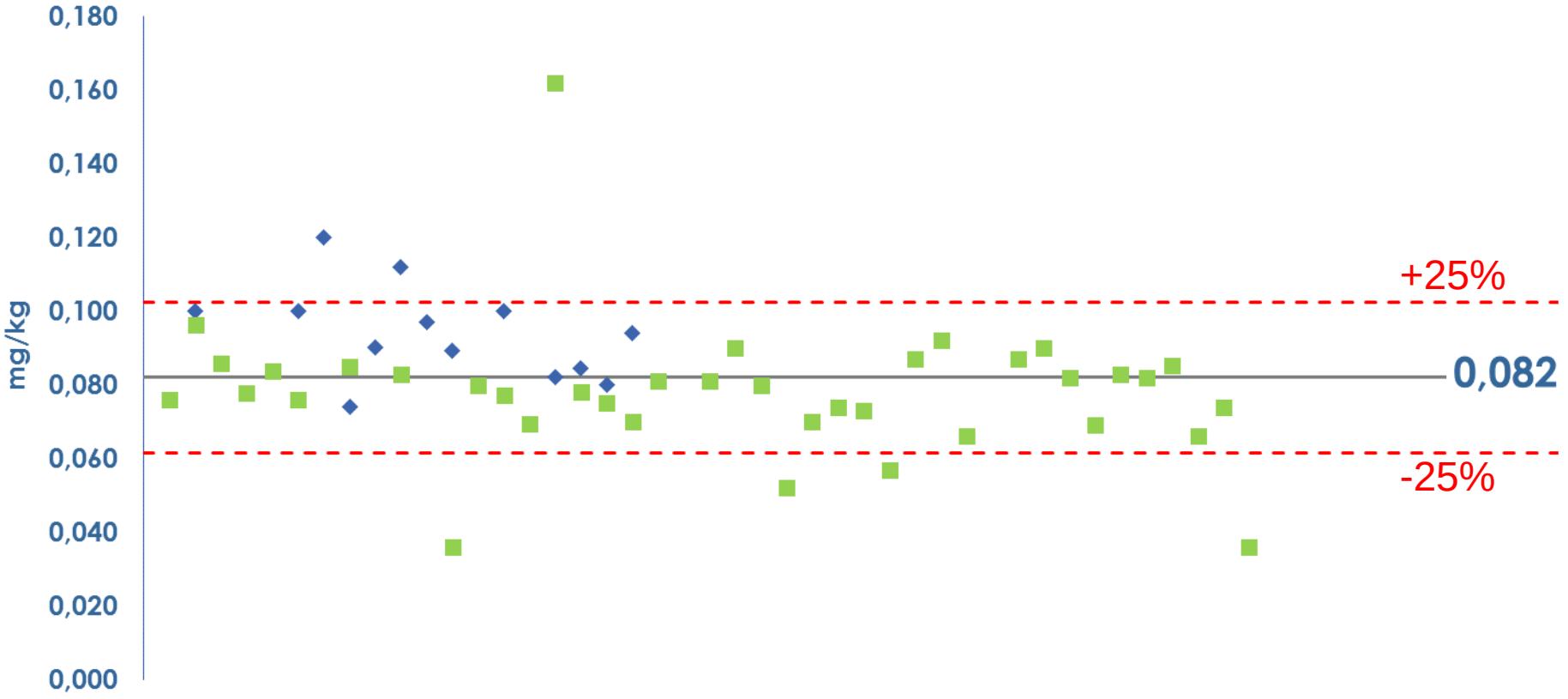
Spinetoram



Homogeneity: 0.091 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
62 (85%)	51

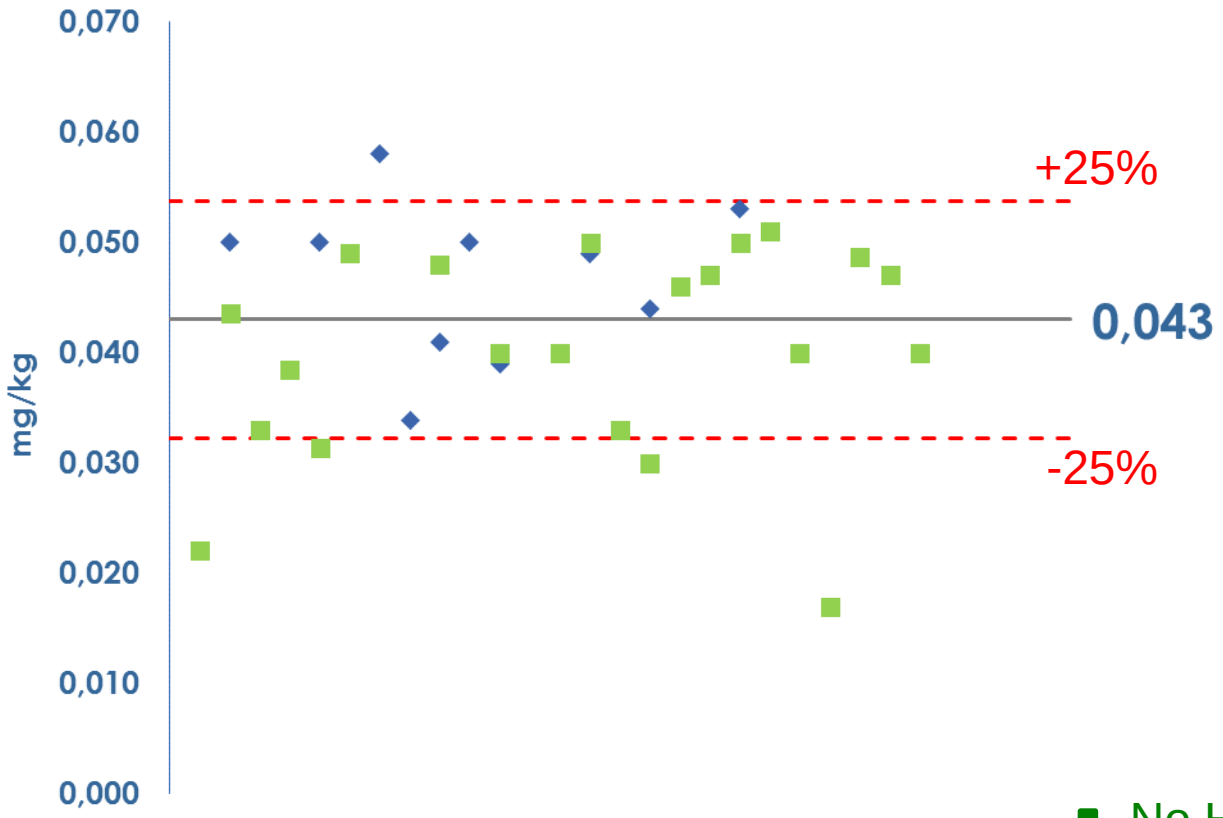
Tricyclazole



Homogeneity: 0.107 mg/kg

No of Detections (% of Laboratories)	No of Concentration Reported
44 (63%)	31

Valifenalate



Homogeneity: 0.061 mg/kg

Results

Other compounds (pesticides, natural products….) reported by laboratories:

Reported below 0.01 mg/kg or not quantified

Buprofezin
Diuron
Fenoxycarb
Flupyradifurone
Goitrine
Paraquat
Permethrin
Phenothrin
Phenylphenol
Propiconazole (sum of isomers)
Spirotetramat
Sulphur
Tembotrione
Tetraconazole
Thiamethoxam
Trifluralin

Results

Other compounds reported by laboratories:

Reported ABOVE 0.01 mg/kg

Aldimorph	Isocarbophos	Spinosad
Cymiazole	Isoxaflutole	Spiroxamine
Diuron	Metconazole	Sulfamethoxazole
	Triticonazole	

Thank You
for Your Attention

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