

Progetto Trieste – Pesticide Residues

FINAL REPORT

Laboratory Proficiency Testing for Food Analysis



01176

2025

Pesticide Residues

Round of October

CONTENTS

CONTENTS	2
INTRODUCTION	4
PREPARATION OF TEST MATERIALS, HOMOGENEITY, DISTRIBUTION	5
PERFORMANCE EVALUATION CRITERIA	6
CALCULATION OF THE ASSIGNED VALUE	6
PARTICIPANTS.....	9
REFERENCES	11
RESULTS	12
VF5800P, lettuce	13
VF5800G, lettuce.....	30
WH5801, wheat flour	33
W5802, red wine.....	39
H5803, honey	50
M5804, animal fat	63
LE5805P, dried lentils	73
LE5805G, dried lentils.....	84
ANNEX	87

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Round coordinator
08/01/2026 rev.0

INTRODUCTION

Test Veritas S.r.l has been accredited EN ISO/IEC 17043:2010 "Conformity assessment - General requirements for proficiency testing" by Accredia.

Also, the quality management system has been assessed and certified by SGS Italia as meeting the requirements of UNI EN ISO 9001:2015 for development and production of materials for agri-food analyses and proficiency supply.

62 laboratories participated to "Progetto Trieste – Pesticide Residues Proficiency Testing Pesticide Residues, round of October".

The test materials were dispatched on October 20th and 21st, 2025.

This Proficiency Testing Scheme offered different sets of test materials (biological matrices, see Table a).

Table a: test materials.

Test material Code	matrices	
VF5800	lettuce	60g x 1
WH5801	wheat flour	80g x 1
W5802	red wine	70ml x 1
H5803	honey	70g x 1
M5804	animal fat	50g x 1
LE5805	dried lentils	80g x 1

The molecules that could be present in the test materials are shown in Table b.

Table b: Molecules that have been spiked to the sample.

Test Material	Molecules
VF5800P	atrazine, boscalid, endrin*, fenhexamid, imazalil*, myclobutanil*, omethoate*, oxadixyl*
VF5800G*	Aminomethylphosphonic acid (AMPA), glyphosate
WH5801*	aminomethylphosphonic acid (AMPA), chlormequat (sum of chlormequat and its salts; expressed as chlormequat chloride), glyphosate, mepiquat (sum of mepiquat and its salts; expressed as mepiquat chloride)
W5802*	chlorpyrifos-methyl, iprodione, lambda-cyhalothrin, myclobutanil, pyrimethanil
H5803*	coumaphos, fluvalinate (tau), glyphosate, imidacloprid, thiacloprid, thiamethoxam
M5804*	aldrin, cyfluthrin (sum of constituent isomers), DDD-pp, endosulfan I (alpha), HCH-A (alpha hexachlorocyclohexane)
LE5805G*	glyphosate
LE5805P*	chlorfenvinphos, endrin, malathion, pirimicarb, profenofos

* test/measurand not ISO/IEC 17043:2010 accredited

Accreditation excludes, in any case, Accredia from any responsibility regarding the offered service.

PREPARATION OF TEST MATERIALS, HOMOGENEITY, DISTRIBUTION

Preparation

Vegetables: spiked and blank

Blank matrices (from organic farming) were homogenized with a cutter mixer. One portion of them was used in order to obtain blank sample: the other portion was added with spiking solution. The blank sample was checked for the absence of pesticides. Both samples separately, were homogenized with a magnetic stirrer and lyophilized. After mixing thoroughly, samples were dispensed into vials and kept at controlled temperature until dispatch. Spiked sample was checked for homogeneity.

Honey, wheat, legumes, wine, swine fat: spiked and blank

Blank matrices (from organic farming) were homogenized with a mixer. One portion of them was used in order to obtain blank sample: the other portion was added with spiking solution. The blank sample was checked for the absence of pesticides. Both samples separately, were homogenized. After mixing thoroughly, samples were dispensed into vials and kept at controlled temperature until dispatch. Spiked sample was checked for homogeneity.

Subcontractor

In order to check the batch's homogeneity, the analyses were performed by a competent subcontractor.

Homogeneity and stability

Appropriate homogeneity studies assessed that test materials are sufficiently homogeneous for the measurands under study.

Any exception will be statistically managed.

Appropriate stability studies assessed that test materials are stable for the time that elapsed between the dispatch of the samples and the deadline for submission of results.

Information about homogeneity and stability studies are available under request.

Labels

To avoid labelling errors, the Test Material blank and contaminated are always labelled on different days.

Distribution

In accordance with the stability established, the test materials were shipped in proper containers and conditions.

Dispatch was followed by the courier's parcel tracking system on the web site.

Shipments outside the EU can follow different procedures.

The parcel contains:

- A number of units of test material.
- A covering letter with the necessary instructions for use and storage of the materials, together with indications for reporting results in the on-line form.

An e-mail informed participants that materials were shipped. The e-mail contained an attached copy of the covering letter and safety information: if lyophilized samples are provided, a letter with recommendations on use of lyophilized materials is also attached.

PERFORMANCE EVALUATION CRITERIA

Laboratory code and confidentiality

Confidentiality is guaranteed. Participants are identified in the Final Report by a randomly assigned code.
The laboratory codes were communicated to participants through the web restricted area.

Result and concentration value

The compounds are generally detected by HPLC, GC, UPLC, etc...

Each participation includes the possibility of being evaluated for 2 different results (obtained with different methods or different technicians).

Participants were asked to report quantitative or semiquantitative ("lower than" or "higher than") results. Results can be given as:

- "=" means that the analyte was detected and quantified
- "< of..." means that the analyte was not detected
- "> of..." means that the analyte was detected but not quantified
- "Not Searched" means that the laboratory did not perform the analysis

Limit of quantification (LOQ/QL)

Limit of quantification for the relative compounds was claimed by the laboratories. If the QL is not reported by participants, in the tables the box will be empty.

False negative results

In case of false negative results, no evaluation is given.

If the laboratory does not detect the analyte that is effectively present, as its method does not allow it, this is an information concerning the capability of the method. The result is "congruent" but the participant should take into consideration if his method has the appropriate capability in respect of his requirement.

Other compounds detected in the test material

Additional compounds detected by participants are shown.

Elaboration of laboratory data

In the statistical data processing, all the data submitted by the participants are elaborated considering two decimal places. In case there are not declared decimal places, they are considered as corresponding to "zero" (E.g. 25=25.00 – 25.3=25.30 – 25.32=25.32).

CALCULATION OF THE ASSIGNED VALUE

The Assigned Value x_{pt}

The Assigned Value x_{pt} , is the value attributed to a particular property of proficiency test items (definition from ISO13528:2022).

The procedure for determining the Assigned Value x_{pt} is described below.

After excluding results that are identified as invalid the data population was checked for normality and for the presence of outliers by applying appropriate statistics. x_{pt} represents the value of concentration obtained from Algorithm A or from the median. The chosen value will be reported in the specific test material tables, where Algorithm A will be indicated as "ISO5725-5 (Alg.AS)" and median "MADe/Median".

Sometimes very low concentrations are quantified. When it occurs, the concentration value is assigned only if statistics described in this paragraph are applicable.

The value is not assigned when $p < 8$, where “p” is the number of data after invalid results rejection, when there is a bimodal distribution data or when the standard uncertainty is not negligible (based on PTp experience).

It may happen that only few participants confirm the presence of some analytes in the test materials. In such cases, the presence of an analyte is considered:

- “unconfirmed”, when less than 25 % of participants detect the compound;
- “confirmed”, when 25% of participants, or more, detect the compound (the minimum number of positive results is anyway three).

The standard uncertainty of the assigned value $u(x_{pt})$

The standard uncertainty $u(x_{pt})$ is calculated as:

$$u(x_{pt}) = 1.25 [s^* / \sqrt{p}]$$

where:

- s^* is the robust estimate of the participant standard deviation;
- p is the number of participants;
- 1.25 is the expanded factor

In case of median as estimator, the standard deviation is calculated as $s^* = \text{MADe}$ (where MADe is the Median Absolute Deviation).

In case of $u(x_{pt}) \geq 0.3 \sigma_{pt}$ the standard uncertainty of the assigned value is not negligible, so the effects of uncertainty are introduced in the calculation of the z-score, that will be calculated as z'-score.

z-score, z'-score and σ_{pt} (standard deviation for proficiency assessment)

When the number of quantitative data is $p \geq 8$, the participant's result are converted into a z-score according to the equation:

$$z\text{-score} = (x_i - x_{pt}) / \sigma_{pt}$$

where:

- x_i is the analyte concentration value reported by the laboratory;
- x_{pt} is the assigned value;
- σ_{pt} is the standard deviation for proficiency assessment calculated from b x_{pt} .
- $b = \%RSD / 100$, (RSD = Relative Standard Deviation)

unless otherwise specified the %RSD value comes from the Horwitz equation (Horwitz, W., 1988, *Pure Appl. Chem.* 60, 855-864)

$$\%RSD = 2^{(1-0.5 \log X_{pt})}$$

where x_{pt} is expressed as a dimensionless concentration.

σ_{pt} is related to the concentration of the analyte: it comes from Horwitz equation (unless otherwise specified). In case of contamination lower than 10 ppb the Thompson equation modified Horwitz equation (Thompson, M., 2000, *Analyst* 125, 385-386). In particular circumstance σ_{pt} is chosen from Proficiency Test provider's experience, derived from previous rounds.

The adopted criterion is reported in the specific test material table. In the result table, Thompson will be indicated as “Truncated Horwitz”.

In case of an inhomogeneous measurand the effects of inhomogeneity are introduced in the calculation of σ_{pt} , that will be calculated according to the equation:

$$\sigma'_{pt} = \sqrt{(\sigma_{pt}^2 + S_s^2)}$$

where:

- σ_{pt} is the standard deviation for proficiency assessment calculated from b x_{pt}
- S_s is the between-sample variance obtained in the homogeneity test

In this case the standard deviation for proficiency assessment will be indicated as σ'_{pt}

If $u(x_{pt}) < 0.3 \sigma_{pt}$ is not met, participants' results are converted into a z'-score according to the equation:

$$z'\text{-score} = (x_i - x_{pt}) / \sqrt{(\sigma_{pt}^2 + u^2(x_{pt}))}$$

where:

- x_i is the analyte concentration value reported by the laboratory;
- x_{pt} is the assigned value;
- σ_{pt} is the standard deviation for proficiency assessment calculated from b x_{pt}
- $u^2(x_{pt})$ is the standard uncertainty calculated as previously described.

The chosen score is reported in the specific test material table.

The laboratory performance evaluation was established taking into account the following criteria for z-score:

acceptable (satisfactory)	when	$ z \leq 2.0$
warning signal (questionable)	when	$2.0 < z < 3.0$
action signal (unsatisfactory)	when	$ z \geq 3.0$

Graphical presentation

When participants receive a score, it will be shown in the "bar-chart of z-score".

Where there is an invalid data, it will be mentioned in the table of assigned value and target standard deviations.

PARTICIPANTS

List of participants ordered by country.

- ARGENTINE COOPERATIVES ASSOCIATION, A.C.A. coop, Buenos Aires, Argentina
- NARDI - National Agricultural Research and Development Institute, Gaborone , Botswana
- LFDA/MG - Laboratório Federal de Defesa Agropecuária, Pedro Leopoldo - Minas Gerais, Brazil
- AGQ Chile S.A. (Agriquem America S.A), Santiago, Chile
- CEIMIC CHILE, Santiago 13, Chile
- Comercial Analab S.A., Santiago, Chile
- Eurofins Testing Chile S.A., Santiago, Chile
- INIA - Instituto de Investigaciones Agropecuarias - La Pintana, Santiago, Chile
- Laboratorios Davis, Santiago, Chile
- Merieux Nutrisciences Chile SPA, Rancagua, Chile
- OIRSA-Organismo Internacional Regional de Sanidad Agropecuaria, Heredia, Costa Rica
- LABRIS Tallinn Department, Lab for Chemistry, Tallinn, Estonia
- FOOD QUALITY AND SAFETY CONTROL LABORATORY (EFDA), Addis Ababa, Ethiopia
- JIJE Analytical Testing Service Laboratory. JIJE LaboGlass Pvt.Ltd company, Addis Abeba, Ethiopia
- Toxicology Laboratory Testing Head , Animal Products and Inputs Quality Testing Centre, Ethiopian Agricultural Authority, Addis Ababa, Ethiopia
- Animal Health Service of Bavaria - Tiergesundheitsdienst Bayern, Laboratory Chemistry, Poing, Germany
- Veterinary Laboratory of Serres Directorate of Veterinary Center of Thessaloniki Directorate General of Veterinary Services - Ministry of Rural Development and Food Greece , Serres, Greece
- Marjaan khatam, Tehran, Iran
- DAFM - Dept. of Agriculture, Food & the Marine, Veterinary Public Health Regulatory Laboratory, CO. Kildare , Ireland
- Teagasc Food Research Centre – Ashtown Residue Analysis Laboratory, Dublin 15, Ireland
- Kimron Veterinary Institute National Residue Control Laboratory, Bet-Dagan, Israel
- Alimenti e Ambiente SRL, Bagheria, Italy
- ALS Italia S.r.l., Zoppola , Italy
- ARPALAZIO - Agenzia Regionale Protezione Ambientale del Lazio, Latina, Latina, Italy
- ATS Milano Città Metropolitana Magazzino Laboratorio di Prevenzione, Milano, Italy
- Biochimie Lab, Campi Bisenzio, Italy
- BonassisaLab S.p.A, Foggia, Italy
- Centro analisi C.A.I.M. Srl, Follonica, Italy
- CENTRO DI SPERIMENTAZIONE AGRARIA E FORESTALE LAIMBURG, Ora , Italy
- CREA-AA - Consiglio per la ricerca e l'analisi dell'economia agraria - Agricoltura e Ambiente, Bologna, Italy
- D'Aniello Gennaro & C. s.n.c. - Laboratorio Analisi Alimenti & Ambiente, S.Egidio del Monte Albino, Italy
- ENOCONTROL SCARL, Alba, Italy
- F.Ili De Cecco di Filippo Fara San Martino S.p.A. - Laboratorio CQ, Fara San Martino , Italy
- Istituto Zooprofilattico Sperimentale del Lazio e della Toscana, Sede di Firenze, San Martino alla Palma, Italy
- Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle D Aosta I. Altara, Genova, Italy
- Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle D'Aosta I. Altara, Cuneo, Italy
- Istituto Zooprofilattico Sperimentale della Sicilia A. Mirri, Palermo, Italy
- Istituto Zooprofilattico Sperimentale delle Venezie, Legnaro, Italy
- Laboratori Vailati S.r.l., San Paolo , Italy
- Laboratorio di analisi Biomedix di Nanna Giovanni & C. S.a.s., Aulla , Italy
- SA.MER. SERVIZIO ANALISI CHIMICO-MERCEOLOGICHE, Bari, Italy
- STUDIO ANALISI CHIMICHE E AMBIENTALI S.A.S., Pisticci Scalo, Italy
- Malawi Bureau of Standards, Head Office. Testing Services, Blantyre, Malawi
- DAVAR- Direction des Affaires Veterinaires, Alimentaires et Rurales, PAÏTA, New Caledonia
- NAFDAC - National Agency for Food and Drug Administration and Control Central Laboratory Complex, Lagos, Nigeria
- MAFWR - Central Laboratory of Food Safety - Food Safety and Quality Center, Seeb, Muscat, Oman
- Servicio Nacional De Sanidad Agraria, LIMA , Peru

- Ministry of Public Health, Public Health Department, Central Food Laboratories - Food Safety & Environmental Health Division - Central Food Laboratories, Doha, Qatar
- ASOCIACIÓN DE ORGANIZACIONES DE PRODUCTORES DE FRUTAS Y HORTALIZAS DE ALMERÍA (COEXPHAL) (LABCOLOR), Mojónera (Almería), Spain
- CNTA - Centro Nacional de Tecnología y Seguridad Alimentaria, San Adrian, Spain
- FITOSOIL LABORATORIOS, S.L., San Ginés-Murcia, Spain
- Laboratorio De Salud Pública De Lugo, Lugo, Spain
- LARAGA - Laboratorio Agroalimentario y Ambiental, Toledo, Spain
- LQM Laboratorio Químico Microbiológico S.A. Grupo Biomaster, San Ginés (Murcia), Spain
- Swedish Food Agency - Livsmedelsverket, Uppsala, Sweden
- Antalya Gıda Kontrol Laboratuvar Müdürlüğü, Kepez, Türkiye
- Bilçev Özel Gıda Kontrol Laboratuvarı, Kemalpaşa / İZMİR, Türkiye
- FORMÜL LABORATUAR HİZMETLERİ GIDA KİM. DAN. ÇEV. EĞT. SAN. VE TİC. LTD. ŞTİ. Özel Gıda Kontrol Laboratuvarı, Ataşehir İSTANBUL, Türkiye
- SIMPLIQA, Akdeniz, Türkiye
- UNBS - Uganda National Bureau of Standards - Headquarters, Kampala, Uganda
- Division de Laboratorios Veterinarios - MGAP - Ministerio de Ganadería, Agricultura y Pesca, Montevideo, Uruguay
- Ministry of Agriculture and Rural Development NAFIQAD - National Agro Forestry Fisheries Quality Assurance Depart. NAFIQAD Branch 4, Hồ Chí Minh City, Vietnam

REFERENCES

“Progetto Trieste” is managed in agreement to:

- UNI CEI EN ISO/IEC 17043:2010 Conformity assessment – General requirements for proficiency testing
- EURACHEM Selection, Use and Interpretation of Proficiency Testing (PT) Schemes, 3rd edition, 2021
- ISO 13528:2022 Statistical method for use in proficiency testing by interlaboratory comparisons
- UNI CEI EN ISO 17034:2017 General requirements for the competence of reference materials producers
- IUPAC Technical Report The International Harmonized Protocol for the Proficiency Testing of Analytical Chemistry Laboratories, 2006

RESULTS

Proficiency test VF5800P, result contents

pesticides (excluding glyphosate and AMPA) in lettuce;

- **Test material VF5800P**

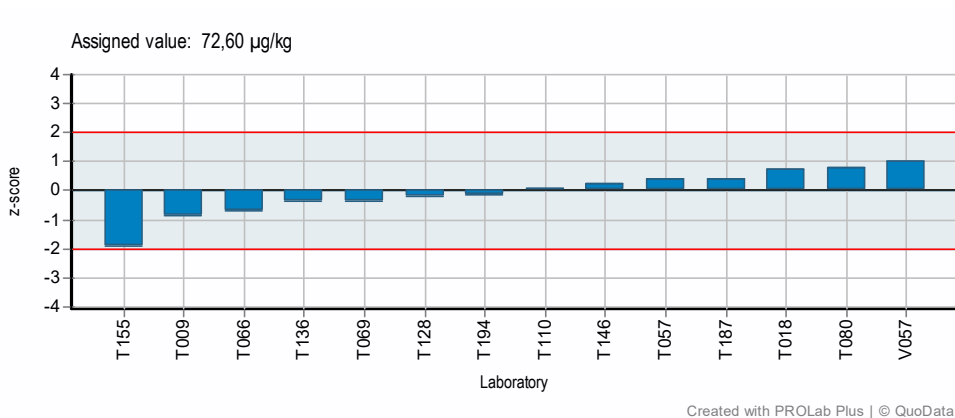
Test material VF5800P, lettuce

VF5800P, atrazine

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
atrazine	14	72,60	12,59	17,34	4,21	Yes	Horwitz	17,23	38,14	107,06

Figure 1: z-scores for lettuce, atrazine



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 14	71,62 $\mu\text{g/kg}$
Standard deviation	n= 14	13,28 $\mu\text{g/kg}$
Coefficient of variation	n= 14	18,54 %

Test material VF5800P, lettuce

Results of analyses performed on test material VF5800P.

VF5800P, atrazine

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T009	57,64		-0,87	10,00	-
T018	85,65	96,00	0,76	10,00	-
T057	80	94,00	0,43	10,00	YES
T066	61		-0,67	5,00	NO
T069	66,1	41,50	-0,38	10,00	-
T080	86	108,00	0,78	10,00	NO
T085	NS				-
T110	73,89	102,66	0,07	10,00	YES
T122	NS				-
T128	69	93,00	-0,21	10,00	NO
T136	66	97,00	-0,38	10,00	NO
T146	77,00		0,26	10,00	-
T155	40,05	85,50	-1,89	10,00	NO
T183	NS				-
T187	80	110,00	0,43	10,00	NO
T194	70,39		-0,13	10,00	-
V057	90	104,00	1,01	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

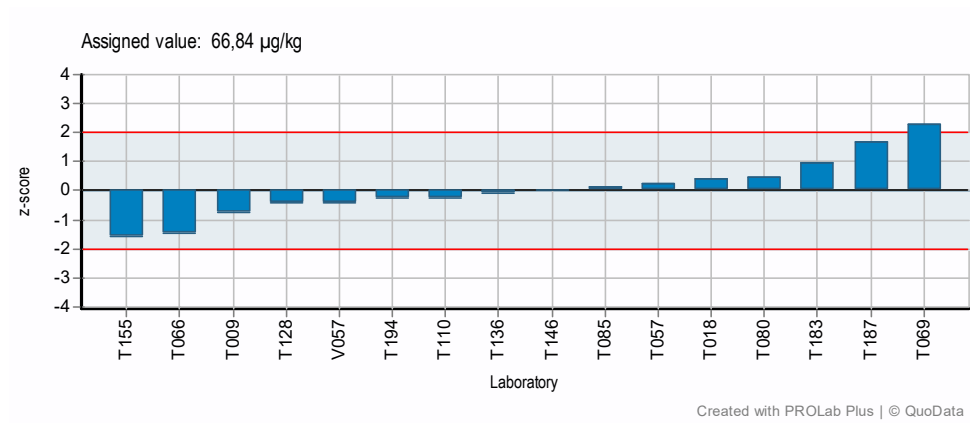
Test material VF5800P, lettuce

VF5800P, boscalid

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
boscalid	16	66,84	15,14	22,65	4,73	Yes	Horwitz	16,07	34,70	98,98

Figure 2: z-scores for lettuce, boscalid



Percentage of satisfactory scores 93,75%

Concentration, arithmetic mean	n= 16	67,80 µg/kg
Standard deviation	n= 16	16,11 µg/kg
Coefficient of variation	n= 16	23,76 %

Test material VF5800P, lettuce

Results of analyses performed on test material VF5800P.

VF5800P, boscalid

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T009	55		-0,74	10,00	-
T018	73,18	92,00	0,39	10,00	-
T057	71	100,00	0,26	10,00	YES
T066	43		-1,48	10,00	NO
T069	103,8	47,50	2,30	10,00	-
T080	74	101,00	0,45	10,00	NO
T085	69		0,13	10,00	-
T110	63,08	97,59	-0,23	10,00	YES
T122	NS				-
T128	60	86,00	-0,43	10,00	NO
T136	65	111,00	-0,11	10,00	NO
T146	67,00		0,01	10,00	-
T155	41,9	108,80	-1,55	10,00	NO
T183	82,00	93,00	0,94	10,00	NO
T187	94	120,00	1,69	10,00	NO
T194	62,77		-0,25	10,00	-
V057	60	86,00	-0,43	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

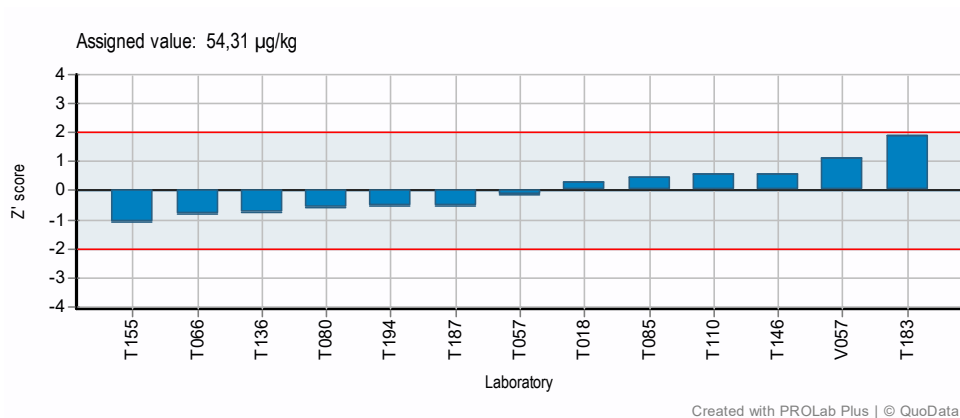
Test material VF5800P, lettuce

VF5800P, fenhexamid

Assigned value and target standard deviations.

Analyte	Assigned value		µg/kg		Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
fenhexamid	13	54,31	12,38	22,80	4,29	No	Horwitz	13,47	26,04	82,58

Figure 3: Z' scores for lettuce, fenhexamid



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 13	54,93 µg/kg
Standard deviation	n= 13	12,22 µg/kg
Coefficient of variation	n= 13	22,24 %

Test material VF5800P, lettuce

Results of analyses performed on test material VF5800P.

VF5800P, fenhexamid

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T009	<10			10,00	-
T018	58,97	102,00	0,33	10,00	-
T057	52	100,00	-0,16	10,00	YES
T066	43		-0,80	10,00	NO
T069	NS				-
T080	46	93,00	-0,59	10,00	NO
T085	61		0,47	10,00	-
T110	62,41	92,97	0,57	10,00	YES
T122	NS				-
T128	NS				-
T136	44	103,00	-0,73	10,00	NO
T146	62,50		0,58	10,00	-
T155	39,41	94,10	-1,05	10,00	NO
T183	80,98	93,00	1,89	10,00	NO
T187	47	100,00	-0,52	10,00	NO
T194	46,88		-0,53	10,00	-
V057	70	108,00	1,11	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

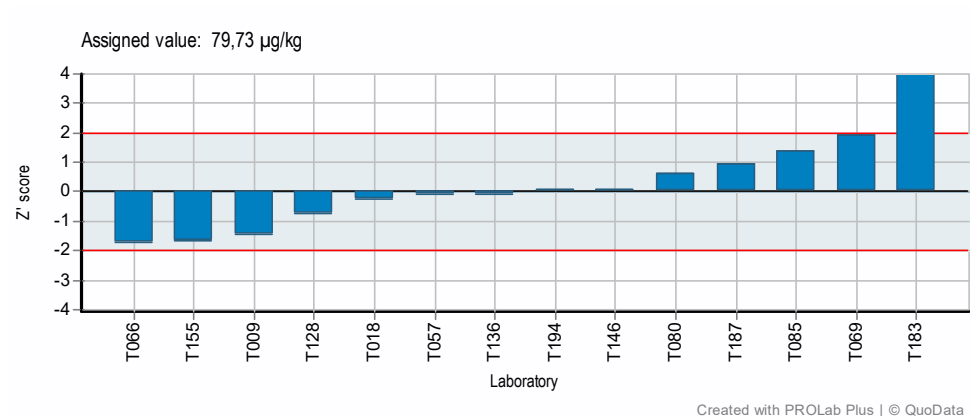
Test material VF5800P, lettuce

VF5800P, imazalil

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	MADe/Median	MADe	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
imazalil	14	79,73	25,21	31,62	8,42	No	Horwitz	18,66	42,41	117,05

Figure 4: Z' scores for lettuce, imazalil



Percentage of satisfactory scores 92,86%

Concentration, arithmetic mean	n= 14	85,16 µg/kg
Standard deviation	n= 14	33,99 µg/kg
Coefficient of variation	n= 14	39,91 %

Test material VF5800P, lettuce

Results of analyses performed on test material VF5800P.

VF5800P, imazalil

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T009	50,24		-1,44	10,00	-
T018	74,47	81,00	-0,26	10,00	-
T057	78	104,00	-0,08	10,00	YES
T066	45		-1,70	5,00	NO
T069	118,9	141,50	1,91	10,00	-
T080	92	70,00	0,60	10,00	NO
T085	108		1,38	10,00	-
T110	<10			10,00	-
T122	NS				-
T128	65	87,00	-0,72	10,00	NO
T136	78	99,00	-0,08	10,00	NO
T146	81,5		0,09	10,00	-
T155	45,6	91,90	-1,67	10,00	NO
T183	175,00	93,00	4,65	10,00	NO
T187	99	110,00	0,94	10,00	NO
T194	81,46		0,08	10,00	-
V057	NS				-

Concentration and DL have the measurement unit of µg/kg.

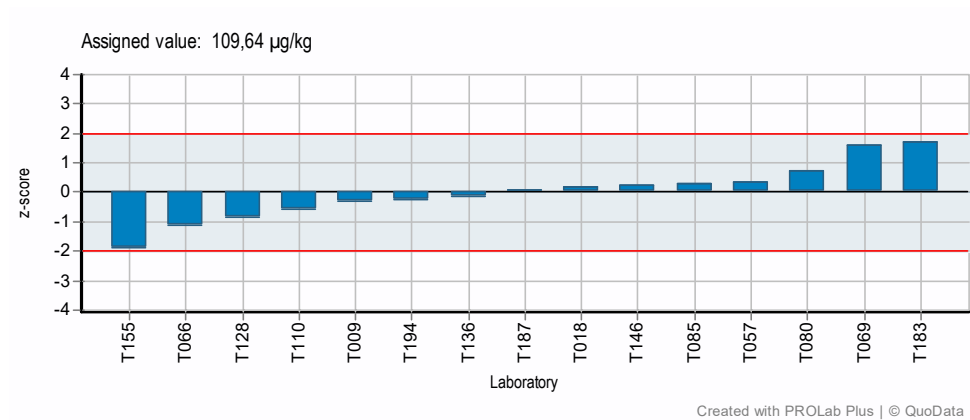
Test material VF5800P, lettuce

VF5800P, myclobutanil

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g}/\text{kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
myclobutanil	15	109,64	21,94	20,01	7,08	Yes	Horwitz	24,46	60,72	158,56

Figure 5: z-scores for lettuce, myclobutanil



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 15	109,81 $\mu\text{g}/\text{kg}$
Standard deviation	n= 15	23,09 $\mu\text{g}/\text{kg}$
Coefficient of variation	n= 15	21,03 %

Test material VF5800P, lettuce

Results of analyses performed on test material VF5800P.

VF5800P, myclobutanil

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T009	102,16		-0,31	10,00	-
T018	113,82	70,00	0,17	5,00	-
T057	119	92,00	0,38	10,00	YES
T066	82		-1,13	10,00	NO
T069	149,1	54,70	1,61	10,00	-
T080	127	115,00	0,71	10,00	NO
T085	117		0,30	10,00	-
T110	95,26	106,62	-0,59	10,00	YES
T122	NS				-
T128	89	88,00	-0,84	10,00	NO
T136	107	102,00	-0,11	10,00	NO
T146	115,00		0,22	10,00	-
T155	63,4	110,90	-1,89	10,00	NO
T183	151,83	93,00	1,72	10,00	NO
T187	112	100,00	0,10	10,00	NO
T194	103,56		-0,25	10,00	-
V057	NS				-

Concentration and DL have the measurement unit of µg/kg.

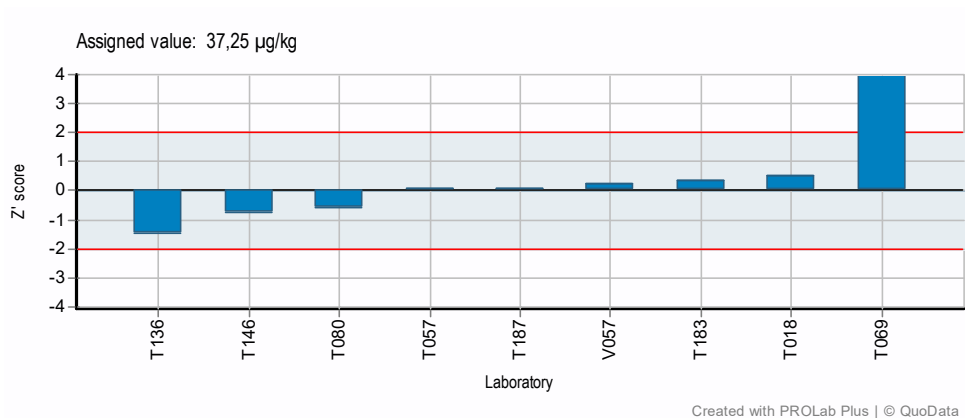
Test material VF5800P, lettuce

VF5800P, omethoate

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
omethoate	9	37,25	9,55	25,64	3,98	No	Horwitz	9,78	16,14	58,37

Figure 6: Z' scores for lettuce, omethoate



Percentage of satisfactory scores 88,89%

Concentration, arithmetic mean	n= 9	41,08 µg/kg
Standard deviation	n= 9	18,45 µg/kg
Coefficient of variation	n= 9	44,92 %

Test material VF5800P, lettuce

Results of analyses performed on test material VF5800P.

VF5800P, omethoate

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T009	>10			10,00	-
T018	42,97	99,00	0,54	5,00	-
T057	38	92,00	0,07	10,00	YES
T066	NS				-
T069	86,9	53,00	4,70	10,00	-
T080	31	90,00	-0,59	10,00	NO
T085	NS				-
T110	<10			10,00	-
T122	NS				-
T128	NS				-
T136	22	96,00	-1,44	10,00	NO
T146	29,50		-0,73	10,00	-
T155	>0,00			10,00	-
T183	41,31	93,00	0,38	10,00	NO
T187	38	120,00	0,07	10,00	NO
T194	NS				-
V057	40	92,00	0,26	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

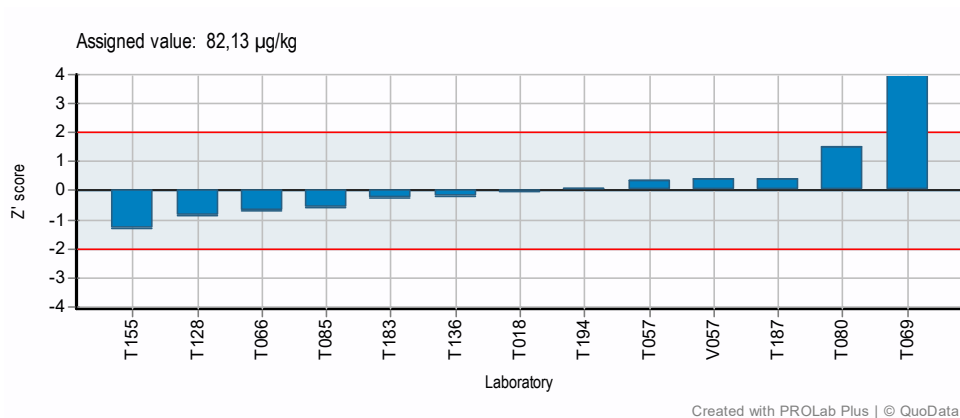
Test material VF5800P, lettuce

VF5800P, oxadixyl

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
oxadixyl	13	82,13	17,91	21,81	6,21	No	Horwitz	19,14	41,89	122,37

Figure 7: Z' scores for lettuce, oxadixyl



Percentage of satisfactory scores 92,31%

Concentration, arithmetic mean	n= 13	86,66 µg/kg
Standard deviation	n= 13	27,27 µg/kg
Coefficient of variation	n= 13	31,46 %

Test material VF5800P, lettuce

Results of analyses performed on test material VF5800P.

VF5800P, oxadixyl

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T009	NS				-
T018	81,68	90,00	-0,02	10,00	-
T057	89	107,00	0,34	10,00	YES
T066	68		-0,70	10,00	NO
T069	163,9	49,30	4,06	10,00	-
T080	113	101,00	1,53	10,00	NO
T085	70		-0,60	10,00	-
T110	NS				-
T122	NS				-
T128	65	84,00	-0,85	10,00	NO
T136	78	104,00	-0,21	10,00	NO
T146	<10			10,00	-
T155	56,2	118,10	-1,29	10,00	NO
T183	76,82	93,00	-0,26	10,00	NO
T187	91	110,00	0,44	10,00	NO
T194	84,01		0,09	10,00	-
V057	90	94,00	0,39	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

Test material VF5800P, lettuce

Results of analyses performed on test material VF5800P.

VF5800P, endrin, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T009	11,1	-	10	-
T018	<10,0	-	10,0	-
T057	21	102	10	YES
T066	19	-	5	NO
T069	NS	-	-	-
T080	<10	-	10	-
T085	NS	-	-	-
T110	20,91	100,06	10	YES
T122	0	-	-	-
T128	NS	-	-	-
T136	NS	-	-	-
T146	22,00	-	10	-
T155	NS	-	-	-
T183	NS	-	-	-
T187	<10	-	10	-
T194	NS	-	-	-
V057	NS	-	-	-

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 5	18,80 µg/kg
Standard deviation	n= 5	4,44 µg/kg
Coefficient of variation	n= 5	23,62 %

The value is not assigned when $p < 8$, where "p" is the number of data after invalid results rejection.

Test material VF5800P, lettuce,

Other compounds detected in the test material.

VF5800P	
Lab. code	Other compounds (µg/kg)
T122	chlordane (cis) (6,5), HCH-A (alpha hexachlorocyclohexane) (2,3)
T146	oxamyl (77,00)

Proficiency test VF5800G, result contents

glyphosate + AMPA in lettuce;

- **Test material VF5800G**

Test material VF5800G, lettuce

Results of analyses performed on test material VF5800G.

VF5800G, Aminomethylphosphonic acid (AMPA), presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T018	117,48	106,00	20,00	NO
T027	NS	-	-	-
T062	NS	-	-	-
T076	64,5	-	25	YES
T080	NS	-	-	-
T155	106,40	108	10	NO
T183	60	25	10	YES

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 4	87,10 µg/kg
Standard deviation	n= 4	29,10 µg/kg
Coefficient of variation	n= 4	33,41 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

Test material VF5800G, lettuce

Results of analyses performed on test material VF5800G.

VF5800G, glyphosate, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T018	335,06	129,00	20,00	NO
T027	199	108	10	NO
T062	119	85	10	NO
T076	100,0	-	25	YES
T080	274	138	10	NO
T155	42,08	104	10	NO
T183	62	82	10	NO

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 7	161,59 µg/kg
Standard deviation	n= 7	111,01 µg/kg
Coefficient of variation	n= 7	68,70 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

Proficiency test WH5801, result contents

pesticides and glyphosate in wheat flour;

- **Test material WH5801**

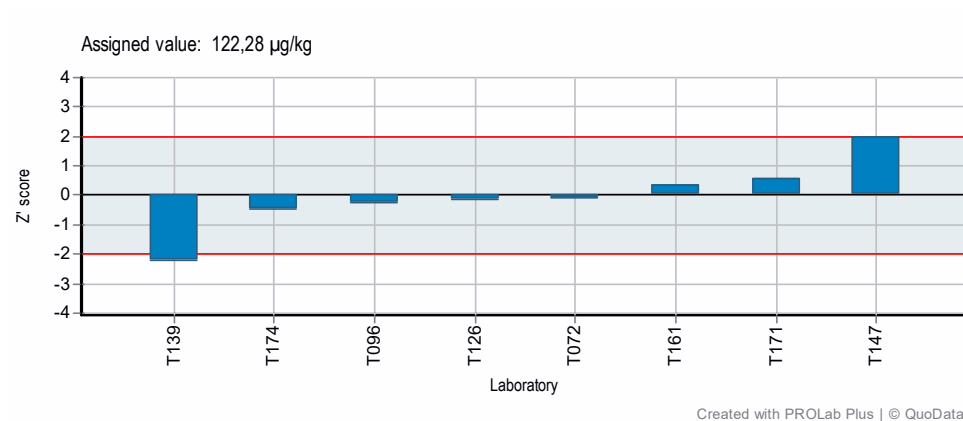
Test material WH5801, wheat flour

WH5801, glyphosate

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
glyphosate	8	122,28	26,49	21,66	11,71	No	Horwitz	26,84	63,72	180,84

Figure 8: Z' scores for wheat flour, glyphosate



Percentage of satisfactory scores 87,50%

Concentration, arithmetic mean	n= 8	121,31 µg/kg
Standard deviation	n= 8	34,28 µg/kg
Coefficient of variation	n= 8	28,26 %

Test material WH5801, wheat flour

Results of analyses performed on test material WH5801.

WH5801, glyphosate

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T059	NS				-
T072	120,00		-0,08	10,00	NO
T096	114,4	95,00	-0,27	20,00	NO
T126	118		-0,15	10,00	-
T139	57		-2,23	10,00	NO
T147	179,8	62,00	1,96	50,00	NO
T161	133,3		0,38	10,00	-
T171	139	111,00	0,57	20,00	NO
T174	109	80,00	-0,45	100,00	NO

Concentration and DL have the measurement unit of µg/kg.

Test material WH5801, wheat flour

Results of analyses performed on test material WH5801.

WH5801, aminomethylphosphonic acid (AMPA), presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T059	NS	-	-	-
T072	NS	-	-	-
T096	NS	-	-	-
T126	NS	-	-	-
T139	28	-	10	NO
T147	NS	-	-	-
T161	129,4	-	10	-
T171	124	94	20	NO
T174	NS	-	-	-

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 3	93,80 µg/kg
Standard deviation	n= 3	57,05 µg/kg
Coefficient of variation	n= 3	60,82 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

Test material WH5801, wheat flour

Results of analyses performed on test material WH5801.

WH5801, chlormequat, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T059	324,2	116,7	10	NO
T072	124,82	-	10	NO
T096	NS	-	-	-
T126	NS	-	-	-
T139	120	-	10	NO
T147	134,7	89	10	NO
T161	177	-	10	-
T171	NS	-	-	-
T174	NS	-	-	-

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 5	176,14 µg/kg
Standard deviation	n= 5	85,77 µg/kg
Coefficient of variation	n= 5	48,69 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

Test material WH5801, wheat flour

Results of analyses performed on test material WH5801.

WH5801, mepiquat, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T059	187,35	113	10	NO
T072	88,50	-	10	NO
T096	NS	-	-	-
T126	NS	-	-	-
T139	90	-	10	NO
T147	120,1	89	10	NO
T161	147	-	10	-
T171	NS	-	-	-
T174	NS	-	-	-

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 5	126,59 µg/kg
Standard deviation	n= 5	41,65 µg/kg
Coefficient of variation	n= 5	32,90 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

Proficiency test W5802, result contents

pesticides in red wine;

- **Test material W5802**

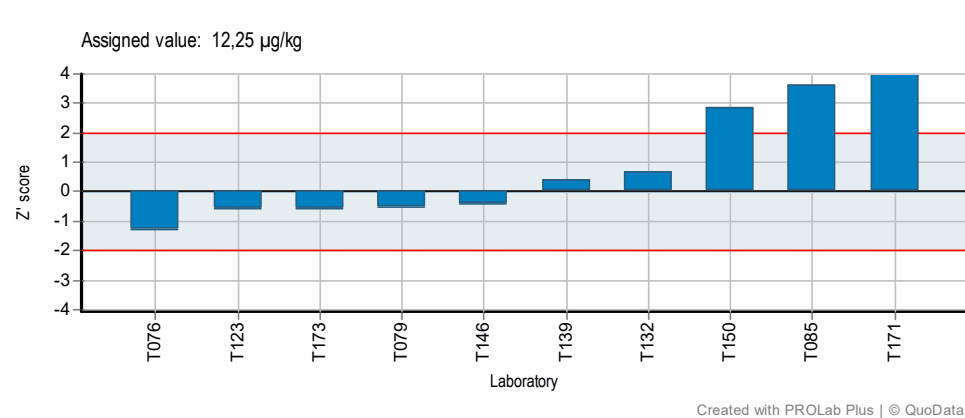
Test material W5802, red wine

W5802, chlorpyrifos-methyl

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	MADe/Median	MADe	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
chlorpyrifos-methyl	10	12,25	3,71	30,29	1,47	No	Horwitz	3,80	4,10	20,40

Figure 9: Z' scores for wine, chlorpyrifos-methyl



Percentage of satisfactory scores 70,00%

Concentration, arithmetic mean	n= 10	18,56 $\mu\text{g/kg}$
Standard deviation	n= 10	15,30 $\mu\text{g/kg}$
Coefficient of variation	n= 10	82,43 %

Test material W5802, red wine

Results of analyses performed on test material W5802.

W5802, chlorpyrifos-methyl

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T076	7	98,00	-1,29	2,00	NO
T079	10,1	61,00	-0,53	10,00	NO
T085	27		3,62	10,00	-
T096	<10			10,00	-
T123	10	10,00	-0,55	10,00	-
T132	15		0,68	10,00	NO
T139	14,0		0,43	10,00	NO
T146	10,5		-0,43	10,00	-
T150	24,0	92,00	2,88	10,00	NO
T171	58	136,00	11,23	5,00	NO
T173	10	72,00	-0,55	10,00	NO

Concentration and DL have the measurement unit of µg/kg.

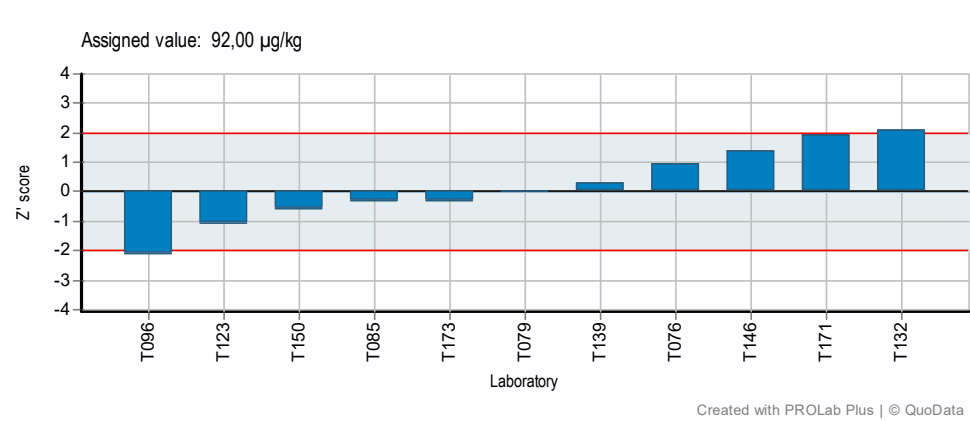
Test material W5802, red wine

W5802, iprodione

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	MADe/Median	MADe	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
iprodione	11	92,00	34,11	37,08	12,86	No	Horwitz	21,08	42,63	141,37

Figure 10: Z' scores for wine, iprodione



Percentage of satisfactory scores 81,82%

Concentration, arithmetic mean	n= 11	97,55 $\mu\text{g/kg}$
Standard deviation	n= 11	31,64 $\mu\text{g/kg}$
Coefficient of variation	n= 11	32,44 %

Test material W5802, red wine

Results of analyses performed on test material W5802.

W5802, iprodione

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T076	115	111,00	0,93	2,00	NO
T079	92,0	85,00	0,00	10,00	NO
T085	85		-0,28	10,00	-
T096	41	73,00	-2,07	10,00	NO
T123	66	101,00	-1,05	10,00	-
T132	144		2,11	10,00	NO
T139	100,0		0,32	10,00	NO
T146	126,5		1,40	10,00	-
T150	78,5	99,00	-0,55	10,00	NO
T171	140	85,00	1,94	5,00	NO
T173	85	96,00	-0,28	10,00	NO

Concentration and DL have the measurement unit of µg/kg.

Test material W5802, red wine

Results of analyses performed on test material W5802.

W5802, lambda-cyhalothrin, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T076	6	99	2	NO
T079	18,4	91	10	NO
T085	NS	-	-	-
T096	NS	-	-	-
T123	<10	-	10	-
T132	>3	-	10	NO
T139	14	-	10	NO
T146	<10	-	10	-
T150	12,6	81	10	NO
T171	19	194	5	NO
T173	<10	-	10	-

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 5	14,00 µg/kg
Standard deviation	n= 5	5,25 µg/kg
Coefficient of variation	n= 5	37,51 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

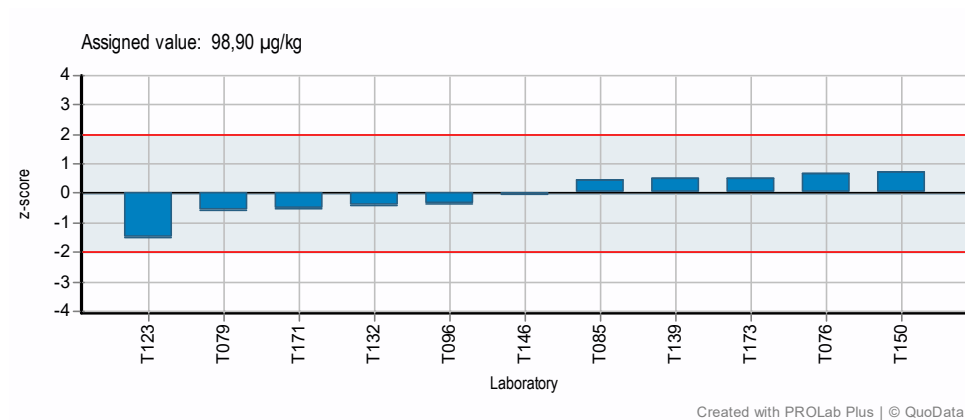
Test material W5802, red wine

W5802, myclobutanil

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{\text{pt}})$	$u < 0,3 \sigma_{\text{pt}}$	Origin σ_{pt}	σ_{pt}	lower	upper
myclobutanil	11	98,90	15,21	15,38	5,73	Yes	Horwitz	22,41	54,08	143,72

Figure 11: z-scores for wine, myclobutanil



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 11	97,98 $\mu\text{g/kg}$
Standard deviation	n= 11	15,33 $\mu\text{g/kg}$
Coefficient of variation	n= 11	15,65 %

Test material W5802, red wine

Results of analyses performed on test material W5802.

W5802, myclobutanil

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T076	114	93,00	0,67	2,00	NO
T079	85,9	68,00	-0,58	10,00	NO
T085	109		0,45	10,00	-
T096	91	80,00	-0,35	10,00	NO
T123	66	103,00	-1,47	10,00	-
T132	90		-0,40	10,00	NO
T139	110,0		0,50	10,00	NO
T146	98,5		-0,02	10,00	-
T150	115,4	73,00	0,74	10,00	YES
T171	88	60,00	-0,49	5,00	NO
T173	110	102,00	0,50	10,00	NO

Concentration and DL have the measurement unit of µg/kg.

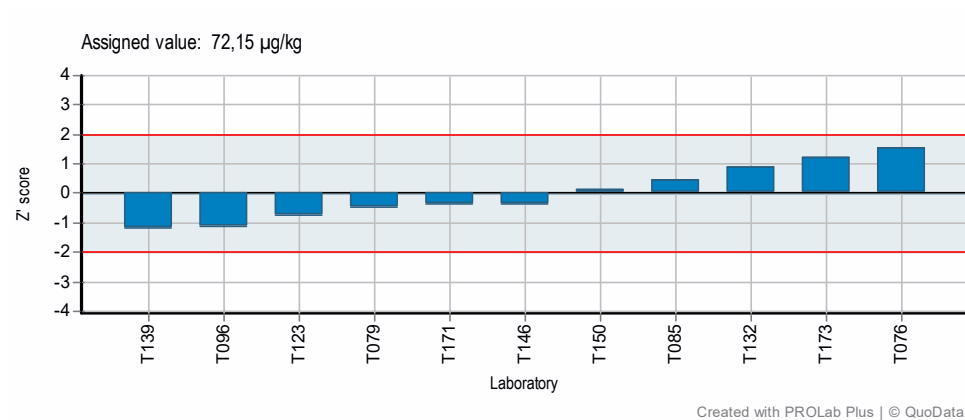
Test material W5802, red wine

W5802, pyrimethanil

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
pyrimethanil	11	72,15	19,74	27,36	7,44	No	Horwitz	17,14	34,77	109,53

Figure 12: Z' scores for wine, pyrimethanil



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 11	72,15 $\mu\text{g/kg}$
Standard deviation	n= 11	17,41 $\mu\text{g/kg}$
Coefficient of variation	n= 11	24,13 %

Test material W5802, red wine

Results of analyses performed on test material W5802.

W5802, pyrimethanil

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T076	101	89,00	1,54	2,00	NO
T079	63,5	68,00	-0,46	10,00	NO
T085	81		0,47	10,00	-
T096	51	67,00	-1,13	10,00	NO
T123	58	107,00	-0,76	10,00	-
T132	89		0,90	10,00	NO
T139	50,0		-1,19	10,00	NO
T146	65,5		-0,36	10,00	-
T150	74,7	81,00	0,14	10,00	NO
T171	65	74,00	-0,38	5,00	NO
T173	95	103,00	1,22	10,00	NO

Concentration and DL have the measurement unit of µg/kg.

Test material W5802, red wine,

Other compounds detected in the test material.

W5802	
Lab. code	Other compounds (µg/kg)
T132	metalaxyl (>3)

Proficiency test H5803, result contents

pesticides and glyphosate in honey;

- **Test material H5803**

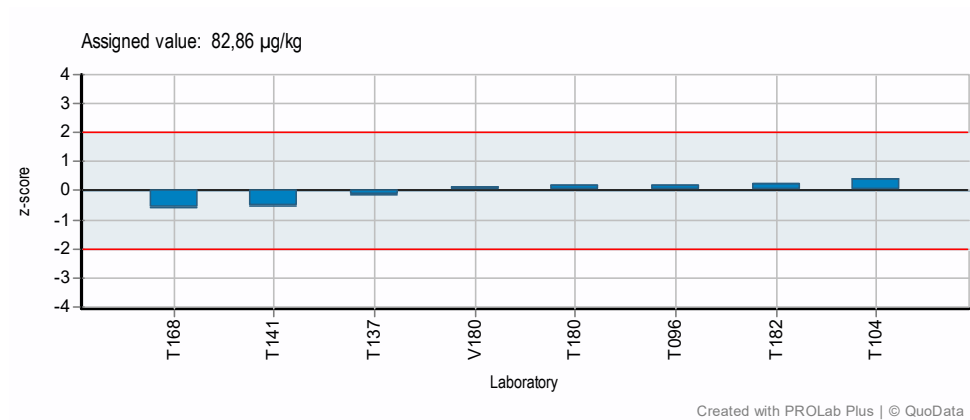
Test material H5803, honey

H5803, coumaphos

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g}/\text{kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
coumaphos	8	82,86	8,05	9,72	3,56	Yes	Horwitz	19,28	44,30	121,42

Figure 13: z-scores for honey, coumaphos



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 8	82,86 $\mu\text{g}/\text{kg}$
Standard deviation	n= 8	7,10 $\mu\text{g}/\text{kg}$
Coefficient of variation	n= 8	8,57 %

Test material H5803, honey

Results of analyses performed on test material H5803.

H5803, coumaphos

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T013	NS				-
T037	NS				-
T094	<10			10,00	-
T096	87	100,00	0,21	10,00	NO
T104	91	94,00	0,42	5,00	NO
T137	80	120,90	-0,15	10,00	NO
T141	73	88,00	-0,51	3,00	NO
T150	NS				-
T168	72		-0,56	10,00	NO
T176	NS				-
T180	86,51		0,19	10,00	YES
T182	88	105,00	0,27	10,00	NO
V180	85,40		0,13	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

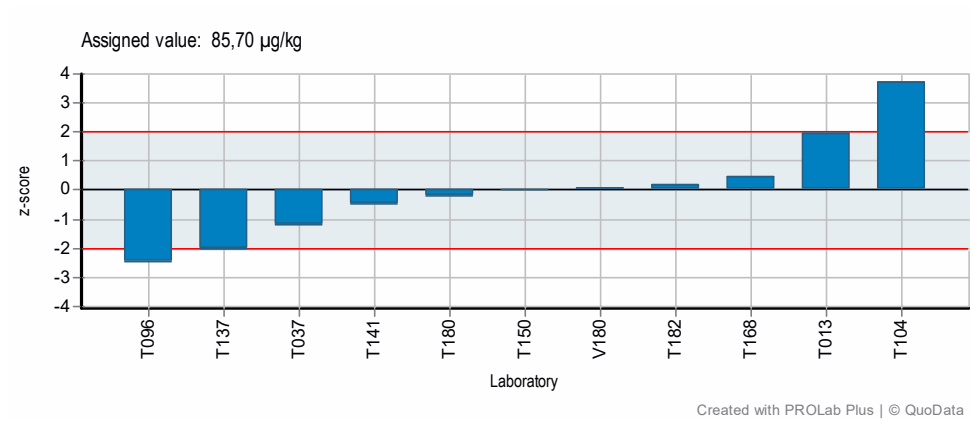
Test material H5803, honey

H5803, fluvalinate (tau)

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	MADe/Median	MADe	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
fluvalinate (tau)	11	85,70	14,39	16,79	5,42	Yes	Horwitz	19,84	46,02	125,38

Figure 14: z-scores for honey, fluvalinate (tau)



Percentage of satisfactory scores 81,82%

Concentration, arithmetic mean	n= 11	85,98 $\mu\text{g/kg}$
Standard deviation	n= 11	34,30 $\mu\text{g/kg}$
Coefficient of variation	n= 11	39,90 %

Test material H5803, honey

Results of analyses performed on test material H5803.

H5803, fluvalinate (tau)

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T013	125	100,00	1,98	5,00	NO
T037	62,4		-1,17	5,00	NO
T094	<10			10,00	-
T096	37	61,00	-2,45	10,00	NO
T104	160	100,00	3,74	5,00	NO
T137	46	125,60	-2,00	10,00	NO
T141	76	80,00	-0,49	3,00	NO
T150	85,7	95,50	0,00	10,00	NO
T168	95		0,47	10,00	NO
T176	NS				-
T180	81,71		-0,20	10,00	YES
T182	89	90,00	0,17	10,00	NO
V180	87,97		0,11	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

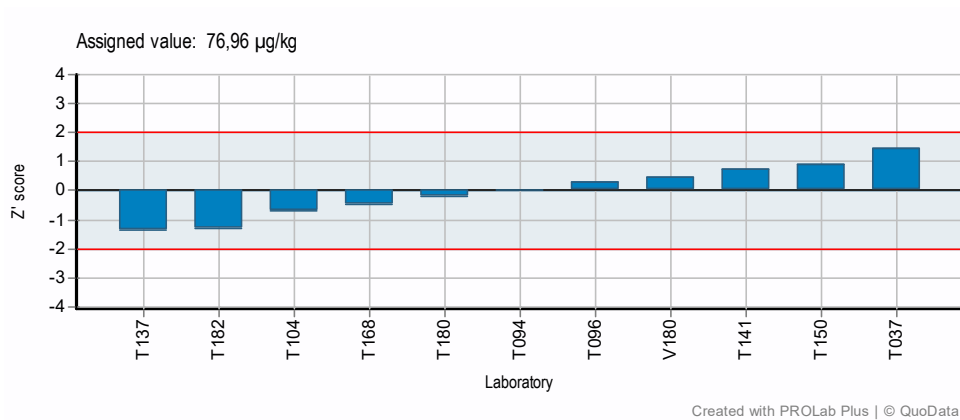
Test material H5803, honey

H5803, imidacloprid

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
imidacloprid	11	76,96	19,81	25,74	7,47	No	Horwitz	18,11	37,78	116,14

Figure 15: Z' scores for honey, imidacloprid



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 11	76,96 $\mu\text{g/kg}$
Standard deviation	n= 11	17,47 $\mu\text{g/kg}$
Coefficient of variation	n= 11	22,70 %

Test material H5803, honey

Results of analyses performed on test material H5803.

H5803, imidacloprid

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T013	NS				-
T037	105,6		1,46	5,00	NO
T094	78,00	98,00	0,05	10,00	NO
T096	83	100,00	0,31	10,00	NO
T104	63	98,00	-0,71	25,00	NO
T137	51	86,30	-1,33	10,00	NO
T141	92	118,00	0,77	10,00	NO
T150	94,3	111,00	0,89	10,00	NO
T168	68		-0,46	10,00	NO
T176	NS				-
T180	73,57		-0,17	10,00	YES
T182	52	105,00	-1,27	10,00	NO
V180	86,08		0,47	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

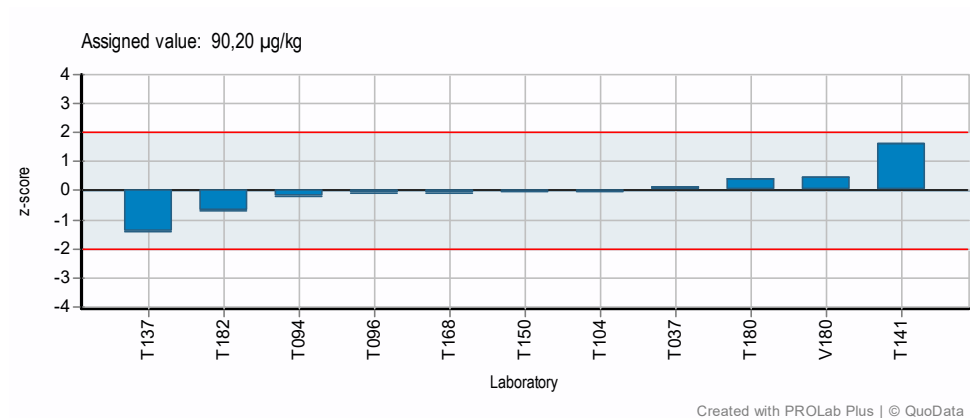
Test material H5803, honey

H5803, thiacloprid

Assigned value and target standard deviations.

Analyte	Assigned value		µg/kg		Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
thiacloprid	11	90,20	10,97	12,16	4,13	Yes	Horwitz	20,72	48,76	131,64

Figure 16: z-scores for honey, thiacloprid



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 11	90,62 µg/kg
Standard deviation	n= 11	15,45 µg/kg
Coefficient of variation	n= 11	17,05 %

Test material H5803, honey

Results of analyses performed on test material H5803.

H5803, thiacloprid

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T013	NS				-
T037	92,9		0,13	5,00	NO
T094	86,30	110,00	-0,19	10,00	NO
T096	89	100,00	-0,06	10,00	NO
T104	90	98,00	-0,01	25,00	NO
T137	61	96,40	-1,41	10,00	NO
T141	124	89,00	1,63	10,00	NO
T150	89,9	90,00	-0,01	10,00	NO
T168	89		-0,06	10,00	NO
T176	NS				-
T180	99,24		0,44	10,00	YES
T182	76	100,00	-0,69	10,00	NO
V180	99,44		0,45	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

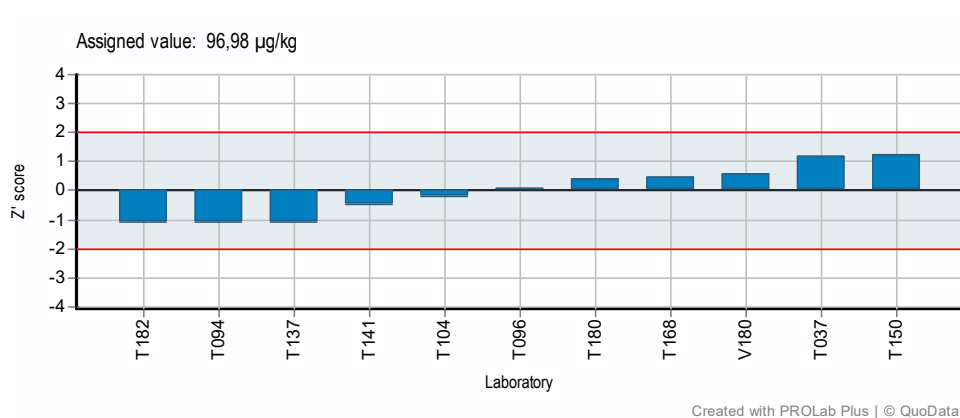
Test material H5803, honey

H5803, thiamethoxam

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
thiamethoxam	11	96,98	23,01	23,73	8,67	No	Horwitz	22,04	49,61	144,35

Figure 17: Z' scores for honey, thiamethoxam



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 11	96,98 $\mu\text{g/kg}$
Standard deviation	n= 11	20,29 $\mu\text{g/kg}$
Coefficient of variation	n= 11	20,93 %

Test material H5803, honey

Results of analyses performed on test material H5803.

H5803, thiamethoxam

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T013	NS				-
T037	124,8		1,17	5,00	NO
T094	71,30	102,00	-1,08	10,00	NO
T096	99	100,00	0,09	10,00	NO
T104	92	95,00	-0,21	25,00	NO
T137	72	62,30	-1,05	10,00	NO
T141	86	93,00	-0,46	10,00	NO
T150	126,2	81,50	1,23	10,00	NO
T168	108		0,47	10,00	NO
T176	NS				-
T180	106,15		0,39	10,00	YES
T182	71	92,00	-1,10	10,00	NO
V180	110,31		0,56	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

Test material H5803, honey

Results of analyses performed on test material H5803.

H5803, glyphosate, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T013	NS	-	-	-
T037	NS	-	-	-
T094	59,56	106	10	NO
T096	NS	-	-	-
T104	NS	-	-	-
T137	31	94,1	10	NO
T141	NS	-	-	-
T150	73,3	-	10	NO
T168	62	-	10	NO
T176	54,69	-	0,40	-
T180	NS	-	-	-
T182	NS	-	-	-
V180	NS	-	-	-

Concentration and DL have the measurement unit of $\mu\text{g}/\text{kg}$.

Concentration, arithmetic mean	n= 5	56,11 $\mu\text{g}/\text{kg}$
Standard deviation	n= 5	15,61 $\mu\text{g}/\text{kg}$
Coefficient of variation	n= 5	27,82 %

The value is not assigned when $p < 8$, where "p" is the number of data after invalid results rejection.

Test material H5803, honey,

Other compounds detected in the test material.

H5803	
Lab. code	Other compounds (µg/kg)
T094	acetamiprid (>2,60)

Proficiency test M5804, result contents

pesticides in animal fat;

- **Test material M5804**

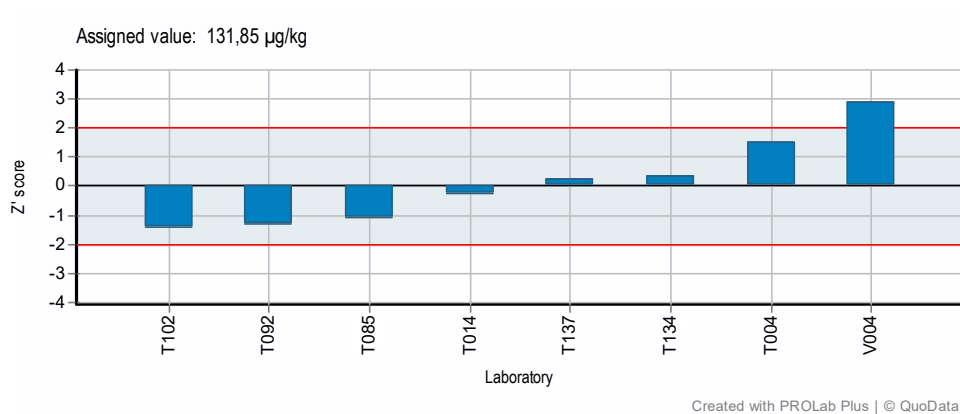
Test material M5804, animal fat

M5804, DDD-pp

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	MADe/Median	MADe	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
DDD-pp	8	131,85	83,57	63,38	36,93	No	Horwitz	28,61	38,41	225,29

Figure 18: Z' scores for animal fat, DDD-pp



Percentage of satisfactory scores 87,50%

Concentration, arithmetic mean	n= 8	137,19 µg/kg
Standard deviation	n= 8	69,99 µg/kg
Coefficient of variation	n= 8	51,02 %

Test material M5804, animal fat

Results of analyses performed on test material M5804.

M5804, DDD-pp

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T004	202,63	162,10	1,52	5,05	NO
T013	NS				-
T014	120	100,00	-0,25	10,00	YES
T085	81,00		-1,09	10,00	-
T092	70		-1,32	5,00	-
T102	65	103,00	-1,43	2,00	YES
T121	NS				-
T134	149,00	108,00	0,37	5,00	NO
T137	143,7	90,80	0,25	5,00	NO
T146	<92,41			92,41	-
V004	266,22	163,50	2,88	5,05	NO

Concentration and DL have the measurement unit of µg/kg.

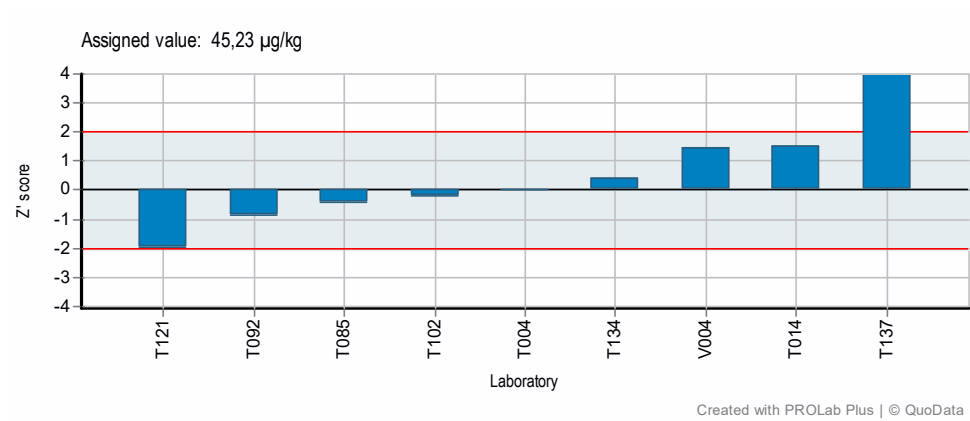
Test material M5804, animal fat

M5804, endosulfan I (alpha)

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g}/\text{kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	MADe/Median	MADe	CV (%)	Standard uncertainty $u(X_{\text{pt}})$	$u < 0,3 \sigma_{\text{pt}}$	Origin σ_{pt}	σ_{pt}	lower	upper
endosulfan I (alpha)	9	45,23	16,65	36,81	6,94	No	Horwitz	11,53	18,32	72,14

Figure 19: Z' scores for animal fat, endosulfan I (alpha)



Percentage of satisfactory scores 88,89%

Concentration, arithmetic mean	n= 9	64,08 $\mu\text{g}/\text{kg}$
Standard deviation	n= 9	58,03 $\mu\text{g}/\text{kg}$
Coefficient of variation	n= 9	90,55 %

Test material M5804, animal fat

Results of analyses performed on test material M5804.

M5804, endosulfan I (alpha)

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T004	45,23	112,10	0,00	4,28	NO
T013	NS				-
T014	66	100,00	1,54	10,00	YES
T085	40,00		-0,39	10,00	-
T092	34		-0,83	5,00	-
T102	43	101,00	-0,17	2,00	YES
T121	19		-1,95	10,00	-
T134	51,00	109,00	0,43	5,00	-
T137	213,9	96,20	12,53	5,00	NO
T146	<61,19			61,19	-
V004	64,62	119,10	1,44	4,28	NO

Concentration and DL have the measurement unit of µg/kg.

Test material M5804, animal fat

M5804, aldrin

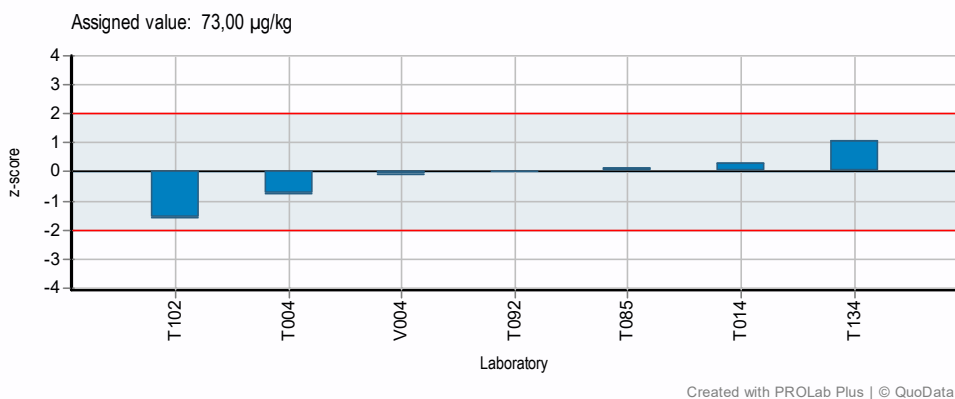
µg/kg	Arithmetic mean	Algorithm A	Median	Hampel
Mean	70,88	70,99	73,00	71,63
Standard deviation	14,46	16,15	7,42	12,69
coefficient of variation %	20,40	22,75	10,16	17,72

Although for measurand $p=7$, where “p” is the number of data, as the CV is lower than Horwitz CV the PTp has decided to elaborate an assigned value using an appropriate statistical elaboration. Furthermore, all estimators checked agree on the result of the assigned value.

Assigned value and target standard deviations.

Analyte	Assigned value		µg/kg		Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	MADe/Median	MADe	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
aldrin	7	73,00	7,42	10,16	3,51	Yes	Horwitz	17,32	38,36	107,64

Figure 20: z-scores for animal fat, aldrin



Percentage of satisfactory scores 100,00%

Test material M5804, animal fat

Results of analyses performed on test material M5804.

M5804, aldrin

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T004	60,11	115,80	-0,74	5,05	NO
T013	NS				-
T014	78	100,00	0,29	10,00	YES
T085	75,00		0,12	10,00	-
T092	73		0,00	5,00	-
T102	46	77,00	-1,56	2,00	YES
T121	NS				-
T134	92,00	113,00	1,10	5,00	NO
T137	<5			5,00	-
T146	<67,57			67,57	-
V004	72,04	118,10	-0,06	5,05	NO

Concentration and DL have the measurement unit of µg/kg.

Test material M5804, animal fat

Results of analyses performed on test material M5804.

M5804, cyfluthrin, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T004	NS	-	-	-
T013	94	100	5,0	NO
T014	72	100	10	YES
T085	70,00	-	10,00	-
T092	65	-	5	-
T102	<2	-	2	-
T121	27	-	10	-
T134	NS	-	-	-
T137	150,6	95,9	20	NO
T146	<151,51	-	10	-
V004	NS	-	-	-

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 6	79,77 µg/kg
Standard deviation	n= 6	40,93 µg/kg
Coefficient of variation	n= 6	51,32 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

Test material M5804, animal fat

Results of analyses performed on test material M5804.

M5804, HCH-A, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T004	74,69	126,1	10	NO
T013	NS	-	-	-
T014	63	100	10	YES
T085	64,00	-	10,00	-
T092	<5	-	5	-
T102	>35	101	2	YES
T121	36	-	10	-
T134	70,00	106	5,00	-
T137	365,5	88,5	5	NO
T146	<65,36	-	10	-
V004	60,26	113,1	10	NO

Concentration and DL have the measurement unit of µg/kg.

Concentration, arithmetic mean	n= 7	104,78 µg/kg
Standard deviation	n= 7	115,62 µg/kg
Coefficient of variation	n= 7	110,35 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

Test material M5804, animal fat

Other compounds detected in the test material.

M5804	
Lab. code	Other compounds (µg/kg)
T092	HCB (hexachlorobenzene) (36)
T121	DDT-op (295) DDT-pp (293)

Proficiency test LE5805P, result contents

pesticides (excluding glyphosate) in dried lentils;

- **Test material LE5805P**

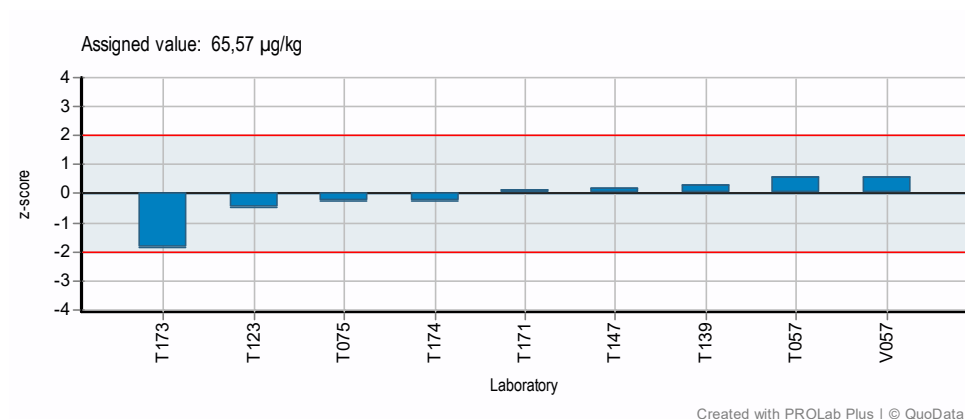
Test material LE5805P, dried lentils

LE5805P, chlorfenvinphos

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g}/\text{kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
chlorfenvinphos	9	65,57	8,74	13,33	3,64	Yes	Horwitz	15,81	33,95	97,19

Figure 21: z-scores for lentils, chlorfenvinphos



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 9	63,74 $\mu\text{g}/\text{kg}$
Standard deviation	n= 9	11,98 $\mu\text{g}/\text{kg}$
Coefficient of variation	n= 9	18,79 %

Test material LE5805P, dried lentils

Results of analyses performed on test material LE5805P.

LE5805P, chlorfenvinphos

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	z-score	QL	Has the result been corrected by recovery?
T009	NS				-
T057	75	102,00	0,60	10,00	YES
T075	61,50	73,47	-0,26	10,00	NO
T089	NS				-
T123	58	109,00	-0,48	10,00	-
T136	NS				-
T139	70		0,28	10,00	-
T147	68,7	85,00	0,20	10,00	NO
T171	68	84,00	0,15	5,00	NO
T173	36	95,00	-1,87	10,00	NO
T174	61,5	80,00	-0,26	10,00	NO
V057	75	102,00	0,60	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

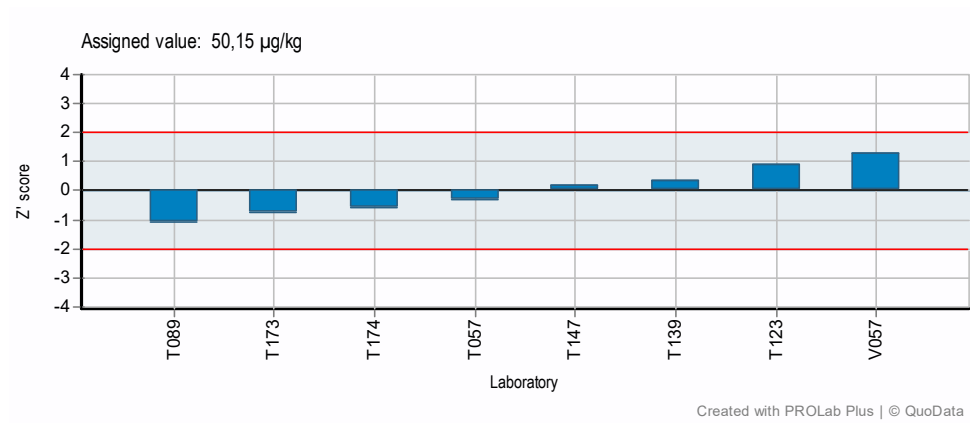
Test material LE5805P, dried lentils

LE5805P, endrin

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
endrin	8	50,15	13,03	25,98	5,76	No	Horwitz	12,59	22,47	77,84

Figure 22: Z' scores for lentils, endrin



Percentage of satisfactory scores 100,00%

Concentration, arithmetic mean	n= 8	50,15 µg/kg
Standard deviation	n= 8	11,49 µg/kg
Coefficient of variation	n= 8	22,91 %

Test material LE5805P, dried lentils

Results of analyses performed on test material LE5805P.

LE5805P, endrin

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T009	<10			10,00	-
T057	45,6	102,00	-0,33	10,00	YES
T075	NS				-
T089	35		-1,09	10,00	NO
T123	63	107,00	0,93	10,00	-
T136	NS				-
T139	55		0,35	10,00	-
T147	52,9	107,00	0,20	10,00	NO
T171	NS				-
T173	40	97,00	-0,73	10,00	NO
T174	42	80,00	-0,59	10,00	NO
V057	67,71	102,00	1,27	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

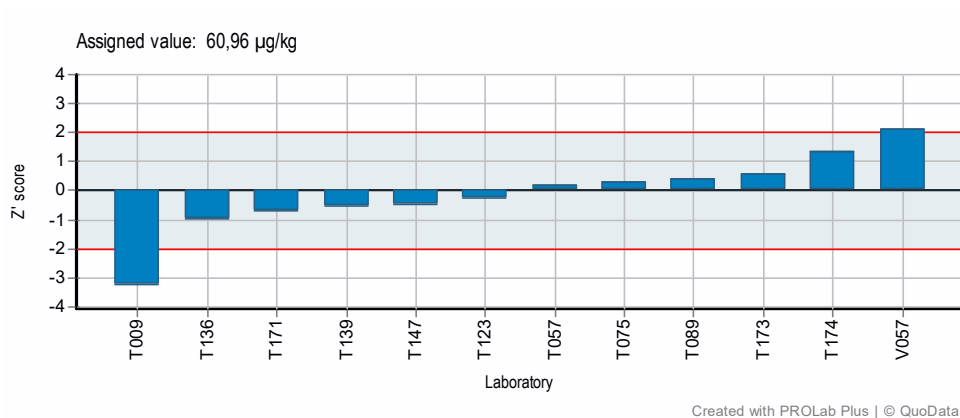
Test material LE5805P, dried lentils

LE5805P, malathion

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
malathion	12	60,96	16,91	27,74	6,10	No	Horwitz	14,86	28,84	93,08

Figure 23: Z' scores for lentils, malathion



Percentage of satisfactory scores 83,33%

Concentration, arithmetic mean	n= 12	59,46 µg/kg
Standard deviation	n= 12	21,32 µg/kg
Coefficient of variation	n= 12	35,86 %

Test material LE5805P, dried lentils

Results of analyses performed on test material LE5805P.

LE5805P, malathion

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T009	8,9		-3,24	10,00	-
T057	64	106,00	0,19	10,00	YES
T075	66,00	82,61	0,31	10,00	NO
T089	68		0,44	10,00	NO
T123	57	91,00	-0,25	10,00	-
T136	45	88,00	-0,99	10,00	NO
T139	53		-0,50	10,00	-
T147	53,6	83,00	-0,46	10,00	NO
T171	50	84,00	-0,68	5,00	NO
T173	70	103,00	0,56	10,00	NO
T174	83	80,00	1,37	10,00	NO
V057	95	117,00	2,12	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

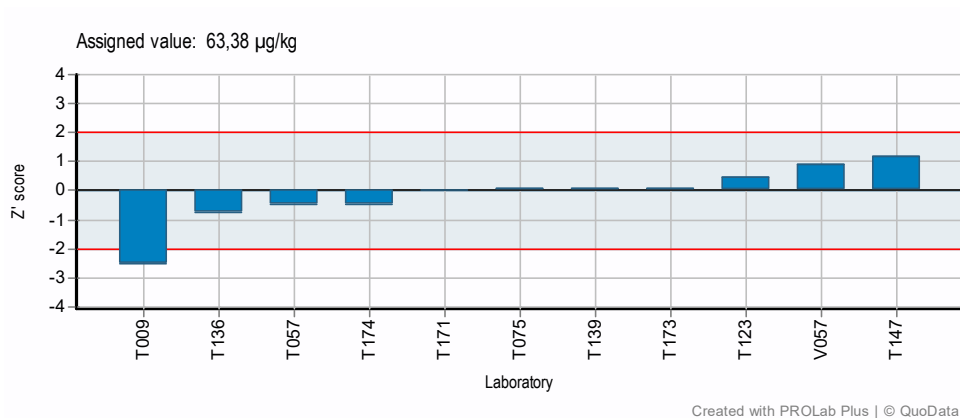
Test material LE5805P, dried lentils

LE5805P, pirimicarb

Assigned value and target standard deviations.

Analyte	Assigned value $\mu\text{g/kg}$				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(x_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
pirimicarb	11	63,38	12,78	20,16	4,82	No	Horwitz	15,36	31,19	95,56

Figure 24: Z' scores for lentils, pirimicarb



Percentage of satisfactory scores 90,91%

Concentration, arithmetic mean	n= 11	61,43 $\mu\text{g/kg}$
Standard deviation	n= 11	15,85 $\mu\text{g/kg}$
Coefficient of variation	n= 11	25,80 %

Test material LE5805P, dried lentils

Results of analyses performed on test material LE5805P.

LE5805P, pirimicarb

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T009	22,75		-2,52	10,00	-
T057	56	94,00	-0,46	10,00	YES
T075	64,50	71,83	0,07	10,00	NO
T089	NS				-
T123	71	87,00	0,47	10,00	-
T136	51	95,00	-0,77	10,00	NO
T139	65		0,10	10,00	-
T147	82,3	97,00	1,18	10,00	NO
T171	64	91,00	0,04	5,00	NO
T173	65	100,00	0,10	10,00	NO
T174	56	80,00	-0,46	10,00	NO
V057	78,13	104,00	0,92	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

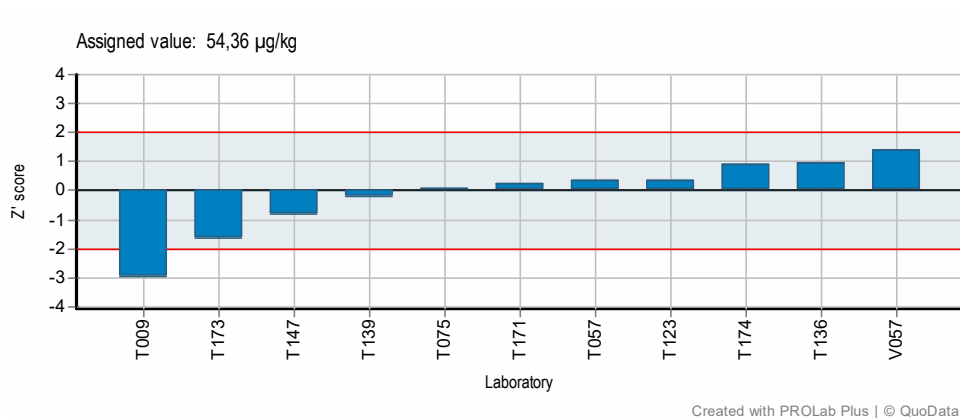
Test material LE5805P, dried lentils

LE5805P, profenofos

Assigned value and target standard deviations.

Analyte	Assigned value				Standard deviation for proficiency assessment				Satisfactory range	
	Data points, n	Algorithm A ISO5725-5 (Alg.AS)	Standard deviation	CV (%)	Standard uncertainty $u(X_{pt})$	$u < 0,3 \sigma_{pt}$	Origin σ_{pt}	σ_{pt}	lower	upper
profenofos	11	54,36	17,29	31,81	6,52	No	Horwitz	13,48	24,42	84,30

Figure 25: Z' scores for lentils, profenofos



Percentage of satisfactory scores 90,91%

Concentration, arithmetic mean	n= 11	52,73 µg/kg
Standard deviation	n= 11	18,83 µg/kg
Coefficient of variation	n= 11	35,71 %

Test material LE5805P, dried lentils

Results of analyses performed on test material LE5805P.

LE5805P, profenofos

Summary results of measured values					
Lab	Concentration	Recovery rate [%]	Z' score	QL	Has the result been corrected by recovery?
T009	10,5		-2,93	10,00	-
T057	60	104,00	0,38	10,00	YES
T075	56,00	75,07	0,11	10,00	NO
T089	NS				-
T123	60	106,00	0,38	10,00	-
T136	69	83,00	0,98	10,00	NO
T139	51		-0,22	10,00	-
T147	42,5	83,00	-0,79	10,00	NO
T171	58	91,00	0,24	5,00	NO
T173	30	95,00	-1,63	10,00	NO
T174	68	80,00	0,91	10,00	NO
V057	75	98,00	1,38	10,00	YES

Concentration and DL have the measurement unit of µg/kg.

Proficiency test LE5805G, result contents

glyphosate in dried lentils;

- **Test material LE5805G**

Test material LE5805G, dried lentils

Results of analyses performed on test material LE5805G.

LE5805G, glyphosate, presence

Summary results of measured values				
Lab	Concentration	Recovery rate [%]	QL	Has the result been corrected by recovery?
T075	75,50	66,95	50,00	NO
T139	30	-	10	NO
T147	143,1	62	50	NO
T171	94	108	20	NO

Concentration and DL have the measurement unit of $\mu\text{g}/\text{kg}$.

Concentration, arithmetic mean	n= 4	85,65 $\mu\text{g}/\text{kg}$
Standard deviation	n= 4	46,80 $\mu\text{g}/\text{kg}$
Coefficient of variation	n= 4	54,64 %

The value is not assigned because $p < 8$, where 'p' is the number of data after invalid results rejection, and because the submitted results have a high uncertainty.

ANNEX

ANNEX

ANALYTICAL METHODS USED

PESTICIDES (EXCLUDING GLYPHOSATE AND AMPA) IN LETTUCE, VF5800P

Analytical methods used by participants:

pesticides (excluding glyphosate and AMPA)	
Is the method already accredited?	Laboratory Code
NO	T122-T136-T183
YES	T009-T018-T057-T066-T069-T080-T085-T110-T128-T146-T155-T187-T194-V057

pesticides (excluding glyphosate and AMPA)	
Analytical methods used:	Laboratory Code
GC-ECD, GC-NPD, HPLC-FL	T110
GC-LC MS/MS	T187
GC-MSMS / LC-MSMS	T069
GC/MS/MS	T066-T122-T155
GCMS	T009
HPLC MS/MS - GC MS/MS	T080
HPLC/MS/MS	T009-T057-T085-T136-T146-T183-T194-V057
LC/MSMS - GC/MSMS	T128
UPLC-MS-MS / GC-Ms-MS	T018

pesticides (excluding glyphosate and AMPA)	
Is the analytical method a routine one?	Laboratory Code
NO	T183
YES	T009-T018-T057-T066-T069-T080-T085-T110-T122-T128-T136-T146-T155-T187-T194-V057

pesticides (excluding glyphosate and AMPA)	
Do you participate regularly to pesticides proficiency test (PT)?	Laboratory Code
Yes: more than once per year	T009-T080-T085-T128-T146-T155-T187
Yes: one time per year	T018-T057-T066-T069-T110-T136-T183-T194-V057

Quality:

pesticides (excluding glyphosate and AMPA)	
Quality control implemented	Laboratory Code
Control chart	T009
Control chart with Certified Reference Material (CRM)	T085
Duplicate analyses	T122-T183-T194
Regular participation to proficiency test (PT)	T018-T069
Spiked sample	T057-T080-T110-T136-T146-T155-T187-V057
standard addition method	T066

Number of replicates (1 replicate = 1 extraction):

pesticides (excluding glyphosate and AMPA)	
Number of extraction	Laboratory Code
1	T057-T069-T080-T085-T110-T136-T194-V057
2	T009-T018-T066-T122-T155-T187
4	T183

pesticides (excluding glyphosate and AMPA)	
Source of standards	Laboratory Code
Accustandard	T057-V057
Agilent	T183
LGC	T066
Lab instruments	T187
Restek	T009
Several	T080
Sigma-Aldrich	T069-T110-T122-T136
dr. Ehrenstorfer	T018

pesticides (excluding glyphosate and AMPA)	
Percentage of recovery measured in the same analytical run than test material?	Laboratory Code
NO	T085-T136-T187
YES	T018-T057-T069-T110-T155-T183-T194-V057

pesticides (excluding glyphosate and AMPA)	
Blank sample used for spiking	Laboratory Code
Blank sample supplied by PT provider	T057-T069-T155-V057
Lechuga	T080
VF 5800B	T187
basilico	T194
lettuce	T183
organic lettuce sample	T110

pesticides (excluding glyphosate and AMPA)	
Reference:	Laboratory Code
15662:2018	T183
AOAC Official Method 2007.01	T069
BS EN15662	T066
Internal method	T018-T057-T080-T110-T136-T155-T187-T194-V057

pesticides (excluding glyphosate and AMPA)	
Amount of test sample for the extraction, after reconstitution (g):	Laboratory Code
5	T066
10	T057-T069-T080-T085-T110-T136-T155-T183-T187-T194-V057
15	T018

pesticides (excluding glyphosate and AMPA)	
Extraction solvent	Laboratory Code
acetonitrile	T057-T066-T069-T080-T085-T110-T136-T155-T183-T187-T194-V057
acetonitrile: acetic acid	T018

pesticides (excluding glyphosate and AMPA)	
Clean up	Laboratory Code
QuEChERS	T018-T066-T069-T085-T110-T136-T155-T183-T187-T194
SPE	T057-T080-V057

pesticides (excluding glyphosate and AMPA)	
pH adjusted	Laboratory Code
NO	T018-T057-T080-T085-T110-T136-T183-T187-T194-V057
YES	T155

GLYPHOSATE + AMPA IN LETTUCE, VF5800G

Analytical methods used by participants:

glyphosate + AMPA	
Is the method already accredited?	Laboratory Code
NO	T076-T183
YES	T018-T027-T062-T080-T155

glyphosate + AMPA	
Analytical methods used:	Laboratory Code
HPLC/MS/MS	T018-T027-T062-T076-T080-T155-T183

glyphosate + AMPA	
Is the analytical method a routine one?	Laboratory Code
NO	T076
YES	T018-T027-T062-T080-T155-T183

glyphosate + AMPA	
Do you participate regularly to pesticides proficiency test (PT)?	Laboratory Code
Yes: more than once per year	T076-T155
Yes: one time per year	T018-T027-T062-T080-T183

Quality:

glyphosate + AMPA	
Quality control implemented	Laboratory Code
Duplicate analyses	T183
Regular participation to proficiency test (PT)	T027
Spiked sample	T018-T062-T076-T080-T155

Number of replicates (1 replicate = 1 extraction):

glyphosate + AMPA	
Number of extraction	Laboratory Code
1	T062-T080
2	T018-T076-T155
3	T183
5	T027

glyphosate + AMPA	
Source of standards	Laboratory Code
HPC	T080
Lab Instrument	T027
agilent	T183
dr. Ehrenstorfer	T018-T062-T155

glyphosate + AMPA	
Percentage of recovery measured in the same analytical run than test material?	Laboratory Code
NO	T080
YES	T018-T027-T062-T155-T183

glyphosate + AMPA	
Blank sample used for spiking	Laboratory Code
Blank sample supplied by PT provider lettuce	T155 T018-T027-T062-T076-T080

glyphosate + AMPA	
Reference:	Laboratory Code
CVUA EU RL-SRM QuPpe-PO Vers 12.2 met 11 2023	T027
Internal method quppe	T018-T062-T076-T080-T155 T183

glyphosate + AMPA	
Amount of test sample for the extraction, after reconstitution (g):	Laboratory Code
2	T076
5	T027-T062
10	T018-T080-T155-T183

glyphosate + AMPA	
Extraction solvent	Laboratory Code
METANOL	T076
METHANOL	T062
MeOH acidificato	T027
Metanol 1% AF	T080
Methanol	T183
acetonitrile	T155
methanol formic acid 1%	T018

glyphosate + AMPA	
Clean up	Laboratory Code
C18	T062
QuEChERS	T155
none	T018

glyphosate + AMPA	
pH adjusted	Laboratory Code
NO	T018-T062-T080
YES	T027-T155-T183

PESTICIDES AND GLYPHOSATE IN WHEAT FLOUR, WH5801

Analytical methods used by participants:

pesticides and glyphosate	
Is the method already accredited?	Laboratory Code
NO	T126-T171
YES	T059-T072-T096-T139-T147-T161-T174

pesticides and glyphosate	
Analytical methods used:	Laboratory Code
HPLC/MS	T072-T139
HPLC/MS/MS	T059-T126-T147-T161-T171-T174
lc-hrms	T096

pesticides and glyphosate	
Is the analytical method a routine one?	Laboratory Code
NO	T171-T174
YES	T072-T096-T126-T139-T147

pesticides and glyphosate	
Do you participate regularly to pesticides proficiency test (PT)?	Laboratory Code
Yes: more than once per year	T072
Yes: one time per year	T096-T126-T139-T147-T171-T174

Quality:

pesticides and glyphosate	
Quality control implemented	Laboratory Code
Duplicate analyses	T096
Regular participation to proficiency test (PT)	T171-T174
Spiked sample	T059-T147

Number of replicates (1 replicate = 1 extraction):

pesticides and glyphosate	
Number of extraction	Laboratory Code
1	T059-T147
2	T096-T171-T174

pesticides and glyphosate	
Source of standards	Laboratory Code
CPA CHEM	T147
LGC & HPC	T059
Labochem	T096
dr. Ehrenstorfer	T171-T174

pesticides and glyphosate	
Percentage of recovery measured in the same analytical run than test material?	Laboratory Code
YES	T059-T096-T147-T171-T174

pesticides and glyphosate	
Blank sample used for spiking	Laboratory Code
Lentils	T147
wheat flour	T171

pesticides and glyphosate	
Reference:	Laboratory Code
Internal method	T059-T147
QuPPE PO Met 1.6 2024	T174
QuPPE	T171

pesticides and glyphosate	
Amount of test sample for the extraction, after reconstitution (g):	Laboratory Code
5	T059-T096-T147-T171-T174

pesticides and glyphosate	
Extraction solvent	Laboratory Code
Metanolo	T096
Methanol	T147
acetonitrile	T174
water/methanol 50/50 v/v	T171

pesticides and glyphosate	
Clean up	Laboratory Code
QuEChERS	T059-T174

pesticides and glyphosate	
pH adjusted	Laboratory Code
NO	T059-T147-T174

PESTICIDES IN RED WINE, W5802

Analytical methods used by participants:

pesticides	
Is the method already accredited?	Laboratory Code
NO	T076-T085
YES	T079-T096-T123-T132-T139-T146-T150-T171-T173

pesticides	
Analytical methods used:	Laboratory Code
GC/MS	T085
GC/MS/MS	T079-T096-T123-T173
HPLC/MS	T139-T150
HPLC/MS/MS	T076-T096-T132-T146-T173
LC-MS/MS and GC-MS/MS	T171

pesticides	
Is the analytical method a routine one?	Laboratory Code
YES	T076-T079-T085-T096-T123-T132-T139-T146-T150-T171-T173

pesticides	
Do you participate regularly to pesticides proficiency test (PT)?	Laboratory Code
No: not regularly	T096
Yes: more than once per year	T079-T132-T146-T150-T171-T173
Yes: one time per year	T085-T139

Quality:

pesticides	
Quality control implemented	Laboratory Code
Blank sample	T079
Control chart with Certified Reference Material (CRM)	T139
Control chart with Reference Material (RM)	T085
Regular participation to proficiency test (PT)	T173
Spiked sample	T076-T096-T123-T132-T146-T150-T171

Number of replicates (1 replicate = 1 extraction):

pesticides	
Number of extraction	Laboratory Code
1	T076-T085-T150-T173
2	T123-T132-T171
3	T079-T096

pesticides	
Source of standards	Laboratory Code
LGC	T171
Restek	T096
dr. Ehrenstorfer	T079-T085-T123-T150-T173

pesticides	
Percentage of recovery measured in the same analytical run than test material?	Laboratory Code
YES	T076-T079-T096-T123-T132-T150-T171-T173

pesticides	
Blank sample used for spiking	Laboratory Code
Blank sample supplied by PT provider	T079-T085-T096-T150
red wine bio	T171
wine	T076-T132

pesticides	
Reference:	Laboratory Code
Internal method	T076-T079-T085-T123-T132-T150-T173
UNI EN 15662	T096-T171

pesticides	
Amount of test sample for the extraction, after reconstitution (g):	Laboratory Code
5	T085
10	T076-T079-T096-T123-T132-T150-T171-T173

pesticides	
Extraction solvent	Laboratory Code
Ethyl Acetate acetonitrile	T173 T076-T079-T096-T123-T132-T150-T171-T173
pesticides	
Clean up	Laboratory Code
QuEChERS	T076-T079-T096-T123-T132-T150-T171
pesticides	
pH adjusted	Laboratory Code
NO YES	T079-T123-T132-T150-T171 T096-T173

PESTICIDES AND GLYPHOSATE IN HONEY, H5803

Analytical methods used by participants:

pesticides and glyphosate	
Is the method already accredited?	Laboratory Code
NO YES	T037-T094-T141-T150-T180-V180 T013-T096-T104-T137-T168-T176-T182

pesticides and glyphosate	
Analytical methods used:	Laboratory Code
GC-MS/MS+-LC-Orbitrap	T141
GC/MS/MS	T096-T137
HPLC/MS	T150
HPLC/MS/MS	T037-T094-T096-T176
HPLC/MS/MS and GC/MS/MS	T182
LC MSMS GC MSMS	T104
LC/MSMS e GC/MSMS	T168
LCMSMS/ICMSMS	T137
Lc-MS/MS + GC-MS/MS	T180-V180
UHPLCMS/MS	T013

pesticides and glyphosate	
Is the analytical method a routine one?	Laboratory Code
YES	T013-T037-T094-T096-T104-T137-T141-T150-T168-T176-T180-T182-V180

pesticides and glyphosate	
Do you participate regularly to pesticides proficiency test (PT)?	Laboratory Code
No: not regularly	T094
Yes: more than once per year	T137-T141-T150-T168-T176-T182
Yes: one time per year	T013-T037-T096-T104-T180-V180

Quality:

pesticides and glyphosate	
Quality control implemented	Laboratory Code
Blank sample + control chart with RM + Regular participation to PT + Duplicate analyses	T141
Control chart	T180-V180
Duplicate analyses	T013
Spiked sample	T037-T094-T096-T104-T137-T150-T176-T182

Number of replicates (1 replicate = 1 extraction):

pesticides and glyphosate	
Number of extraction	Laboratory Code
1	T037-T150-T176
2	T013-T094-T137-T141
3	T096
4	T104-T180-T182-V180

pesticides and glyphosate	
Source of standards	Laboratory Code
CPA Chem	T182
LGC	T104-T137-T141
LGC, Dr. Ehrenstorfer, Sigma Aldrich	T180-V180
Restek	T094-T096
SPEX	T037
Sigma-Aldrich	T013
dr. Ehrenstorfer	T150-T176

pesticides and glyphosate	
Percentage of recovery measured in the same analytical run than test material?	Laboratory Code
NO	T037-T176
YES	T013-T094-T096-T137-T141-T150-T180-T182-V180

pesticides and glyphosate	
Blank sample used for spiking	Laboratory Code
Blank Honey	T013
Blank sample supplied by PT provider	T096-T150-T180-V180
Blank samples	T037
Honey	T094-T104-T137- T141-T176-T182

pesticides and glyphosate	
Reference:	Laboratory Code
Internal method	T013-T037-T094-T104-T137-T141-T150-T176-T180-T182-V180
UNI EN 15662	T096

pesticides and glyphosate	
Amount of test sample for the extraction, after reconstitution (g):	Laboratory Code
1	T013
2	T104-T141
5	T037-T094-T096-T150-T176-T180-V180
10	T182
15	T137

pesticides and glyphosate	
Extraction solvent	Laboratory Code
ACN and water	T141
DCM, Pet Ether, Acidified Methanol	T137
Water	T176
acetone	T137
acetonitrile	T013-T037-T094-T096-T104-T150-T180-T182-V180

pesticides and glyphosate	
Clean up	Laboratory Code
Dispersive SPE	T013
QuEChERS	T094-T096-T104-T141-T150-T180-T182-V180
SPE	T137-T176

pesticides and glyphosate	
pH adjusted	Laboratory Code
NO	T013-T037-T094-T096-T104-T137-T141-T176-T180-T182-V180
YES	T150

PESTICIDES IN ANIMAL FAT, M5804

Analytical methods used by participants:

pesticides	
Is the method already accredited?	Laboratory Code
NO	T121
YES	T004-T013-T014-T085-T092-T102-T134-T137-T146-V004

pesticides	
Analytical methods used:	Laboratory Code
GC/MS	T085-T092
GC/MS/MS	T004-T014-T102-T134-T137-V004
HPLC/MS/MS	T146
LC/GC-MSMS	T121
LCMSMS	T137
UPLCMS/MS	T013

pesticides	
Is the analytical method a routine one?	Laboratory Code
YES	T004-T013-T014-T085-T092-T102-T121-T134-T137-T146-V004

pesticides	
Do you participate regularly to pesticides proficiency test (PT)?	Laboratory Code
No: not regularly	T004-T014-T121-V004
Yes: more than once per year	T092-T137-T146
Yes: one time per year	T013-T085-T102-T134

Quality:

pesticides	
Quality control implemented	Laboratory Code
Control chart	T121
Control chart with Reference Material (RM)	T085
Duplicate analyses	T013
Spiked sample	T004-T014-T092-T102-T134-T137-T146-V004

Number of replicates (1 replicate = 1 extraction):

pesticides	
Number of extraction	Laboratory Code
1	T004-T085-T102-T121-T137-V004
2	T013-T014-T092-T134

pesticides	
Source of standards	Laboratory Code
A2S	T102
Eurofins	T014
LGC	T137
Sigma-Aldrich	T013
dr. Ehrenstorfer	T004-T085-T121-T134-T137-V004

pesticides	
Percentage of recovery measured in the same analytical run than test material?	Laboratory Code
NO	T121
YES	T004-T013-T014-T102-T134-T137-V004

pesticides	
Blank sample used for spiking	Laboratory Code
Blank sample supplied by PT provider	T004-T085-V004
Bovine	T137
Bovine Fat	T013
Swinefat	T014
fat	T102

pesticides	
Reference:	Laboratory Code
Internal method	T004-T013-T014-T092-T102-T121-T134-T137-V004

pesticides	
Amount of test sample for the extraction, after reconstitution (g):	Laboratory Code
1	T013
1,00	T134
2	T004-T102-V004
2,5	T014-T085
5	T121
20	T137

pesticides	
Extraction solvent	Laboratory Code
20:80 EtAc:ACN	T014
Acidified Acetonitrile	T134
Dichloromethane	T004-V004
acetone	T137
acetonitrile	T013-T085-T102-T121-T137

pesticides	
Clean up	Laboratory Code
Dispersive SPE	T013
GPC	T137
Gel Permeation Chromatography (GPC)	T004-V004
QuEChERS	T085-T121-T134
SPE	T014
dSPE	T102

pesticides	
pH adjusted	Laboratory Code
NO	T004-T013-T014-T085-T102-T121-T134-T137-V004

PESTICIDES (EXCLUDING GLYPHOSATE) IN DRIED LENTILS, LE5805P

Analytical methods used by participants:

pesticides (excluding glyphosate)	
Is the method already accredited?	Laboratory Code
NO	T136
YES	T009-T057-T075-T089-T123-T139-T147-T171-T173-T174-V057

pesticides (excluding glyphosate)	
Analytical methods used:	Laboratory Code
GC/MS/MS	T089-T147-T173-T174-V057
GCMS	T009
HPLC-MS/MS	T147
HPLC/MS	T136-T139
HPLC/MS/MS	T009-T057-T075-T123-T173
LC MS/MS	T174
LC-MS/MS and GC-MS/MS	T171

pesticides (excluding glyphosate)	
Is the analytical method a routine one?	Laboratory Code
NO	T136
YES	T009-T057-T075-T089-T123-T139-T147-T171-T173-T174

pesticides (excluding glyphosate)	
Do you participate regularly to pesticides proficiency test (PT)?	Laboratory Code
No: not regularly	T123-T136
Yes: more than once per year	T009-T075-T171-T173
Yes: one time per year	T057-T089-T139-T147-T174-V057

Quality:

pesticides (excluding glyphosate)	
Quality control implemented	Laboratory Code
Control chart	T009
Control chart with Reference Material (RM)	T089
Regular participation to proficiency test (PT)	T173-T174
Spiked sample	T057-T075-T123-T136-T147-T171-V057

Number of replicates (1 replicate = 1 extraction):

pesticides (excluding glyphosate)	
Number of extraction	Laboratory Code
1	T057-T136-T147-T171-T173-V057
2	T009-T075-T123-T174
3	T089

pesticides (excluding glyphosate)	
Source of standards	Laboratory Code
Accustandard	T057-V057
CPA CHEM	T147
CPA Chem	T075
LGC	T171-T174
Restek	T009
Sigma-Aldrich	T136
Ultra scientific - Agilent	T089
dr. Ehrenstorfer	T123-T173

pesticides (excluding glyphosate)	
Percentage of recovery measured in the same analytical run than test material?	Laboratory Code
NO	T089
YES	T057-T075-T136-T147-T171-T173-T174-V057

pesticides (excluding glyphosate)	
Blank sample used for spiking	Laboratory Code
Blank sample supplied by PT provider	T057-T075-V057
LENTICCHIE BIO	T171
Peas	T147
flour	T089

pesticides (excluding glyphosate)	
Reference:	Laboratory Code
Internal method	T057-T075-T089-T123-T136-T147-T173-V057
OTHER	T171-T174
UNI EN 15662	T171-T174

pesticides (excluding glyphosate)	
Amount of test sample for the extraction, after reconstitution (g):	Laboratory Code
5	T075-T136-T147-T171-T173-T174
10	T057-T089-T123-V057

pesticides (excluding glyphosate)	
Extraction solvent	Laboratory Code
Acidified acetonitrile	T075
acetone	T089
acetonitrile	T057-T123-T136-T147-T171-T173-T174-V057

pesticides (excluding glyphosate)	
Clean up	Laboratory Code
QuEChERS	T075-T089-T123-T136-T147-T171-T173-T174
SPE	T057-V057

pesticides (excluding glyphosate)	
pH adjusted	Laboratory Code
NO	T057-T075-T089-T123-T136-T147-T171-T174-V057
YES	T173

GLYPHOSATE IN DRIED LENTILS, LE5805G

Analytical methods used by participants:

glyphosate	
Is the method already accredited?	Laboratory Code
NO	T147-T171
YES	T075-T139

glyphosate	
Analytical methods used:	Laboratory Code
HPLC/MS	T139
HPLC/MS/MS	T075-T147-T171

glyphosate	
Is the analytical method a routine one?	Laboratory Code
NO	T171
YES	T075-T139-T147

glyphosate	
Do you participate regularly to pesticides proficiency test (PT)?	Laboratory Code
Yes: more than once per year	T075-T171
Yes: one time per year	T139-T147

Quality:

glyphosate	
Quality control implemented	Laboratory Code
Spiked sample	T075-T147-T171

Number of replicates (1 replicate = 1 extraction):

glyphosate	
Number of extraction	Laboratory Code
1	T147
2	T075-T171

glyphosate	
Source of standards	Laboratory Code
AccuStandard	T075
CPA CHEM	T147
LGC	T171

glyphosate	
Percentage of recovery measured in the same analytical run than test material?	Laboratory Code
YES	T075-T147-T171

glyphosate	
Blank sample used for spiking	Laboratory Code
Blank sample supplied by PT provider	T075
LENTICCHIE BIO	T171
Lentils	T147

glyphosate	
Reference:	Laboratory Code
Internal method	T075-T147
QUPPE	T171

glyphosate	
Amount of test sample for the extraction, after reconstitution (g):	Laboratory Code
2	T075
5	T147-T171

glyphosate	
Extraction solvent	Laboratory Code
Dichloromethane	T075
Methanol	T147
WATER/METHANOL ACIDIFIED 50/50 V/V	T171

glyphosate	
Clean up	Laboratory Code
Methanol	T075

glyphosate	
pH adjusted	Laboratory Code
NO	T075-T147

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