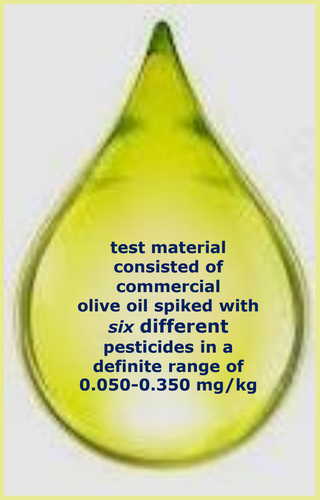
Results of the 16th Proficiency Test on Pesticide Residues in olive oil

Tiziana Generali[1], Patrizia Stefanelli[1], Silvana Girolimetti[1], Danilo Attard Barbini[1]

[1] Dipartimento di Ambiente e Salute, Istituto Superiore di Sanità, Rome, Italy



1 *blank oil* +1 *spiked oil*
Homogeneity and stability tests performed ISO 13528:2015

List of pesticides
Reporting Limit (RL) 0.05 mg/kg

Chlorpyrifos	Metidathion
Chlorpyrifos-methyl	Omethoate
lambda-Cyhalothrin	Oxyfluorfen
Deltamethrin	Phosalone
Diazinon	Procymidone
Diflufenican	Quinalfos
Dimethoate	Kresoxim methyl
alfa-Endosulfan	Simazine
beta-Endosulfan	Terbuthylazine
Endosulfan sulphate	Tolclofos methyl
Fenitrothion	Trifloxystrobin
Fenoxycarb	Trifluralin
Fenthion	
Fenthion sulfone	
Fenthion sulfoxide	

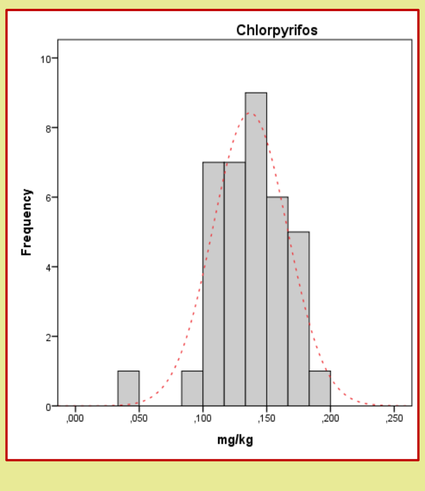
List of z-scores

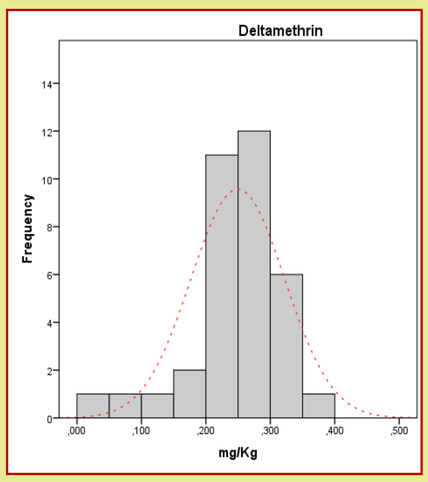
Lab	Chlorpyrifos	Deltamethrin	Alpha Endosulfan	Beta Endosulfan	Endosulfan sulphate	Metidathion
1	-1.1	0.5	-0.5	0.4	1.2	-0.4
2	0.7	1.1	1.0	0.6	0.7	0.3
3	-1.0	-0.3	-1.5	-1.0	0.7	0.8
5	-0.3	-1.1	-1.2	-0.2	-0.2	-0.4
6	-0.9	-2.4	0.5	-0.3	0.0	-1.6
7	-0.8	0.5	-1.9	-1.8	-0.8	-0.6
8	1.1	0.9	1.1	0.0	0.5	0.5
9	0.7	0.8	0.8	0.5	-0.8	0.0
10	-0.6	-0.7	-1.1	-0.6	0.6	0.5
11	0.1	-0.8	0.4	0.1	0.2	-0.1
12	-0.7	0.5	-2.0	-1.6	-0.7	-0.6
13	1.0	0.7	0.6	0.4	0.3	0.7
14	0.4	1.4	0.1	0.0	0.5	1.1
15	-2.7	-2.5			-1.7	-1.7
16	0.0	1.9	0.8	0.7	-1.9	0.4
17	0.6	0.3	0.4	0.8	0.7	-0.1
18	-0.3	-0.3	-0.8	0.3	0.2	0.4
21	0.3	0.2	0.6	0.7	-0.1	-0.1
22	1.5	0.4	1.2	1.0	-0.1	0.5
23	0.8	1.4	1.1	1.4	0.4	0.5
24	-0.1	-0.3	0.3	0.2	-0.5	-0.7
25	1.2	**-3.8**	1.6	1.5		0.2
26	0.0	0.3	0.6	0.2	0.5	0.3
27	0.6	-0.3	0.8	0.2	-0.2	-0.3
28	-0.5	0.4	-2.0	-1.8	-1.1	0.1
29	-1.3	-0.9			-1.0	0.2
30	-0.3	-1.0	-1.7	-0.1	-0.2	0.4
31	0.1	0.0	-0.7	-0.1	0.5	0.1
32	0.1	-0.5	-0.8	-0.4	0.0	0.3
33	1.0	0.0	**5***	**5***	1.0	-0.3
34	-0.8	-0.7	-1.7	-1.2	-0.3	-0.6
35	1.0	-0.1	0.4	0.0	0.1	0.5
36	-0.3	-0.3	-0.1	-2.2	-0.3	-0.7
37	0.3		0.6	-0.2	-0.9	-0.7
38	0.2	0.5	0.8	-0.3	0.6	0.6
39	-0.2	0.4	0.2	-0.3	0.6	-0.7

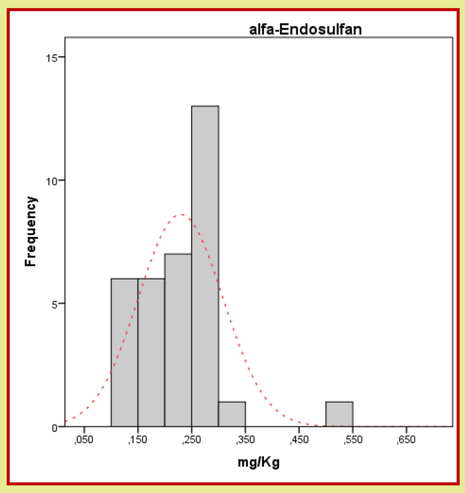
$$Z - score = \frac{x - X(robust\ mean)}{\sigma EUPT}$$

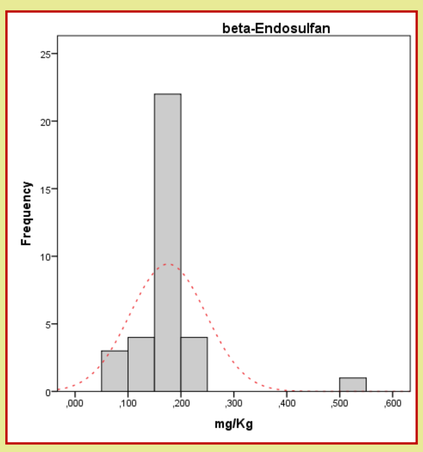
$$|AZ^2| = \frac{\sum_{i=1}^{n} |Zi|\ |Zi|}{n}$$

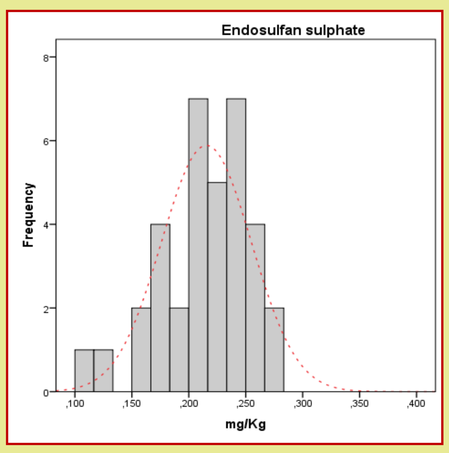
Three compounds Deltamethrin, alpha-Endosulfan and beta-Endosulfan presented distributions asymmetric

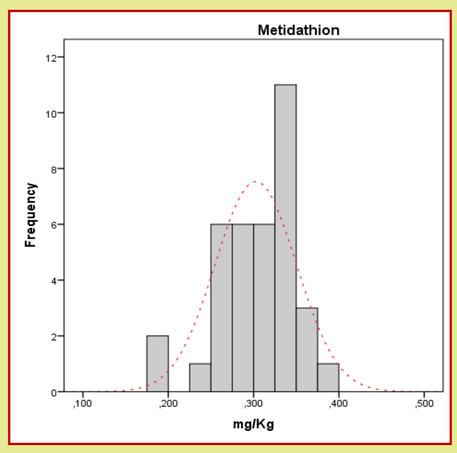


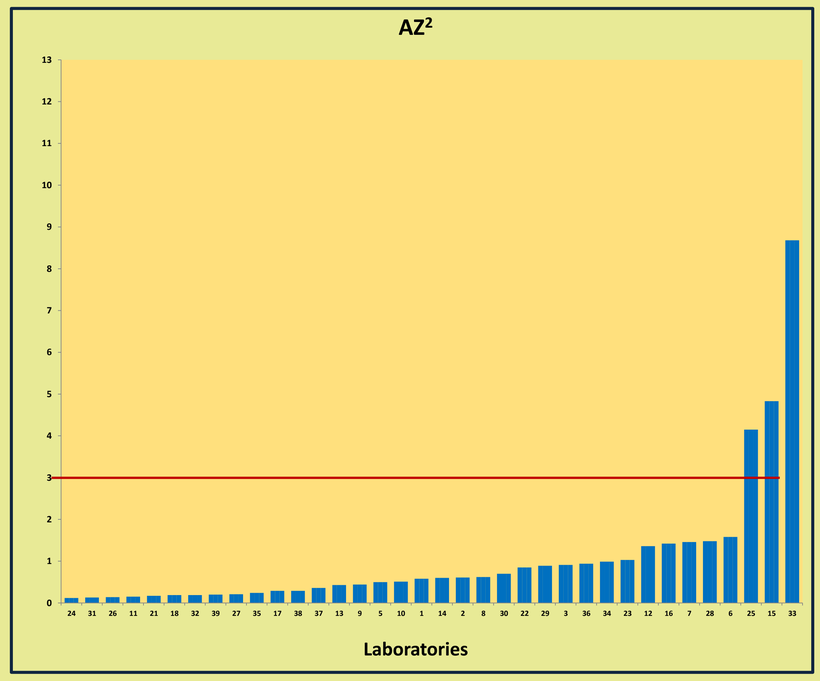












The compared results of two compounds analyzed in the 2015 and 2016 PTs showed an improvement in the performance of second PT

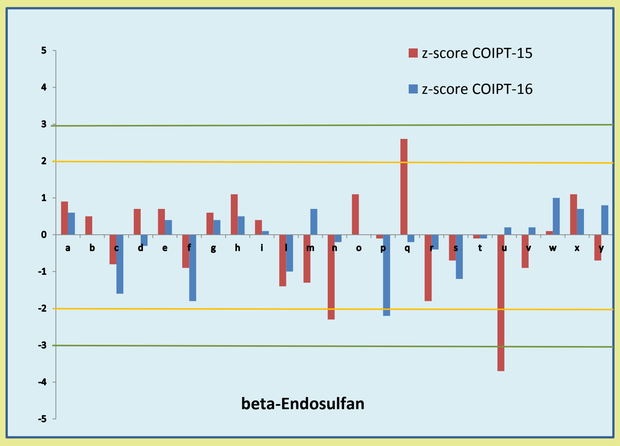
Methods

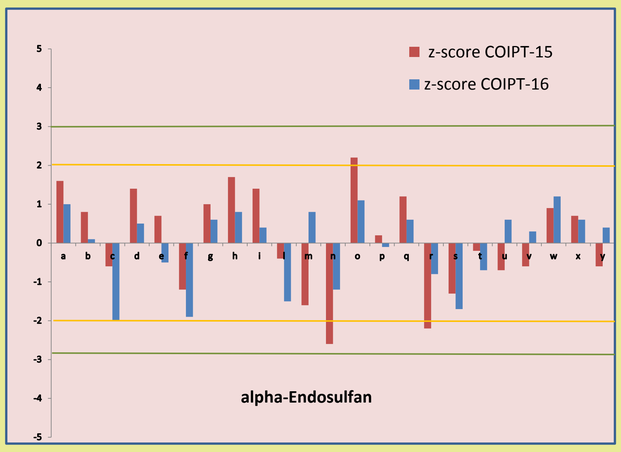
25 laboratories used the QuEChERS methodology or methods based on QuEChERS

6 laboratories used in house methods with an extraction step followed by a clean-up phase using the GPC technique, alumina cartridge or using combination of different materials as extrelut + silica+C_{18} as SPE or PSA+GCB+C_{18}

2 laboratories followed the method EURL-FV (2012-M6). "Validation Data of 127 Pesticides Using a Multiresidue Method by LC-MS/MS and GC-MS/MS in Olive Oil"

1 laboratory Lentza Rizos, Journal of Chromatography A 921 (2001) 297-304 1 laboratoryUNI EN 1528





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e-mail: tiziana.generali@iss.it