



EURL Proficiency Test on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026

EURL-PT-DPB_2601-OL

FOOD

Final Report PCDD/Fs and PCBs (Report Version 1.1)

07 August 2026



**Co-funded by
the European Union**

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Summary

Test sample	FOOD: Olive oil [2601-OL]
Analytes of interest Mandatory for NRLs:	PCDD/Fs (17 2,3,7,8-substituted PCDD/Fs) PCBs (12 DL-PCBs, 6 NDL-PCBs)
Methods	PCDD/Fs, DL-PCBs: GC-HRMS, GC-MS/MS and alternative methods; Bioanalytical screening methods NDL-PCBs: Any kind of method
Participants	NRLs, OFLs, other official laboratories, commercial laboratories performing the analysis of samples taken by feed business operators
Statistical evaluation	ISO 13528:2022 [1], IUPAC Protocol [2]
Report of final results	07 August 2026 (Version 1.1) Updated data in : - Annex 2: Participants' results – Tables – PCDD/F, PCB - Annex 3: Participants' z-scores / bioassay-scores – Tables – PCDD/F, PCB
Publication	EURL POPs reserves all rights to publish and present the anonymised results of the interlaboratory study in scientific journals and/or during conferences.

1. Structure of the ILS, test material and analytes

This proficiency test (PT) on the determination of **PCDD/Fs**, **PCBs**, **PBDEs** and **HBCDDs** in **Olive Oil** was organized by the EURL for halogenated POPs in Feed and Food to be performed between February and April 2026. The objective was to assess analytical performance of laboratories and inter-laboratory comparability of results from analyses of PCDD/Fs, PCBs, PBDEs and HBCDDs in one sample of **Olive Oil**.

National Reference Laboratories (NRLs) for halogenated POPs in Feed and Food from EU member states were requested to participate as part of their work programme for 2026. NRLs are invited to encourage the participation of Official Laboratories (OFLs) from their member states as part of their duties following Article 101 of regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017. Furthermore, participation of OFLs will allow the extension of the data basis for calculation of assigned values and evaluation of results.

Official laboratories and **commercial laboratories** performing the analysis of samples taken by food business operators were invited to participate in this interlaboratory study.

The evaluated results were discussed by representatives of European Commission, NRLs and the EURL at the EURL/NRL online workshop on 11 May 2026.

1.1. Samples and coding

The test sample was prepared from regular market food and is fortified with analytes of interest using analytical standards or technical mixtures of PCDD/Fs, PCBs, PBDEs and HBCDDs.

Olive Oil	Sample no. 2601-OL-xxx
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Each participant received about **20 g** of the test sample in a HDPE bottle.

1.2. Analytes of interest

NRLs for halogenated POPs in feed and food were requested to determine the following parameters:

- 17 2,3,7,8-substituted PCDD/Fs
- WHO-PCDD/F-TEQ (using WHO2005-TEF)
- 12 dioxin-like PCBs
- WHO-PCB-TEQ (using WHO2005-TEF)
- WHO-PCDD/F-PCB-TEQ (using WHO2005-TEF)
- Six non-dioxin-like (NDL) PCBs (indicator PCBs): PCB 28, 52, 101, 138, 153, 180
- Sum of six non-dioxin-like (NDL) PCBs (indicator PCBs)
- PCDD/F-PCB-BEQ, PCDD/F-BEQ and/or PCB-BEQ, if applicable (using bioanalytical screening methods)

1.3. Methods

One or more of the following **detection methods** could be applied:

- GC-HRMS-, GC-MS/MS-methods or other alternative methods for PCDD/Fs and dioxin-like PCBs
- Bioanalytical screening methods for PCDD/Fs and dioxin-like PCBs
- Any kind of method for non-dioxin-like PCBs, PBDEs and HBCDDs.

1.4. Coding of laboratories and confidentiality

The identity of participating laboratories will be kept confidential.

For NRLs of EU member states, the suggested “protocol for management of underperformance in comparative testing or lack of collaboration of National Reference Laboratories (NRLs)” will be followed. The confidentiality of NRLs will be kept according to this protocol.

For OFLs of EU member states cooperating with a NRL, the respective NRLs will inform the EURL for halogenated POPs about the participating OFLs and will receive the respective laboratory codes, invoices for the participation fee and certificates of participation of the OFLs.

1.5. Results of PCDD/Fs and PCBs

1.5.1. Results of PCDD/Fs and PCBs determined by physico-chemical methods (GC-HRMS, GC-MS/MS, GC-LRMS, GC-ECD, ...)

Laboratories should

- use their own reference standards for identification and quantification,
- report results for each analyte,
- report the limit of quantification (LOQ), at least for each non-quantified analyte,
- report upper and lower bound results for WHO-PCDD/F-PCB-TEQ, WHO-PCDD/F-TEQ, WHO-PCB-TEQ and sum of six non-dioxin-like PCBs,
- report if sample exceeds respective EU maximum or action levels for WHO-PCDD/F-PCB-TEQ, WHO-PCDD/F-TEQ and/or WHO-PCB-TEQ or the maximum level for the sum of six non-dioxin-like PCBs beyond reasonable doubt taking into account the measurement uncertainty,
- report the measurement uncertainty, applied for checking of compliance, for WHO-PCDD/F-PCB-TEQ, WHO-PCDD/F-TEQ, WHO-PCB-TEQ and the sum of six non-dioxin-like PCBs,
- give method information and
- give information about the accreditation of the laboratory according to ISO/IEC 17025 (*for metrological traceability of consensus values of participants used as assigned values*).

Results had to be reported in **pg/g fat** for PCDD/Fs and dioxin-like PCBs and in **ng/g fat** for non-dioxin-like PCBs. TEQ-based results had to be calculated using the WHO-TEFs of 2005 [3].

1.5.2. Results of PCDD/Fs and PCBs determined by bioanalytical screening methods

Laboratories should

- use their own reference standards,
- report if the samples are suspected to be noncompliant with EU legal limits and confirmation is required,
- report PCDD/F and/or PCB results in BEQ, if applicable,
- report the reporting limit, maximum level / action level, which the evaluation is based on, and the bioassay cut-off, if applicable,
- give method information
- and give information about the accreditation of the laboratory according to ISO/IEC 17025.

Results had to be reported in **pg BEQ/g fat** for PCDD/Fs and dioxin-like PCBs.

2. Participating laboratories

This proficiency test was open for participation of:

- National Reference Laboratories (NRLs) of EU member states
- National Reference Laboratories of other European countries
- Official laboratories
- Commercial laboratories

109 laboratories registered for this proficiency test.

Table 1: Participating laboratories

Participating laboratories	Region	No. of participants
National Reference Laboratories	European Union	27
	Other Countries	5
Official Laboratories	European Union	56
	Other Countries	4
Commercial Laboratories		15
University or Academic Research Institute		2
	Total	109

2.1. Number of reported results

Table 2: Reported results for PCDD/F and PCB sum parameters

Reported results	WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum of six NDL-PCBs	PCDD/F-PCB-BEQ [Bioanalytical screening methods]
All laboratories	72	76	74	99	9

2.2. Accreditation

Table 3: Reported accreditation according to ISO/IEC 17025 by participants for PCDD/Fs and PCBs

Olive oil	PCDD/Fs [Physico-chemical methods]	DL- PCBs [Physico-chemical methods]	NDL- PCBs [Physico-chemical methods]	PCDD/Fs, PCBs [Bioanalytical screening methods]
yes	66	64	77	4
no	1	1	6	1

2.3. Detection methods

The following detection methods were applied:

- GC-HRMS-, GC-MS/MS-, GC-LRMS-methods for PCDD/Fs and non- ortho PCBs
- GC-HRMS-, GC-MS/MS-, GC-LRMS-, GC-ECD-methods for mono-ortho-PCBs and indicator PCBs
- Bioanalytical screening methods for PCDD/Fs and dioxin-like PCBs

Table 4: Overview of physico-chemical detection methods for PCDD/Fs and PCBs applied by participants

Detection methods	PCDD/Fs	DL-PCBs	NDL-PCBs
HRMS	49	48	40
MS/MS	21	19	40
LRMS	-	1	2
ECD	-	-	4

3. Test for sufficient homogeneity and stability

The test for sufficient homogeneity was performed according to ISO 13528:2022 [1] and the International Harmonized Protocol for the Proficiency Testing of Analytical Chemistry Laboratories [2].

Therefore, 10 portions of the test samples 2601-OL were analyzed in duplicate for PCDD/Fs and PCBs. The test for sufficient homogeneity was performed for the selected sum parameters and individual congeners. The test materials showed sufficient homogeneity for this proficiency test. The stability check of the analytes of interest applying room temperature storage was performed according to ISO 13528:2022 [1]. The test material showed sufficient stability for this proficiency test.

4. Determination of the assigned value

Statistical evaluation of the PT results was performed by the EURL for halogenated POPs in feed and food according to ISO 13528:2022 [1] and the International Harmonized Protocol for the Proficiency Testing of Analytical Chemistry Laboratories [2].

The determination of the assigned value was performed according to ISO 13528:2022 [1] by estimating of the assigned value as the consensus of participants' results (using only results of physico-chemical methods). The Hampel estimator as robust analysis method was taken for calculation of the assigned value after examination of the distribution of the remaining results using histogram and Kernel density estimation.

Assigned values were calculated for WHO-PCDD/F-PCB-TEQ, WHO-PCDD/F-TEQ, WHO-PCB-TEQ, the sum of six non-dioxin-like PCBs and individual PCDD/F and PCB congeners (including limits of quantification (LOQs)), if possible. Additionally, the median of all values was calculated.

For individual congeners (including LOQs) assigned values were only calculated according to the above-mentioned procedure, if more than 2/3 of all results were above the LOQ. Levels for individual congeners were only used for evaluation and calculation if these levels were equal to or above the LOQ; otherwise, the LOQ was used instead.

Due to high variation of participants' results or the limited number of reported results above the LOQ, no assigned values could be calculated for:

- 2,3,7,8-TCDD
- 1,2,3,7,8,9-HxCDF
- 1,2,3,4,7,8,9-HpCDF

Since there are no traceable reference values available, the assigned values in this PT were calculated based on the Hampel estimator of the participants' results. Therefore, the assigned values are only traceable to these submitted results. Additionally, the results of all participants reporting results and the results of participants having accreditation according ISO/IEC 17025 were compared for PCDD/F and PCB sum parameters. No significant differences between the assigned values calculated for both data sets were observed.

Table 5: Comparison of assigned values for all participants and participants with reported accreditation according to ISO/IEC 17025 for PCDD/F and PCB sum parameters in olive oil 2601-OL

Sum parameters	Assigned value All participants	Assigned value ISO/IEC 17025 accreditation	Deviation
	pg/g,ng/g fat	pg/g,ng/g fat	%
WHO-PCDD/F-PCB-TEQ ub rep	38.2	38.2	0
WHO-PCDD/F-TEQ ub rep	0.670	0.663	1
WHO-PCB-TEQ ub rep	37.5	37.7	<1
Sum of 6 NDL-PCBs ub rep	23.7	23.4	1

4.1. PCDD/Fs and PCBs – Sum parameters

The assigned values for the test sample 2601-OL were calculated as consensus of participants' results for the PCDD/F and PCB sum parameters, taking into account the calculation criteria described above.

Table 6: Assigned values for physico-chemical methods for PCDD/Fs and PCBs (rounded to three significant figures)

Test sample	WHO-PCDD/F- PCB-TEQ (ub)	WHO-PCDD/F- TEQ (ub)	WHO-PCB- TEQ (ub)	Sum 6 NDL-PCBs (ub)
	pg/g fat			ng/g fat
Olive oil (2601-OL)	38.2	0.670	37.5	23.7

Table 7: Assigned values for PCDD/Fs and DL-PCBs for comparison with BEQ results of bioanalytical screening methods (rounded to two significant figures)

Test sample	WHO-PCDD/F-PCB- TEQ (ub)	WHO-PCDD/F-TEQ (ub)	WHO-PCB-TEQ (ub)
	pg/g fat		
Olive oil (2601-OL)	38	0.67	37

4.2. PCDD/Fs and PCBs – Individual congeners

The assigned values for the test sample 2601-OL for individual congeners were calculated as a consensus of the participants' results, taking into account the calculation criteria described above. They are shown graphically in Figures 1, 3, 4 and 5 (tabular summary see annex 1). Figures 2 and 6 display the contribution of the individual congeners to the WHO-PCDD/F-TEQ or the WHO-PCB-TEQ.

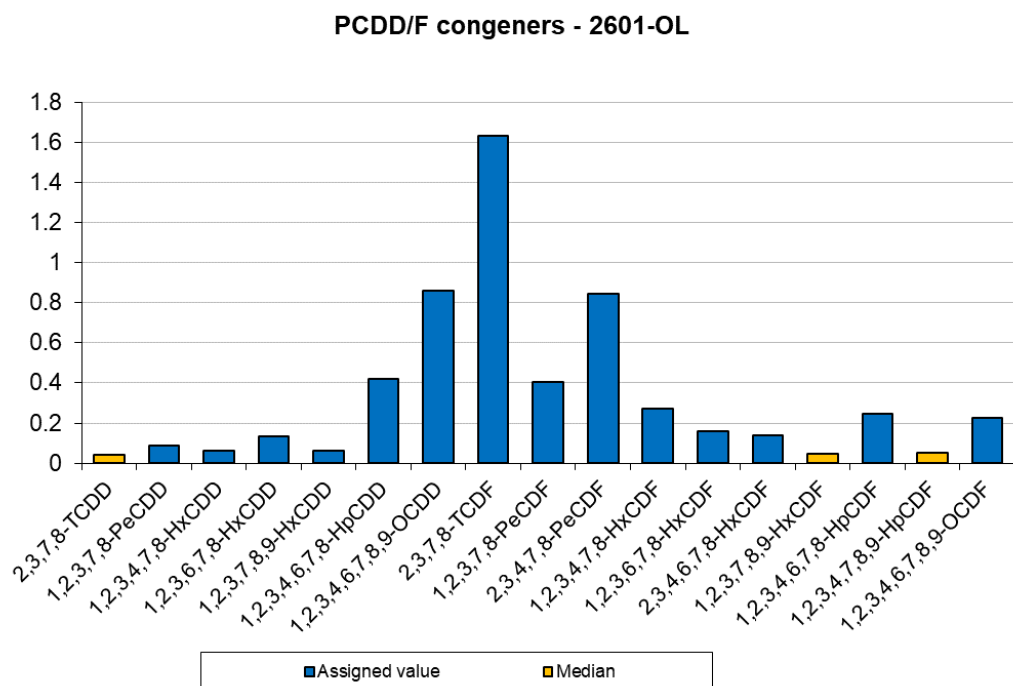


Figure 1: Assigned values (blue) and median values (orange) for PCDD/F congeners for olive oil (2601-OL) [pg/g fat]

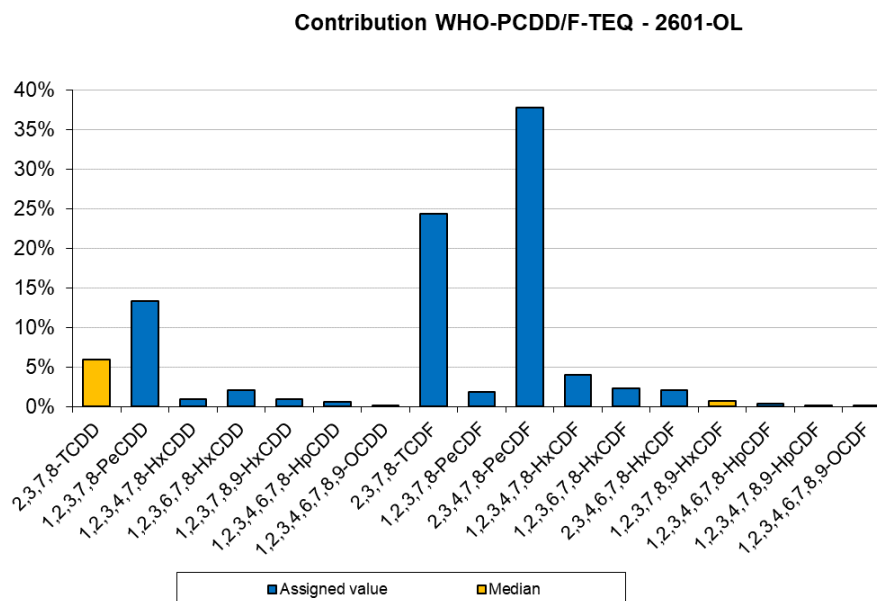


Figure 2: Contributions in % to WHO-PCDD/F-TEQ for PCDD/F assigned (blue) and median (orange) values for olive oil (2601-OL)

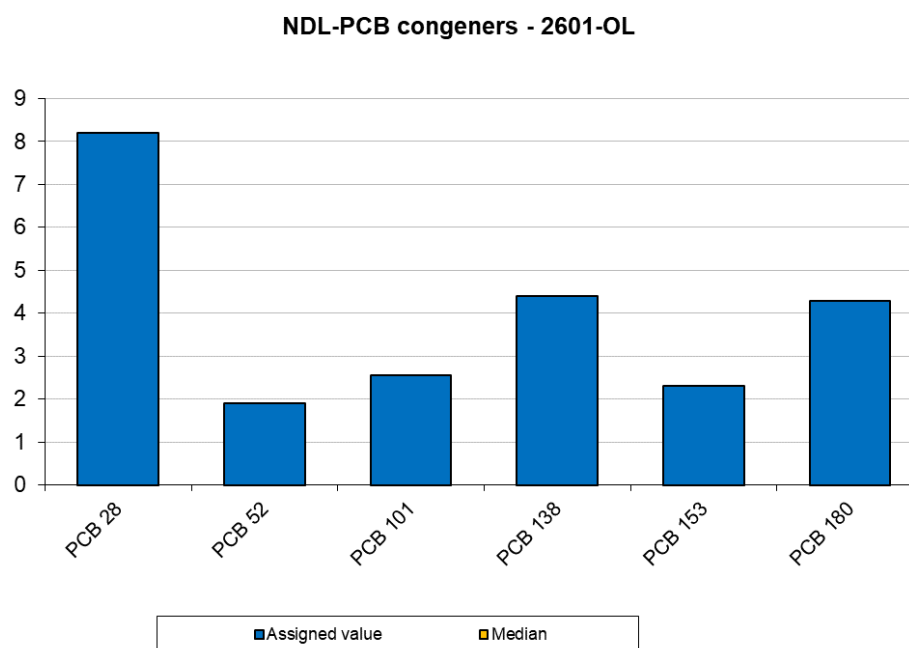


Figure 3: Assigned values (blue) for NDL-PCB congeners for olive oil (2601-OL) [ng/g fat]

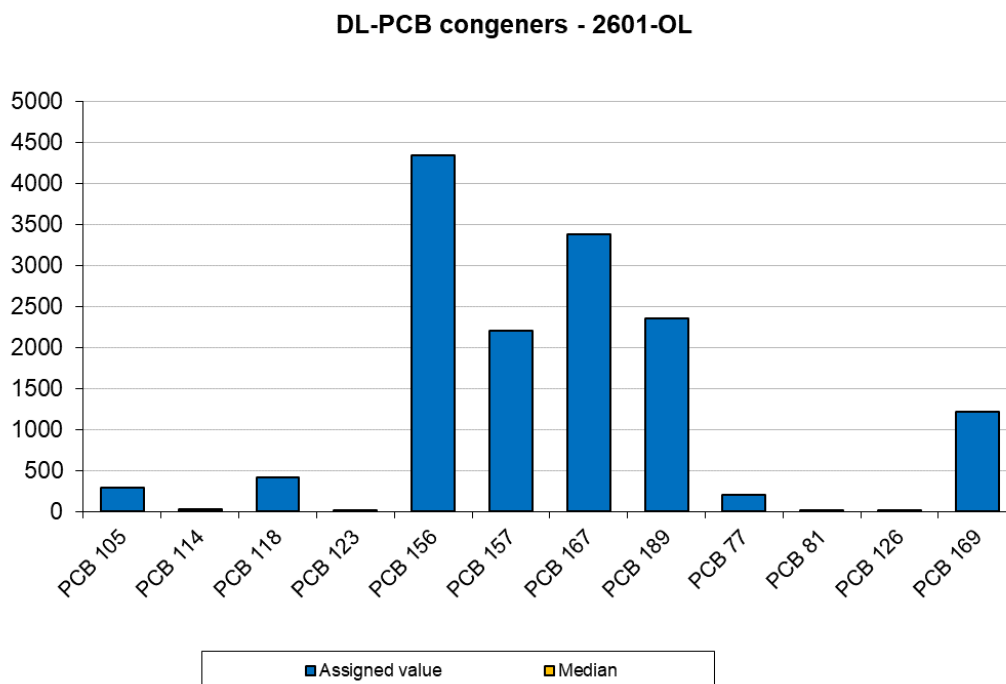


Figure 4: Assigned values (blue) for DL-PCB congeners for olive oil (2601-OL) [pg/g fat]

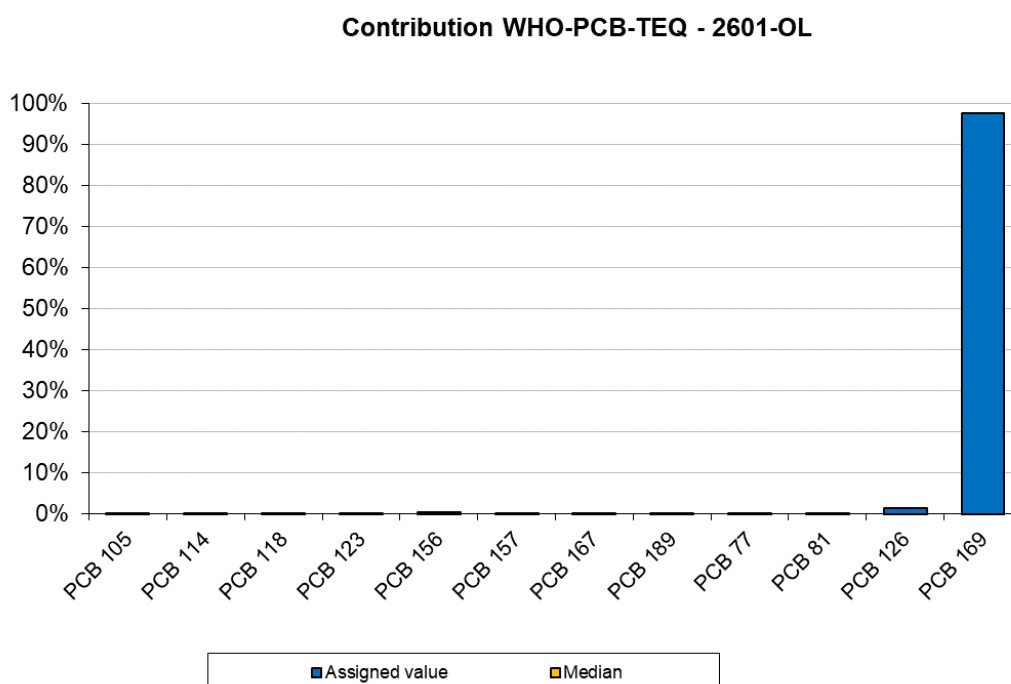


Figure 5: Contributions in % to WHO-PCB-TEQ for PCB assigned (blue) values for olive oil (2601-OL)

4.3. Comparison of assigned values with legal limits

Maximum levels (ML) for food are defined in the Commission Regulation (EU) 2023/915 and action levels (AL) in Commission Recommendation 2013/711/EU.

Table 8: Maximum levels and action levels for vegetables oils and fats

Vegetable oils and fats		Maximum level	Action level
WHO-PCDD/F-PCB-TEQ	pg/g fat	1.25	-
WHO-PCDD/F-TEQ	pg/g fat	0.75	-
WHO-PCB-TEQ	pg/g fat	-	-
Sum of 6 NDL-PCBs	ng/g fat	40	-

For the test sample olive oil (2601-OL) the assigned values for the WHO-PCDD/F-TEQ and the sum of 6 NDL PCBs were in the range of 0.5 to 4 of the respective ML.

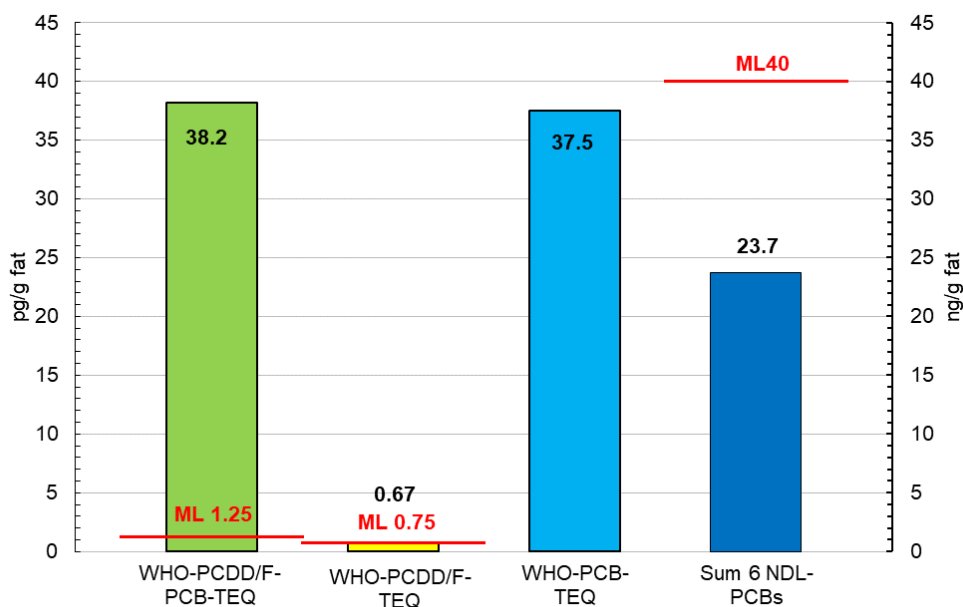


Figure 6: Comparison of the assigned values for sum parameters for olive oil (2601-OL) with maximum levels [TEQ sum parameters in pg/g fat and sum of 6 NDL-PCBs in ng/g fat for]

5. Scoring of results – Z-scores

5.1. Participants' results for physico-chemical methods

5.1.1. Z-scores

Criteria for successful participation of laboratories using physico-chemical methods were based on the evaluation of the results of the sum parameters WHO-PCDD/F-TEQ, WHO-PCB-TEQ, WHO-PCDD/F-PCB-TEQ and the sum of 6 NDL-PCBs and evaluated individual congeners. The criteria will be applicable for sum parameter concentrations in the range (about 0.5 to 4 times) of the level of interest (maximum or action level).

For evaluation of results of physico-chemical methods the z-scores were calculated according to the following formula:

$$z = \frac{(x - x_a)}{\sigma_{p_{rel}} * x_a}$$

x : participant's result

x_a : assigned value

$\sigma_{p_{rel}}$: relative fitness-for-purpose-based "standard deviation for proficiency assessment"

For WHO-PCDD/F-TEQ, WHO-PCB-TEQ and WHO-PCDD/F-PCB-TEQ the relative standard deviation for proficiency assessment $\sigma_{p_{rel}}$ is defined as 10 %, for the sum of 6 NDL-PCBs as 15 % and for evaluated individual PCDD/F, PCB congeners as 20 %.

Z-scores for individual congeners were only calculated and reported if levels for these congeners are equal to or above the LOQ. Otherwise no z-scores was given.

Interpretation of z-scores:

$ z\text{-score} \leq 2$	satisfactory performance
$2 < z\text{-score} < 3$	questionable performance (warning signal)
$ z\text{-score} \geq 3$	unsatisfactory performance (action signal)

5.1.2. PCDD/Fs and PCBs - Participants' z-scores

Table 9: Distribution of all participants' and NRLs only z-scores for sum parameters

Olive oil (2601-OL)	WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum of six indicator PCBs
All Participants				
$ z\text{-score} \leq 2$	87%	84%	89%	96%
$2 < z\text{-score} < 3$	3%	12%	3%	1%
$ z\text{-score} \geq 3$	10%	4%	8%	3%

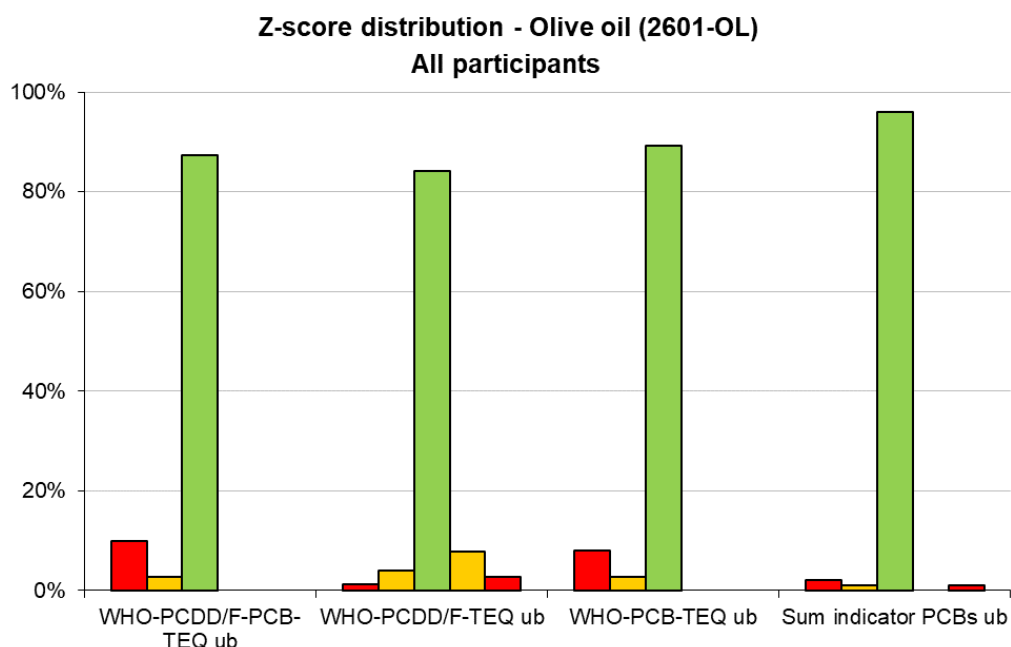


Figure 7: Distribution of all participants' z-scores for sum parameters for olive oil (2601-OL) [Green bars: $-2 \leq z\text{-score} \leq 2$, orange bars: $-3 < z\text{-score} < -2$, $2 < z\text{-score} < 3$, red bars: $z\text{-score} \leq -3$, $z\text{-score} \geq 3$]

5.1.3. Comparison of reported and calculated sum parameters

In addition to the calculation of the sum parameters for reported individual PCDD/F and PCB congener values, the calculated sum parameters for PCDD/Fs and PCBs (calculated by the EURL) were compared with the ones reported by each participant. As the reported sum parameters are decisive to compare the results with the legal limits, an incorrect calculation might lead to a wrong assessment of a sample. In case of a significant deviation of the reported

sum parameter value from the EURL calculated one, laboratories need to check their calculation of the sum parameters.

Only 1 of the laboratories had differences > 10% between reported and calculated upper bound sum parameters for the sum of NDL-PCBs.

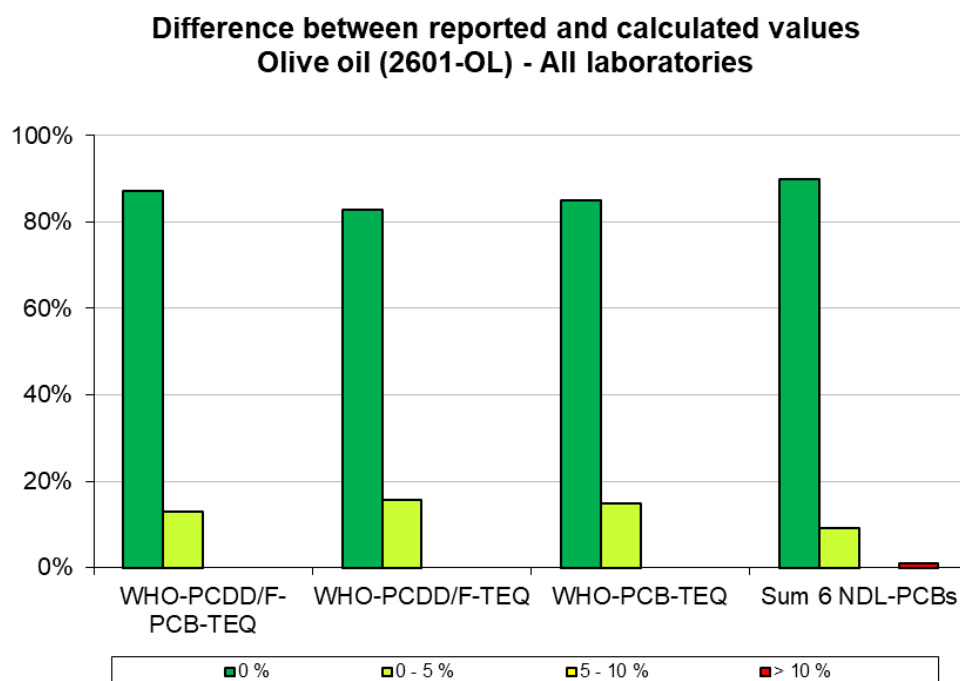


Figure 8: Difference between reported and calculated sum parameters for PCDD/Fs and PCBs [Green bars: 0 %, light green bars: 0-5 %, yellow bars: 5-10 %, red bars: > 10 %] for olive oil (2601-OL) given in percentage of participants' results

5.1.4. Difference between upper and lower bound calculation

According to Commission Regulation (EU) 2017/644 the difference between upper bound level and lower bound level shall not exceed 20 % for confirmation of exceedance of maximum level or in case of need of action levels for PCDD/Fs and DL-PCBs. For NDL-PCBs the difference between upper bound and lower bound levels for the sum of 6 NDL-PCBs shall be ≤ 20 % at the level of interest. Participants with a larger deviation should review their analytical methods, especially with regard to sensitivity and limit of quantification.

For the test samples olive oil 2601-OL the assigned values for the sum parameters WHO-PCDD/F-TEQ and the sum of the 6 NDL-PCBs were below the respective maximum levels, but in the range of 0.5 to 4-times of the maximum level. The assigned value for the WHO-PCDD/F-PCB-TEQ was above the respective maximum level.

No significant differences were found for WHO-PCDD/F-PCB-TEQ, WHO-PCDD/F-TEQ and sum of 6 NDL-PCBs between the upper and lower bound calculations in olive oil, except for

WHO-PCDD/F-TEQ were a significant number of laboratories reported a difference above 20% (although the assigned value for WHO-PCDD/F-TEQ was only ca. 10% below the maximum level).

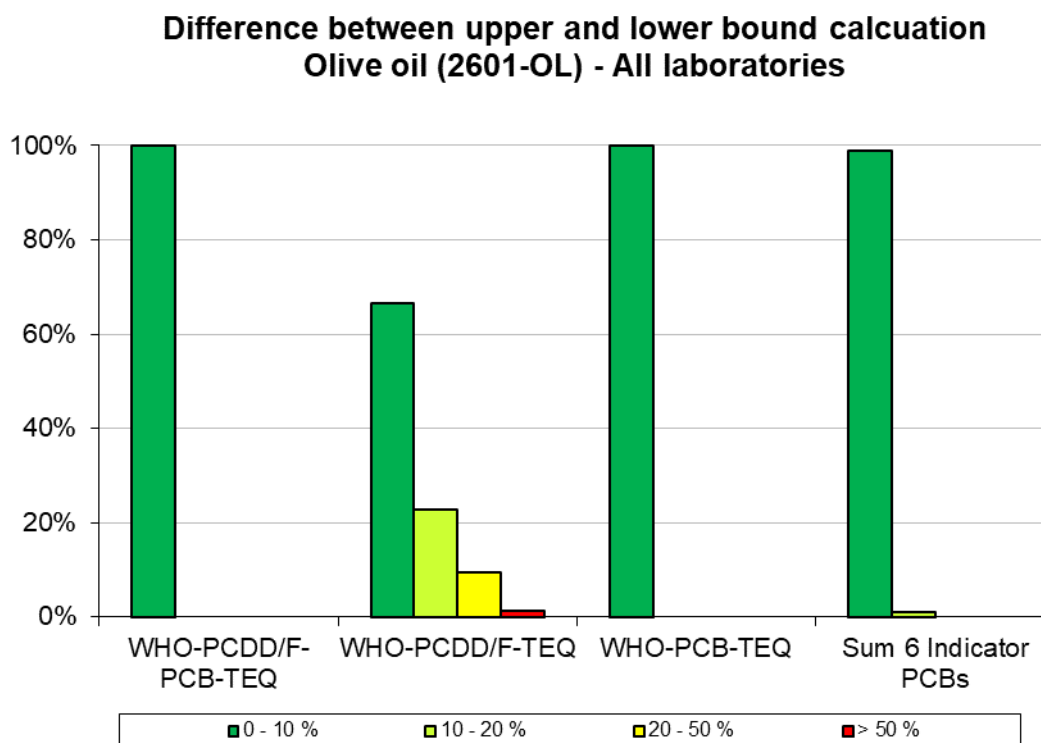


Figure 9: Difference between upper and lower bound calculation for olive oil (2601-OL) given in percentage of participants' results [Green bars: 0 – 10 %, light green bars: 10 – 20 %, yellow bars: 20 – 50 %, red bars: > 50 %]

5.1.5. Positive scoring system

The “positive scoring system” gives one assessment for each PT sample covering all relevant PCDD/F and PCB sum parameters and congeners.

The total score for the positive scoring system was calculated according to the following general principles:

- Calculation of z-scores for sum parameters and evaluated individual congeners
- Calculation of the positive scores according to the following table:

Positive scoring system	z-score ≤ 2	2 < z-score < 3	z-score ≥ 3
Individual congeners	Positive score	Positive score	Positive score
Contribution to sum parameter* > 10 %	12	6	0
Contribution to sum parameter* 3-10 %	8	4	0
Contribution to sum parameter* < 3 %	6	3	0
Not evaluated congeners	0	0	0

* separately for the respective sum parameters WHO-PCDD/F-TEQ, WHO-PCB-TEQ and the sum of six non-dioxin-like PCBs

- Calculation of maximum achievable scores ($|z\text{-score}| \leq 2$) for PCDD/F and DL-PCB and non-dioxin-like PCB congeners separately:

$$\text{Maximum Score} = \sum_{i=1}^n \text{Max.Score}_{(>10\%)i} + \sum_{i=1}^m \text{Max.Score}_{(3-10\%)i} + \sum_{i=1}^p \text{Max.Score}_{(<3\%)i}$$

- Calculation of the participant's scores for PCDD/F and DL-PCB and non-dioxin-like PCB congeners separately:

$$\text{Participant's Score} = \sum_{i=1}^n \text{Score}_{(>10\%)i} + \sum_{i=1}^m \text{Score}_{(3-10\%)i} + \sum_{i=1}^p \text{Score}_{(<3\%)i}$$

- Calculation of achieved scoring percentage for each participant:

$$\text{Participant's Scoring Percentage} = \frac{\text{Participant's score}}{\text{Maximum score}} \cdot 100$$

- Criteria for successful participation:

Sum parameters:	≤ 1 parameter with $ z\text{-score} > 2$, no parameter with $ z\text{-score} \geq 3$
PCDD/F congeners:	≥ 75 % of maximum score
DL-PCB congeners:	≥ 75 % of maximum score
Non-dioxin-like PCB congeners:	≥ 75 % of maximum score
Difference between reported and calculated results for sum parameters	≤ 10 %

The assessment based on the positive scoring system is performed for each PT test sample. A laboratory participates successfully in a PT for PCDD/Fs and PCBs, if all above mentioned criteria for the reported analytes are met for each PT test sample.

Table 10: Successful participation rate according to positive scoring system for olive oil (2601-OL)

Scoring system	Successful participation		Reason for not successful participation		
	yes	no	Sum parameters	Individual congeners	Calculation of sum parameters
Percentage of participants' results					
2601-OL	89 %	11 %	6 %	10 %	1 %

5.2. Participants' results for bioanalytical screening methods

According to Commission Regulation (EU) 2017/644, "a screening method in principle classifies a sample as compliant or suspected to be non-compliant. For this, the calculated BEQ level is compared to the cut-off value [...]. Samples below the cut-off value are declared compliant, samples equal or above the cut-off value as suspected to be non-compliant, requiring analysis by a confirmatory method".

Therefore, the main criterion for evaluation of results from bioanalytical screening methods is their ability to reliably identify compliant samples and samples suspected to be non-compliant with established legal limits.

For further evaluation of the performance of bioanalytical screening methods, bioassay-scores are applied: The reported BEQ-values derived from bioanalytical screening methods are compared with the WHO-TEQ assigned values calculated on basis of the results of physical-chemical methods for the concentration range of 0.5 to 2 times the level of interest.

Because bioanalytical screening methods focus mainly on distinguishing between compliant and potentially non-compliant samples, a direct comparison of bioassay-scores and z-scores is not possible. However, bioassay scores may serve as a tool to assess method performance within the scope of external quality control measures of the respective laboratory.

Bioassay-scores are calculated according to the following formula:

$$bioassay - score = \frac{(x - x_a)}{x_a * \sigma_{BArel}}$$

x: participant's result (BEQ from bioanalytical screening method)
x_a: assigned value (physical-chemical methods)
σ_{BArel}: relative bioassay target deviation (20%)

For PCDD/F-BEQ, PCB-BEQ and PCDD/F-PCB-BEQ the relative bioassay target deviation *σ_{BArel}* was defined as 20%.

5.2.1. Influence of congener pattern of test sample

The test sample olive oil 2601-OL showed an unusual congener pattern with a high concentration of PCB 169 contributing about 98% to the WHO-PCB-TEQ. The current WHO-TEF 2005 value for PCB 169 is set at 0.03, for the WHO-TEFs of 2022 the value is lowered to 0.005. In comparison with the WHO-TEQ values based on the WHO-TEF values of 2005 bioanalytical screening methods underestimate the WHO-PCB-TEQ value considerable. When comparing the results with WHO-TEF values of 2022 differences are smaller but BEQ values are still lower than the WHO-TEQ values.

5.2.2. Assessment of analytical results

As a consequence of the comparison of the assigned values of the test sample olive oil 2601-OL with legal limits, the assessment of the analytical results using bioanalytical screening methods should read “suspected to be non-compliant with the maximum level for WHO-PCDD/F-PCB-TEQ”, “compliant with the maximum level for WHO-PCDD/F-TEQ”.

Table 11: Evaluation of assigned values for olive oil (2601-OL)

	WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ (ML)	WHO-PCDD/F-TEQ (AL)	WHO-PCB-TEQ
Olive oil 2601-OL	> ML	< ML	-	-

8 laboratories reported results using bioanalytical screening methods: 8 for PCDD/F-PCB-BEQ, 3 for PCDD/F-BEQ and PCB-BEQ. 6 laboratories assessed the sample to be suspected to be non-compliant with ML for WHO-PCDD/F-PCB-TEQ, whereas one laboratory assessed the sample to be compliant which corresponds to a false negative result (table 14).

Table 12: Participants’ assessment of analytical results using bioanalytical screening methods for olive oil 2601-OL

Laboratories’ assessment of analytical results	WHO-PCDD/F-PCB-TEQ Maximum level	WHO-PCDD/F-TEQ Maximum level	WHO-PCDD/F-TEQ Action level	WHO-PCB-TEQ Action level
Suspected to be non-compliant	6	4	2	2
Compliant	1 (false negative)	0	1	1

5.2.3. Participants' bioassay-scores

For the test sample olive oil 2601-OL the assigned value for the WHO-PCDD/F-TEQ are in the range (about 0.5 to 2 times) of the respective maximum levels, whereas the assigned value for WHO-PCDD/F-PCB-TEQ is a factor of 30 above the respective maximum level. Therefore, PCDD/F-PCB-BEQ values of participants cannot directly be compared with the assigned value for WHO-PCDD/F-PCB-TEQ and as a consequence the calculated bioassay-scores are for information only.

Table 13: Distribution of participants' bioassay-scores for BEQ parameters for olive oil (2601-OL)

Percentage of participants' results	PCDD/F-PCB-BEQ	PCDD/F-BEQ	PCB-BEQ
$ \text{bioassay-score} \leq 2$	no evaluation	100 %	no evaluation
$2 < \text{bioassay-score} < 3$		-	
$ \text{bioassay-score} \geq 3$		-	

6. Participants' feedback

A questionnaire for feedback from participants of this EURL proficiency test was available as online survey between 20 April 2026 and 15 May 2026. The survey was anonymous, but participants could also give their laboratory name. The identity of the laboratories is kept confidential. The survey included several questions related to different topics (participants' information, organization of the proficiency test, PT test samples and evaluation of results and summary of data) and a possibility to include comments and further suggestions. In total, 10 laboratories (9 % of all PT participants) replied to this survey.

Table 14: Participating laboratories in the feedback survey

Type of laboratory	Answers
National Reference Laboratory (NRL)	5
Official Laboratory (OFL)	2
Commercial laboratory	3
Other (e.g. research and development)	0

Table 15: Feedback of participants regarding organization of PT (5 stars meaning "fully", 1 star meaning "not at all")

Organization of PT	5 of 5 stars	4 of 5 stars	3 of 5 stars	2 of 5 stars	1 of 5 stars	No answer
Announcement	80%	20%				
Instructions	60%	30%	10%			
Sample shipment	80%	20%				
Reporting of results	50%	30%	20%			
Preliminary report	80%	20%				

Table 16: Feedback of participants regarding specific aspects of PT (5 stars meaning "fully", 1 star meaning "not at all")

Specific aspects of PT	5 of 5 stars	4 of 5 stars	3 of 5 stars	2 of 5 stars	1 of 5 stars	No answer
Provision of information	70%	20%	10%			
Acceptable time frame	70%	30%				
Reporting of results on PT platform	40%	30%	20%		10%	
Evaluation of preliminary results	50%	40%			10%	
Choice of matrix	50%	50%				
Level of contamination	30%	40%	10%	10%	10%	

Additional comments:

- The congener profile should reflect real-life samples to higher extent.
- PCB 169 too high
- There are some textboxes missing in results reporting page: there is no place to note things like "below reporting limit" or "over the validation range".
- Worked overall well, would like to be able to use the method parameters we put in this time to use in the next PT-round (if we use the same method). Maybe one can

create methods for the lab and then choose them in the exercise you participate in. Other than that, we missed a field to make comments on the different pages. For example, we would have liked to comment that we did not find an action level for the matrix, we did not just skip that question.

- *The new PT platform is very user friendly and simplifies working with data.*
- *The new PT platform is very understandable and easy to use.*

7. Quality control

The Deutsche Akkreditierungsstelle GmbH attests that the provider of proficiency testing Chemisches und Veterinäruntersuchungsamt Freiburg, EU Reference Laboratory (EURL) for halogenated persistent organic pollutants (POPs) in feed and food is competent under the terms of DIN EN ISO/IEC 17043:2010 to carry out proficiency testing in the testing field of determination of halogenated persistent organic pollutants (POPs) in food and feed (Accreditation number: D-EP-18625-01-00; <https://www.dakks.de/de/akkreditierte-stelle.html?id=D-EP-18625-01-01>). Homogeneity and stability testing were performed under accreditation according to DIN EN ISO/IEC 17025:2018.

8. Results of participants

An overview of the PCDD/F and PCB results for the PT test sample olive oil (2601-OL) are given in the following annexes. Laboratories are coded according to the laboratory codes accessible on the EURL PT platform.

9. References

- [1] ISO 13528:2022, Statistical methods for use in proficiency testing by interlaboratory comparisons, International Organization for Standardization
- [2] M. Thompson, S.L.R. Ellison, R. Wood: The International Harmonized Protocol For The Proficiency Testing Of Analytical Chemistry Laboratories, Pure Appl. Chem., Vol. 78, No. 1, pp. 145-196, 2006.
- [3] M. van den Berg et al., The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds. Toxicological Sciences 93(2), 223-241 (2006)

10. Annex

Olive oil – 2601-OL	
Annex 1	Assigned values – PCDD/F, PCB
Annex 2	Participants' results – Tables – PCDD/F, PCB
Annex 3	Participants' z-scores / bioassay-scores – Tables – PCDD/F, PCB
Annex 4	Participants' z-scores – Charts – PCDD/F, PCB
Annex 5	Scoring system – PCDD/F, PCB
Annex 6	Test for sufficient homogeneity and stability – PCDD/F, PCB
Annex 7	Participants' methods – PCDD/F, PCB

EURL for halogenated POPs in Feed and Food
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EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

07 August 2026

Annex 1: Assigned values of PCDD/Fs and PCBs

Test sample - Olive oil (2601-OL)

Assigned values of sum parameters and individual congeners

Estimation of the assigned value as the consensus of participants' results

Assigned value = Hampel estimate



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]
 EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)
 Sum parameters - Assigned values

Analyte	Result pg/g fat	Assigned value	Robust standard deviation	Standard uncertainty	No. of results contributing to assigned value	Median [all values]
WHO-PCDD/F-PCB-TEQ upper bound rep		38.2	3.16	0.48	69	37.9
WHO-PCDD/F-PCB-TEQ lower bound rep		38.1	3.16	0.48	68	37.7
WHO-PCDD/F-PCB-TEQ upper bound cal		38.2	3.10	0.46	70	37.8
WHO-PCDD/F-PCB-TEQ lower bound cal		38.1	3.07	0.46	70	37.8



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Olive oil (2601-OL)

PCDD/F - Assigned values

Analyte	Result pg/g fat	Assigned value	Robust standard deviation	Standard uncertainty	No. of results contributing to assigned value	Median [all values]
WHO-PCDD/F-TEQ upper bound rep		0.670	0.0785	0.012	70	0.650
WHO-PCDD/F-TEQ lower bound rep		0.613	0.0870	0.013	69	0.613
WHO-PCDD/F-TEQ upper bound cal		0.670	0.0767	0.011	70	0.651
WHO-PCDD/F-TEQ lower bound cal		0.618	0.0898	0.013	70	0.619
2,3,7,8-TCDD						0.0400
1,2,3,7,8-PeCDD		0.0894	0.0250	0.0037	70	0.0901
1,2,3,4,7,8-HxCDD		0.0617	0.0188	0.0028	70	0.0620
1,2,3,6,7,8-HxCDD		0.136	0.0338	0.0050	70	0.137
1,2,3,7,8,9-HxCDD		0.0632	0.0209	0.0031	70	0.0645
1,2,3,4,6,7,8-HpCDD		0.420	0.0524	0.0078	70	0.413
1,2,3,4,6,7,8,9-OCDD		0.861	0.173	0.026	70	0.849
2,3,7,8-TCDF		1.63	0.181	0.027	70	1.62
1,2,3,7,8-PeCDF		0.405	0.0604	0.0090	70	0.410
2,3,4,7,8-PeCDF		0.844	0.102	0.015	70	0.844
1,2,3,4,7,8-HxCDF		0.272	0.0517	0.0077	70	0.272
1,2,3,6,7,8-HxCDF		0.158	0.0336	0.0050	70	0.160
2,3,4,6,7,8-HxCDF		0.137	0.0314	0.0047	70	0.139
1,2,3,7,8,9-HxCDF						0.0447
1,2,3,4,6,7,8-HpCDF		0.246	0.0521	0.0078	70	0.240
1,2,3,4,7,8,9-HpCDF						0.0500
1,2,3,4,6,7,8,9-OCDF		0.226	0.0882	0.013	70	0.223



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EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

Dioxin-like PCB - Assigned values

Analyte	Result pg/g fat	Assigned value	Robust standard deviation	Standard uncertainty	No. of results contributing to assigned value	Median [all values]
WHO-PCB-TEQ upper bound rep		37.5	3.00	0.44	73	37.1
WHO-PCB-TEQ lower bound rep		37.4	3.02	0.44	72	37.1
WHO-PCB-TEQ upper bound cal		37.5	3.02	0.44	73	37.2
WHO-PCB-TEQ lower bound cal		37.5	3.02	0.44	73	37.2
PCB 105		297	25.0	3.7	73	300
PCB 114		27.9	5.46	0.80	73	28.1
PCB 118		419	43.3	6.3	73	416
PCB 123		16.0	4.35	0.64	73	16.1
PCB 156		4340	347	51	73	4300
PCB 157		2210	184	27	73	2190
PCB 167		3380	307	45	73	3380
PCB 189		2350	165	24	73	2320
PCB 77		207	23.4	3.4	73	208
PCB 81		10.5	1.46	0.21	73	10.4
PCB 126		4.98	0.831	0.12	73	4.96
PCB 169		1220	99.9	15	73	1200



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

Non dioxin-like PCB - Assigned values

Analyte	Result ng/g fat	Assigned value	Robust standard deviation	Standard uncertainty	No. of results contributing to assigned value	Median [all values]
Sum 6 NDL-PCBs upper bound rep		23.7	2.24	0.28	98	23.4
Sum 6-NDL-PCBs lower bound rep		23.5	2.23	0.28	96	23.4
Sum 6 NDL-PCBs upper bound cal		23.6	2.34	0.29	98	23.5
Sum 6 NDL-PCBs lower bound cal		23.6	2.34	0.29	98	23.4
PCB 28		8.20	1.23	0.16	98	8.12
PCB 52		1.90	0.213	0.027	98	1.90
PCB 101		2.56	0.255	0.032	98	2.59
PCB 138		4.39	0.451	0.057	98	4.37
PCB 153		2.31	0.262	0.033	98	2.30
PCB 180		4.29	0.454	0.057	98	4.32



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]
 EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)
 WHO-TEQ - Assigned values - Bioanalytical screening methods

Analyte	Result pg BEQ/g fat	Assigned value	Robust standard deviation	Standard uncertainty	No. of results contributing to assigned value	Median [all values]
WHO-PCDD/F-PCB-TEQ ub rep		38	3.2	0.48	69	38
WHO-PCDD/F-TEQ ub rep		0.67	0.078	0.012	70	0.65
WHO-PCB-TEQ ub rep		37	3.0	0.44	73	37



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

07 August 2026

Annex 2: Participants' results of PCDD/Fs and PCBs

Test sample - Olive oil (2601-OL)

* Modified/additional results reported after distribution of preliminary results to all participating laboratories

Olive oil (2601-OL)
Sum parameters - Results

LC	Data set	Sample	Result pg/g fat	WHO-PCDD/F-PCB-TEQ reported		WHO-PCDD/F-PCB-TEQ calculated		WHO-PCDD/F-TEQ reported		WHO-PCDD/F-TEQ calculated		WHO-PCB-TEQ reported		WHO-PCB-TEQ calculated		Result ng/g fat	Sum 6 Indicator PCBs reported		Sum 6 Indicator PCBs calculated	
				upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound		upper bound	lower bound	upper bound	lower bound
1	A	2601-OL		40.3	39.8	40.3	39.8	1.03	0.491	1.03	0.491	39.3	39.3	39.3	39.3		22.3	22.3	22.3	22.3
2		2601-OL																		
3	A	2601-OL		37.6	37.6	37.8	37.7	0.752	0.746	0.752	0.746	36.8	36.8	37	37		21	21	21	21
4	A	2601-OL															21.9	21.9	22	22
5	A	2601-OL		38.4	38.3	37.6	37.6	0.72	0.66	0.717	0.659	37.7	37.7	36.9	36.9		23	23	23	23
6	A	2601-OL		36.9	36.9	37	36.9	0.66	0.64	0.663	0.636	36	36	36.3	36.3		25.4	25.4	25.4	25.4
7	A	2601-OL		40	40	39.9	39.9	0.6	0.598	0.6	0.598	39.4	39.4	39.3	39.3		23	23	23	23
8	A	2601-OL		39.9	39.9	40	40	0.649	0.588	0.644	0.588	39.3	39.3	39.4	39.4					
9	A	2601-OL						0.614	0.563	0.614	0.563						26.8	26.8	26.7	26.7
10	A	2601-OL				37.6	37.5	0.601	0.543	0.602	0.544	37	37	37	37		24	24	24	24
11	A	2601-OL		35.3	35.3	35.5	35.5	0.705	0.705	0.705	0.705	34.6	34.6	34.8	34.8		20.5	20.5	20.5	20.5
12	A	2601-OL		33.8	33.8	33.8	33.8	0.635	0.594	0.635	0.594	33.2	33.2	33.2	33.2		22.6	22.6	22.6	22.6
13	A	2601-OL		37.7	37.6	37.7	37.6	0.621	0.505	0.621	0.505	37.1	37.1	37.1	37.1		25.3	25.3	25.3	25.3
14	A	2601-OL		43.7	43.7	43.6	43.6	0.732	0.729	0.737	0.73	43	43	42.9	42.9		28.1	28.1	28.1	28.1
15	A	2601-OL		28.8	29.1	28.9	28.8	0.716	0.621	0.66	0.623	28.2	28.2	28.2	28.2		24.7	24.7	24.7	24.7
16	A	2601-OL		38.6	38.6	38.6	38.6	0.682	0.682	0.682	0.682	37.9	37.9	37.9	37.9		30.9	30.9	30.9	30.9
17	A	2601-OL		42.5	42.5	42.5	42.4	0.585	0.525	0.584	0.525	42	42	41.9	41.9		24.9	24.9	24.9	24.9
18	A	2601-OL										35	35	35	35		22.6	22.6	22.6	22.6
19	A	2601-OL															26.2	26.2	26.2	26.2
20	A	2601-OL		38.6	38.6	38.7	38.7	0.642	0.642	0.643	0.642	37.9	37.9	38.1	38.1		23.6	23.6	23.6	23.6
21	A	2601-OL		34.7	34.6	34.8	34.6	0.65	0.53	0.65	0.528	34	34	34.1	34.1		24.5	24.5	25400	25400
22	A	2601-OL		37.3	37.3	37.2	37.2	0.665	0.663	0.665	0.663	36.7	36.7	36.5	36.5		22.8	22.8	22.8	22.8
23	A	2601-OL															23.7	23.7	23.8	23.8
24	A	2601-OL		1.5	1.5	1.49	1.46	0.65	0.63	0.651	0.624	0.84	0.83	0.84	0.834		22	22	22	22
25	A	2601-OL															25.9	25.9	25.8	25.8
26	A	2601-OL		36.1	36.1	36.2	36.1	0.256	0.243	0.256	0.243	35.8	35.8	35.9	35.9		24.4	24.4	24.4	24.4
27	A	2601-OL		40.7	40.7	40.7	40.7	0.68	0.68	0.686	0.686	40	40	40	40		22.3	22.3	22.3	22.3
28	A	2601-OL				38.9	38.9	0.648	0.635	0.648	0.635	38.2	38.2	38.3	38.3		23.5	23.5	23.5	23.5
29	A	2601-OL															24.8	24.8	24.8	24.8
30	A	2601-OL															24.4	24.4	24.4	24.4
31	A	2601-OL															9.28	8.78	9.28	8.78
32	A	2601-OL		36.8	36.8	36.8	36.8	0.637	0.61	0.634	0.609	36.2	36.2	36.2	36.2		22.9	22.9	22.9	22.9
33	A	2601-OL		39.5	39.5	39.5	39.4	0.673	0.613	0.674	0.613	38.9	38.9	38.8	38.8		23.7	23.7	23.7	23.7
34	A	2601-OL															23.2	23.2	23.2	23.2
35	A	2601-OL		38.6	38.6	38.7	38.7	0.708	0.663	0.708	0.663	37.9	37.9	38	38		21.1	21.1	21.1	21.1
36	A	2601-OL															24.5	24.5	24.6	24.6
37	A	2601-OL		36.4	36.4	36.5	36.4	0.59	0.544	0.59	0.546	35.8	35.8	35.9	35.9		22.6	22.6	22.6	22.6
38	A	2601-OL		39	39	39	39	0.64	0.64	0.637	0.633	38	38	38.4	38.4		25	25	24.9	24.9
39	A	2601-OL		37.2	37.1	37.1	37.1	0.64	0.55	0.65	0.65	36.5	36.5	36.4	36.4		28.2	28.2	28.2	28.2
40	A	2601-OL		37.1	37.1	37.2	37.2	0.632	0.594	0.632	0.594	36.5	36.5	36.6	36.6		21	21	21	21
41	A	2601-OL															24.5	24.5	24.5	24.5
42	A	2601-OL										36	36	36	36		27.7	27.7	27.7	27.7
43	A	2601-OL		38.5	38.6	38.5	38.4	0.548	0.598	0.591	0.549	38	38	37.9	37.9		24.2	24.2	25	25
44	A	2601-OL		37	37	37.1	37	0.698	0.64	0.697	0.64	36.4	36.4	36.4	36.4		21.1	21.1	21.1	21.1
45	A	2601-OL															23.4	23.4	23.4	23.4
46	A	2601-OL															21.3	21.3	21.3	21.3
47	A	2601-OL		38.2	38.2	38.2	38.1	0.551	0.55	0.552	0.549	37.7	37.7	37.6	37.6		22.6	22.6	22.6	22.6
48	A	2601-OL															24.8	24.8	24.8	24.8
49	A	2601-OL															24.9	24.9	24.9	24.9
50	A	2601-OL		35.4	35.4	35.4	35.4	0.621	0.602	0.619	0.603	34.8	34.8	34.8	34.8		24.6	24.6	24.6	24.6
51	A	2601-OL		37.3	37.2	37.4	37.3	0.48	0.42	0.476	0.422	36.8	36.8	36.9	36.9		24	24	24.3	24.3
52	A	2601-OL		42.1	42.1	42.2	42.2	0.75	0.75	0.762	0.757	41.3	41.3	41.4	41.4		23.4	23.4	23.4	23.4
53	A	2601-OL															28.6		28.1	28.1
54	A	2601-OL															22.9	22.9	22.9	22.9
55	A	2601-OL															22.7	22.7	22.7	22.7
56	A	2601-OL		38.4	38.4	38.4	38.4	0.635	0.635	0.635	0.635	37.7	37.7	37.8	37.8		26.1	26.1	26.1	26.1
57	A	2601-OL		44.9	44.7	44.8	44.7	0.63	0.48	0.631	0.483	44.2	44.2	44.2	44.2		25.2	25.2	25.2	25.2
58	A	2601-OL															23.2	23.2	23.1	23.1
59	A	2601-OL		38	38	38.1	38.1	0.779	0.695	0.78	0.767	37.3	37.3	37.3	37.3		22.6	22.6	22.6	22.6
60	A	2601-OL		38.6	38.6	38.5	38.5	0.623	0.621	0.624	0.621	38	38	37.9	37.9		22.9	22.9	22.9	22.9
61	A	2601-OL		40.1	40.1	40	40	0.695	0.695	0.697	0.69	39.4	39.4	39.3	39.3		20.5	20.5	20.6	20.6
62	A	2601-OL		41.7	41.7	41.7	41.6	0.583	0.539	0.583	0.538	41.1	41.1	41.1	41.1		27.5	27.5	27.5	27.5
63	A	2601-OL		31	31	31	31	0.62	0.61	0.623	0.609	30.4	30.4	30.4	30.4		27	27	26.8	26.8
64	A	2601-OL															22.5	22.5	22.5	22.5
65	A	2601-OL						0.513	0.427	0.514	0.514						22.6	22.6	22.6	22.6
66		2601-OL																		
67	A	2601-OL		38.6	38.6	38.6	38.5	0.619	0.573	0.619	0.573	38	38.1	38	37.9		18.4	18.4	18.4	18.4

Olive oil (2601-OL)
Sum parameters - Results

LC	Data set	Sample	Result pg/g fat	WHO-PCDD/F-PCB-TEQ reported		WHO-PCDD/F-PCB-TEQ calculated		WHO-PCDD/F-TEQ reported		WHO-PCDD/F-TEQ calculated		WHO-PCB-TEQ reported		WHO-PCB-TEQ calculated		Result ng/g fat	Sum 6 Indicator PCBs reported		Sum 6 Indicator PCBs calculated			
				upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound		upper bound	lower bound	upper bound	lower bound		
68	A	2601-OL		39.1	38.9	39.1	39	0.74	0.615	0.74	0.616	38.3	38.3	38.4	38.4		22.6	22.6	22.6	22.6		
69	A	2601-OL		32.8	32.8	32.6	32.6	0.65	0.65	0.649	0.649	32.1	32.1	32	32		23	23	23.5	23.5		
70	A	2601-OL		37.7	37.6	37.8	37.7	0.623	0.538	0.623	0.538	37.1	37.1	37.2	37.2		22.7	22.7	22.7	22.7		
71	A	2601-OL																23	20	20	20	
72	A	2601-OL																23.4	23.4	23.4	23.4	
73	A	2601-OL		36.6	36.5	36.6	36.6	0.639	0.581	0.638	0.581	36	35.9	36	36		22.6	22.6	22.6	22.6		
74	A	2601-OL		37.7	37.7	37.8	37.8	0.609	0.586	0.609	0.586	37.1	37.1	37.2	37.2		23.1	23.1	23.1	23.1		
75	A	2601-OL		35.1	34.9	35.2	35	0.71	0.54	0.714	0.537	34.4	34.4	34.5	34.5		24.2	24.2	24.2	22.2		
76	A	2601-OL		38.3	38.3	38.3	38.3	0.703	0.703	0.704	0.704	37.6	37.6	37.6	37.6		23.8	23.8	23.8	23.8		
77	A	2601-OL						0.694	0.613	0.696	0.696						51.9	51.9	51.9	51.9		
78	A	2601-OL		39.5	39.5	39.9	39.9	0.54	0.52	0.54	0.527	39	39	39.4	39.4							
79	A	2601-OL		36.9	36.9	37	36.9	0.64	0.62	0.65	0.629	36.3	36.3	36.3	36.3		20.9	20.9	20.9	20.9		
80	A	2601-OL															22.7	22.7	22.7	22.7		
81	A	2601-OL		41.6	41.2	41.7	41.3	0.868	0.547	0.868	0.547	40.7	40.7	40.8	40.8		25.6	25.6	25.6	25.6		
82	A	2601-OL																				
83	A	2601-OL		41.7	41.7	41.8	41.8	0.668	0.664	0.668	0.665	41.1	41.1	41.1	41.1		24.1	24.1	24.1	24.1		
84	A	2601-OL		23.4	23.3	23.3	23.3	0.735	0.68	0.735	0.735	22.6	22.6	22.6	22.6		26.3	26.3	26.3	26.3		
85	A	2601-OL		24.5	24.5	24.6	24.6	0.68	0.676	0.68	0.68	23.9	23.9	23.9	23.9		27.7	27.7	27.9	27.9		
86	A	2601-OL		37.3	37.2	37.3	37.3	0.596	0.572	0.596	0.572	36.7	36.7	36.7	36.7		23.1	23.1	23.1	23.1		
87	A	2601-OL															22	22	22	22		
88		2601-OL																				
89	A	2601-OL															27.7	27.7	27.7	27.7		
90	A	2601-OL		4.66	4.59	4.65	4.65	0.76	0.69	0.754	0.754	3.9	3.9	3.9	3.9							
91	A	2601-OL		4.49	4.49	4.49	4.49	0.86	0.86	0.859	0.859	3.63	3.63	3.63	3.63		2.34	2.34	2.34	2.34		
92	A	2601-OL		40.5	40.4	40.6	40.5	0.735	0.637	0.735	0.636	39.8	39.7	39.9	39.9		25.2	25.2	25.2	25.2		
93	A	2601-OL		34.8	34.7	34.9	34.8	0.686	0.563	0.686	0.563	34.1	34.1	34.2	34.2		22.7	22.7	22.7	22.7		
94		2601-OL																				
95	A	2601-OL		45.1	45.1	45.1	45.1	0.626	0.592	0.626	0.592	44.5	44.5	44.5	44.5		25.1	25.1	25.1	25.1		
96	A	2601-OL		26.2	26.2	26.3	26.2	0.551	0.475	0.551	0.475	25.7	25.7	25.7	25.7		21.9	21.9	21.9	21.9		
97		2601-OL																				
98	A	2601-OL		28.4	28.4	28.4	28.4	0.831	0.831	0.831	0.831	27.6	27.6	27.6	27.6		17	17	17	17		
99	A	2601-OL		39.7		39.7	39.7	0.71		0.71	0.659	39		39	39		26.7		26.7	26.7		
100	A	2601-OL		41.5	41.3	51.7	51.4	0.83	0.55	0.822	0.547	40.7	40.7	50.9	50.9		18.7	18.7	18.7	18.7		
101	A	2601-OL																				
102	A	2601-OL															20.5	20.5	20.5	20.5		
103	A	2601-OL															21.5	21.5	21.5	21.5		
104	A	2601-OL		37.9	37.7	37.8	37.7	0.639	0.47	0.639	0.47	37.2	37.2	37.2	37.2		23.7	23.7	24.1	24.1		
105	A	2601-OL		40.2	40.2	40.2	40.2	0.612	0.612	0.612	0.612	39.6	39.6	39.6	39.6		25.4	25.4	25.4	25.4		
106	A	2601-OL		38.5	38.3	38.5	38.3	0.84	0.62	0.836	0.622	37.7	37.6	37.7	37.7		23.5	23.5	23.5	23.5		
107	A	2601-OL		36.2	36.1	36.4	36.2	0.867	0.711	0.867	0.71	35.3	35.3	35.5	35.5							
108	A	2601-OL		40.4	40.2	40.4	40.1	0.762	0.528	0.762	0.527	39.7	39.6	39.6	39.6		24.4	24.4	24.4	24.4		
109	A	2601-OL		37.3	37.2	37.3	37.3	0.847	0.772	0.847	0.772	36.4	36.4	36.5	36.5		16.4	16.4	19.4	19.4		
Additional sets																						
24	B	2601-OL		1.5	1.4			0.69	0.6	0.693	0.607											
78	B	2601-OL		40.5	40.5	40.1	40.1	0.53	0.52	0.536	0.521	40	40	39.6	39.6							
81	B	2601-OL															25.6	25.6	25.6	25.6		
82	B	2601-OL																				
Modification																						
18*		2601-OL		35.7	35.7			0.638	0.638	0.639	0.639											
24*		2601-OL		35	35							35	35	33.8	33.8							
31*		2601-OL															19.1	19.1	19.1	19.1		
62*		2601-OL						0.583	0.539	0.583	0.539											

Olive oil (2601-OL)
Assessment of analytical results, Measurement uncertainty

LC	Data set	Sample	Assessment of analytical results		Exceeds maximum level for WHO-PCDD/F-PCB-TEQ	Exceeds maximum level for WHO-PCDD/F-TEQ	Exceeds action level for WHO-PCDD/F-TEQ	Exceeds action level for WHO-PCB-TEQ	Exceeds maximum level for Sum 6 Indicator PCBs		Measurement uncertainty [%]			
			Exceeds maximum level for WHO-PCDD/F-PCB-TEQ	Exceeds maximum level for WHO-PCDD/F-TEQ							WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum 6 Indicator PCBs
1	A	2601-OL	yes	yes	no	no	no	no	no		15	15	15	15
2		2601-OL												
3	A	2601-OL	yes	no					no		24.97	16.38	18.85	22.67
4	A	2601-OL							no					20
5	A	2601-OL	yes	no					no					
6	A	2601-OL	yes	no					no		25	25	30	20
7	A	2601-OL	yes	no					no		26	22	26	22
8	A	2601-OL	yes	no							25	25	25	
9	A	2601-OL		no	no							20		20
10	A	2601-OL		no	yes		yes		no			15	15	15
11	A	2601-OL	yes	no	yes		yes		no		30	30	30	30
12	A	2601-OL	yes	no	yes				no		20	20	20	
13	A	2601-OL	yes	no	no		no		no		21	21	11	20
14	A	2601-OL	yes	yes	yes		yes		no		13.7	13.5	15.3	13.7
15	A	2601-OL	yes	no	yes		yes		no		25	26	40	30
16	A	2601-OL	yes		no		yes		no		14	16	14	15
17	A	2601-OL	yes	no	yes		yes		no		15	0.2	15	10
18	A	2601-OL		no			yes		no			20	17	23
19	A	2601-OL							no					30
20	A	2601-OL	yes	no					no		20	20	20	20
21	A	2601-OL	yes	no			yes		no		6.09	0.131	5.977	7.31
22	A	2601-OL	yes	no	no		no		no		21	13	16	7
23	A	2601-OL							no					23
24	A	2601-OL	no	no					no		51	39	34	22
25	A	2601-OL							no					30
26	A	2601-OL	yes	no	no				no		12.5	11.8	12.5	15.2
27	A	2601-OL	yes	no	no		yes		no		34.2	17.7	16.5	23.4
28	A	2601-OL		no	no		no		no			25	25	25
29	A	2601-OL							no					13.6
30	A	2601-OL							no					30
31	A	2601-OL							no					20
32	A	2601-OL	yes	no	no		yes		yes		25	25	25	
33	A	2601-OL	yes	no					no		41.8	18.4	42.4	6.1
34	A	2601-OL							no					25
35	A	2601-OL	yes	no					no		30	30	30	30
36	A	2601-OL												13
37	A	2601-OL	yes	no					no		30	30	30	30
38	A	2601-OL	yes	no					no		20	20	20	20
39	A	2601-OL	yes	no	no		no		no		44	44	44	44
40	A	2601-OL	yes	no	yes		yes		yes		23	22	20	20
41	A	2601-OL							no					50
42	A	2601-OL							no				30	30
43	A	2601-OL	yes	no	no		yes		no		29	29	29	29
44	A	2601-OL	yes	no	no		no		no		30	30	30	25
45	A	2601-OL							no					55
46	A	2601-OL							no					34.4
47	A	2601-OL	yes	no					no		17	25	17	6
48	A	2601-OL							no					11
49	A	2601-OL							no					16
50	A	2601-OL	yes	no			yes		no		25	25	30	30
51	A	2601-OL	yes	no					no		30	30	30	30
52	A	2601-OL	yes	no	yes		yes		yes		30	30	30	30
53	A	2601-OL							no					40
54	A	2601-OL							no					25
55	A	2601-OL							no					
56	A	2601-OL	yes	no	no		yes		no		25	25	25	25
57	A	2601-OL	yes	no	no		yes		no		24	43	37	20
58	A	2601-OL							no					15
59	A	2601-OL	yes	no					no		30	35	25	20
60	A	2601-OL	yes	no	no		yes		no		29.52	25	30	30
61	A	2601-OL	yes	no	no		yes		no		38	38	38	28
62	A	2601-OL	yes	no	yes		no		no		39.57	31.39	39.63	31.59
63	A	2601-OL	yes	no	no		no		no		17.9	17.4	17.9	25
64	A	2601-OL							no					20
65	A	2601-OL		no	yes				yes			25		25
66		2601-OL												
67	A	2601-OL	yes	no	no		yes		no		20	20	30	30
68	A	2601-OL	yes	no	no		no		no		20.8	33	20.6	20.4

Olive oil (2601-OL)
Assessment of analytical results, Measurement uncertainty

LC	Data set	Sample	Assessment of analytical results					Measurement uncertainty [%]				
			Exceeds maximum level for WHO-PCDD/F-PCB-TEQ	Exceeds maximum level for WHO-PCDD/F-TEQ	Exceeds action level for WHO-PCDD/F-TEQ	Exceeds action level for WHO-PCB-TEQ	Exceeds maximum level for Sum 6 Indicator PCBs	WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum 6 Indicator PCBs	
69	A	2601-OL	yes	no		yes	no					
70	A	2601-OL	yes	no		yes	no					
71	A	2601-OL					no					50
72	A	2601-OL					no					26
73	A	2601-OL	yes	no	yes	yes	no	42	21	42.5		33.5
74	A	2601-OL	yes	no	no	no	no	21.3	20.5	20.8		30.4
75	A	2601-OL	yes	no	yes	yes	no	24.17	22	10		10
76	A	2601-OL	yes	no			no	23.8	22.8	27.9		24.9
77	A	2601-OL		no					38			
78	A	2601-OL	yes	no	no	yes	30	30	30			
79	A	2601-OL	yes	no	no		31.9	27.2	32			25.6
80	A	2601-OL					no					20
81	A	2601-OL	yes	no	yes	yes	no	20	20	20		20
82	A	2601-OL										
83	A	2601-OL	yes	no			no	17	23	34		27
84	A	2601-OL										
85	A	2601-OL	yes	no			no	29	29	29		29
86	A	2601-OL	yes	no	no	yes	no	7.934	0.122	7.623		7.02
87	A	2601-OL					no					33
88		2601-OL										
89	A	2601-OL					no					50
90	A	2601-OL	yes	yes	yes	yes						
91	A	2601-OL	yes	no	no	yes	no	1.98	0.38	1.6		1.03
92	A	2601-OL	yes	no	yes	yes	yes	33	20	26		22
93	A	2601-OL	yes	no			no	10	28.7	10		13
94		2601-OL										
95	A	2601-OL	yes	no	no	yes	no	20	20	20		20
96	A	2601-OL	yes	no	no	yes	no	27	28.1	23.6		23.5
97		2601-OL										
98	A	2601-OL	yes	no	no	yes	no	44	30.5	27.3		34.1
99	A	2601-OL	yes	no	yes	yes	no	37.7	37.7	37.7		37.7
100	A	2601-OL	yes	no	no	yes	no	30	30	30		
101	A	2601-OL										
102	A	2601-OL					no					35
103	A	2601-OL					no					20
104	A	2601-OL	yes	no	no	yes	no	20	30	20		30
105	A	2601-OL	yes	no	no	no	no	18	18	19		19
106	A	2601-OL	yes	no	yes	yes		15	15	15		
107	A	2601-OL	yes	yes	yes	yes		13.1	10.5	7.8		
108	A	2601-OL	yes					20	20	20		20
109	A	2601-OL	yes	no	yes	yes	no	25	25	25		25
Additional sets												
24	B	2601-OL	no	no				51	39			
78	B	2601-OL	yes	no	no	yes		30	30	30		
81	B	2601-OL					no					30
82	B	2601-OL										
Modification												
18*		2601-OL						17	20			
24*		2601-OL	yes			yes		51		34		
31*		2601-OL					no					20
62*		2601-OL		no	yes				31.39			

Olive oil (2601-OL)
Difference between upper bound (ub) - lower bound (lb) calculation, Comparison of reported and calculated sum parameters

LC	Data set	Sample	Difference between upper and lower bound calculation for reported sum parameters [%]				Difference between reported and calculated upper bound sum parameters [%]				Correct calculation (deviation ≤ 10 %)	Difference between reported and calculated lower bound sum parameters [%]				Correct calculation (deviation ≤ 10 %)
			WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum 6 Indicator PCBs	WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum 6 Indicator PCBs		WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum 6 Indicator PCBs	
1	A	2601-OL	1	52	0	0	0	0	0	0	yes	0	0	0	0	yes
2		2601-OL														
3	A	2601-OL	0	1	0	0	-1	0	-1	0	yes	0	0	-1	0	yes
4	A	2601-OL				0				0	yes				0	yes
5	A	2601-OL	0	8	0	0	2	0	2	0	yes	2	0	2	0	yes
6	A	2601-OL	0	3	0	0	0	0	-1	0	yes	0	1	-1	0	yes
7	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
8	A	2601-OL	0	9	0		0	1	0		yes	0	0	0		yes
9	A	2601-OL		8		0		0		0	yes		0		0	yes
10	A	2601-OL		10	0	0		0	0	0	yes		0	0	0	yes
11	A	2601-OL	0	0	0	0	-1	0	-1	0	yes	-1	0	-1	0	yes
12	A	2601-OL	0	6	0	0	0	0	0	0	yes	0	0	0	0	yes
13	A	2601-OL	0	19	0	0	0	0	0	0	yes	0	0	0	0	yes
14	A	2601-OL	0	0	0	0	0	-1	0	0	yes	0	0	0	0	yes
15	A	2601-OL	-1	13	0	0	0	8	0	0	yes	1	0	0	0	yes
16	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
17	A	2601-OL	0	10	0	0	0	0	0	0	yes	0	0	0	0	yes
18	A	2601-OL			0	0			0	0	yes			0	0	yes
19	A	2601-OL				0				0	yes				0	yes
20	A	2601-OL	0	0	0	0	0	0	-1	0	yes	0	0	-1	0	yes
21	A	2601-OL	0	18	0	0	0	0	0	-103573	yes	0	0	0	-103573	yes
22	A	2601-OL	0	0	0	0	0	0	1	0	yes	0	0	1	0	yes
23	A	2601-OL				0				0	yes				0	yes
24	A	2601-OL	0	3	1	0	1	0	0	0	yes	3	1	0	0	yes
25	A	2601-OL				0				0	yes				0	yes
26	A	2601-OL	0	5	0	0	0	0	0	0	yes	0	0	0	0	yes
27	A	2601-OL	0	0	0	0	0	-1	0	0	yes	0	-1	0	0	yes
28	A	2601-OL		2	0	0		0	0	0	yes		0	0	0	yes
29	A	2601-OL				0				0	yes				0	yes
30	A	2601-OL				0				0	yes				0	yes
31	A	2601-OL				5				0	yes				0	yes
32	A	2601-OL	0	4	0	0	0	0	0	0	yes	0	0	0	0	yes
33	A	2601-OL	0	9	0	0	0	0	0	0	yes	0	0	0	0	yes
34	A	2601-OL				0				0	yes				0	yes
35	A	2601-OL	0	6	0	0	0	0	0	0	yes	0	0	0	0	yes
36	A	2601-OL				0				0	yes				0	yes
37	A	2601-OL	0	8	0	0	0	0	0	0	yes	0	0	0	0	yes
38	A	2601-OL	0	0	0	0	0	0	-1	0	yes	0	1	-1	0	yes
39	A	2601-OL	0	14	0	0	0	-2	0	0	yes	0	-18	0	0	yes
40	A	2601-OL	0	6	0	0	0	0	0	0	yes	0	0	0	0	yes
41	A	2601-OL				0				0	yes				0	yes
42	A	2601-OL			0	0			0	0	yes			0	0	yes
43	A	2601-OL	0	-9	0	0	0	-8	0	-3	yes	1	8	0	-3	yes
44	A	2601-OL	0	8	0	0	0	0	0	0	yes	0	0	0	0	yes
45	A	2601-OL				0				0	yes				0	yes
46	A	2601-OL				0				0	yes				0	yes
47	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
48	A	2601-OL				0				0	yes				0	yes
49	A	2601-OL				0				0	yes				0	yes
50	A	2601-OL	0	3	0	0	0	0	0	0	yes	0	0	0	0	yes
51	A	2601-OL	0	13	0	0	0	1	0	-1	yes	0	0	0	-1	yes
52	A	2601-OL	0	0	0	0	0	-2	0	0	yes	0	-1	0	0	yes
53	A	2601-OL								2	yes					
54	A	2601-OL				0				0	yes				0	yes
55	A	2601-OL				0				0	yes				0	yes
56	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
57	A	2601-OL	0	24	0	0	0	0	0	0	yes	0	-1	0	0	yes
58	A	2601-OL				0				0	yes				0	yes
59	A	2601-OL	0	11	0	0	0	0	0	0	yes	0	-10	0	0	yes
60	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
61	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	1	0	0	yes
62	A	2601-OL	0	8	0	0	0	0	0	0	yes	0	0	0	0	yes
63	A	2601-OL	0	2	0	0	0	0	0	1	yes	0	0	0	1	yes
64	A	2601-OL				0				0	yes				0	yes
65	A	2601-OL		17		0		0		0	yes		-20		0	yes
66		2601-OL														
67	A	2601-OL	0	7	0	0	0	0	0	0	yes	0	0	1	0	yes
68	A	2601-OL	1	17	0	0	0	0	0	0	yes	0	0	0	0	yes
69	A	2601-OL	0	0	0	0	1	0	0	-2	yes	1	0	0	-2	yes

Olive oil (2601-OL)
Difference between upper bound (ub) - lower bound (lb) calculation, Comparison of reported and calculated sum parameters

LC	Data set	Sample	Difference between upper and lower bound calculation for reported sum parameters [%]				Difference between reported and calculated upper bound sum parameters [%]				Correct calculation (deviation ≤ 10 %)	Difference between reported and calculated lower bound sum parameters [%]				Correct calculation (deviation ≤ 10 %)
			WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum 6 Indicator PCBs	WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum 6 Indicator PCBs		WHO-PCDD/F-PCB-TEQ	WHO-PCDD/F-TEQ	WHO-PCB-TEQ	Sum 6 Indicator PCBs	
70	A	2601-OL	0	14	0	0	0	0	0	0	yes	0	0	0	0	yes
71	A	2601-OL				13				13	no				0	yes
72	A	2601-OL				0				0	yes				0	yes
73	A	2601-OL	0	9	0	0	0	0	0	0	yes	0	0	0	0	yes
74	A	2601-OL	0	4	0	0	0	0	0	0	yes	0	0	0	0	yes
75	A	2601-OL	1	24	0	0	0	-1	0	0	yes	0	1	0	8	yes
76	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
77	A	2601-OL		12		0		0		0	yes		-14		0	yes
78	A	2601-OL	0	4	0		-1	0	-1		yes	-1	-1	-1		yes
79	A	2601-OL	0	3	0	0	0	-2	0	0	yes	0	-1	0	0	yes
80	A	2601-OL				0				0	yes				0	yes
81	A	2601-OL	1	37	0	0	0	0	0	0	yes	0	0	0	0	yes
82	A	2601-OL														
83	A	2601-OL	0	1	0	0	0	0	0	0	yes	0	0	0	0	yes
84	A	2601-OL	0	7	0	0	0	0	0	0	yes	0	-8	0	0	yes
85	A	2601-OL	0	1	0	0	0	0	0	-1	yes	0	-1	0	-1	yes
86	A	2601-OL	0	4	0	0	0	0	0	0	yes	0	0	0	0	yes
87	A	2601-OL				0				0	yes				0	yes
88		2601-OL														
89	A	2601-OL				0				0	yes				0	yes
90	A	2601-OL	2	9	0		0	1	0		yes	-1	-9	0		yes
91	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
92	A	2601-OL	0	13	0	0	0	0	0	0	yes	0	0	-1	0	yes
93	A	2601-OL	0	18	0	0	0	0	0	0	yes	0	0	0	0	yes
94		2601-OL														
95	A	2601-OL	0	5	0	0	0	0	0	0	yes	0	0	0	0	yes
96	A	2601-OL	0	14	0	0	0	0	0	0	yes	0	0	0	0	yes
97		2601-OL														
98	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
99	A	2601-OL					0	0	0	0	yes					
100	A	2601-OL	0	34	0	0	-25	1	-25	0	yes	-24	1	-25	0	yes
101	A	2601-OL														
102	A	2601-OL				0				0	yes				0	yes
103	A	2601-OL				0				0	yes				0	yes
104	A	2601-OL	1	26	0	0	0	0	0	-2	yes	0	0	0	-2	yes
105	A	2601-OL	0	0	0	0	0	0	0	0	yes	0	0	0	0	yes
106	A	2601-OL	1	26	0	0	0	0	0	0	yes	0	0	0	0	yes
107	A	2601-OL	0	18	0		-1	0	-1		yes	0	0	-1		yes
108	A	2601-OL	0	31	0	0	0	0	0	0	yes	0	0	0	0	yes
109	A	2601-OL	0	9	0	0	0	0	0	-18	yes	0	0	0	-18	yes
Additional sets																
24	B	2601-OL	7	13				0			yes		-1			yes
78	B	2601-OL	0	2	0		1	-1	1		yes	1	0	1		yes
81	B	2601-OL				0				0	yes				0	yes
82	B	2601-OL														
Modification																
18*		2601-OL	0	0				0			yes		0			yes
24*		2601-OL	0		0				3		yes			3		yes
31*		2601-OL				0				0	yes				0	yes
62*		2601-OL		8				0			yes		0			yes

Olive oil (2601-OL)

PCDD/F - Results

LC	Data set	Sample	Result pg/g fat	WHO-PCDD/F-TEQ reported		WHO-PCDD/F-TEQ calculated																			
				upper bound	lower bound	upper bound	lower bound	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	
1	A	2601-OL		1.03	0.491	1.03	0.491	<0.0416	<0.477	0.047	0.115	0.054	0.387	0.952	1.53	0.462	0.844	0.311	0.143	<0.0756	<0.0818	<0.167	<0.0396	0.209	
2		2601-OL																							
3	A	2601-OL		0.752	0.746	0.752	0.746	0.06	0.098	0.062	0.168	0.081	0.467	0.941	1.86	0.434	0.943	0.338	0.169	0.17	<0.045	0.273	<0.08	0.288	
4	A	2601-OL																							
5	A	2601-OL		0.72	0.66	0.717	0.659	<0.05	0.1	0.06	0.15	0.068	0.47	0.89	1.7	0.44	0.93	0.29	0.19	0.14	<0.05	0.25	<0.2	<0.5	
6	A	2601-OL		0.66	0.64	0.663	0.636	0.041	0.081	0.071	0.15	<0.05	0.44	<2	1.62	0.41	0.84	0.28	0.173	0.134	<0.2	0.226	<0.1	<2	
7	A	2601-OL		0.6	0.598	0.6	0.598	0.036	0.074	0.0624	0.137	0.0555	0.382	0.739	1.43	0.385	0.831	0.258	0.159	0.11	<0.0211	0.203	<0.0185	0.187	
8	A	2601-OL		0.649	0.588	0.644	0.588	<0.05	0.085	<0.06	0.126	0.05	0.361	0.822	1.61	0.343	0.843	0.26	0.116	0.12	0.037	0.414	<0.03	0.215	
9	A	2601-OL		0.614	0.563	0.614	0.563	<0.05	0.08	0.056	0.106	0.076	0.34	0.624	1.37	0.565	0.792	0.254	0.153	0.146	0.054	0.364	<0.05	0.121	
10	A	2601-OL		0.601	0.543	0.602	0.544	<0.05	0.086	0.071	0.142	0.062	0.327	0.736	1.24	0.322	0.644	0.222	0.12	0.644	<0.05	<0.2	0.147	<2	
11	A	2601-OL		0.705	0.705	0.705	0.705	0.035	0.186	0.072	0.15	0.074	0.391	0.687	1.35	0.316	0.764	0.233	0.175	0.262	0.07	0.23	0.055	0.421	
12	A	2601-OL		0.635	0.594	0.635	0.594	<0.0395	0.0861	0.0549	0.154	0.0489	0.409	0.81	1.64	0.468	0.794	0.311	0.158	0.121	<0.0185	0.224	<0.027	0.15	
13	A	2601-OL		0.621	0.505	0.621	0.505	<0.05	<0.05	<0.05	0.06	<0.05	0.34	0.7	2.18	0.29	0.74	0.21	0.11	0.13	<0.05	0.17	<0.05	0.2	
14	A	2601-OL		0.732	0.729	0.737	0.73	0.0268	0.113	0.0508	0.106	0.0639	0.407	0.845	1.89	0.471	0.98	0.308	0.18	0.155	<0.07	0.204	<0.0731	0.146	
15	A	2601-OL		0.716	0.621	0.66	0.623	0.07	<0.03	0.07	0.17	<0.06	0.4	0.74	1.8	0.4	0.9	0.32	0.14	0.14	<0.01	0.27	<0.01	0.15	
16	A	2601-OL		0.682	0.682	0.682	0.682	0.035	0.102	0.0575	0.149	0.0665	0.467	0.861	1.72	0.41	0.87	0.311	0.176	0.141	0.0195	0.242	0.012	0.238	
17	A	2601-OL		0.585	0.525	0.584	0.525	<0.03	0.105	<0.07	0.106	<0.08	0.401	0.668	1.33	0.303	0.715	0.249	0.127	<0.12	0.084	0.22	<0.27	<0.33	
18	A	2601-OL																							
19	A	2601-OL																							
20	A	2601-OL		0.642	0.642	0.643	0.642	0.052	0.093	0.064	0.114	0.067	0.437	1.03	1.61	0.407	0.766	0.296	0.154	0.138	0.039	0.228	<0.05	0.301	
21	A	2601-OL		0.65	0.53	0.65	0.528	<0.097	0.0787	<0.0863	0.125	<0.0803	0.351	0.793	1.66	0.341	0.703	0.223	0.119	0.1	<0.076	0.183	<0.0617	0.241	
22	A	2601-OL		0.665	0.663	0.665	0.663	0.042	0.1	0.0576	0.159	0.067	0.398	0.821	1.57	0.412	0.855	0.285	0.173	0.142	<0.02	0.234	0.0305	0.231	
23	A	2601-OL																							
24	A	2601-OL		0.65	0.63	0.651	0.624	<0.024	0.12	0.077	0.1	0.049	0.43	0.92	1.5	0.36	0.85	0.27	0.14	0.17	<0.032	0.26	0.033	0.31	
25	A	2601-OL																							
26	A	2601-OL		0.256	0.243	0.256	0.243	<0.00408	<0.00616	<0.00597	<0.00573	<0.00503	0.219	0.424	0.86	0.184	0.4	0.141	0.074	0.0741	<0.00504	<0.0228	<0.0248	0.108	
27	A	2601-OL		0.68	0.68	0.686	0.686	0.043	0.089	0.064	0.16	0.072	0.47	1.08	1.76	0.41	0.89	0.3	0.15	0.14	0.021	0.22	0.024	0.25	
28	A	2601-OL		0.648	0.635	0.648	0.635	0.0349	0.0901	0.0639	0.137	<0.0695	0.423	0.848	1.63	0.405	0.829	0.289	0.169	0.135	<0.0567	0.22	<0.0225	0.204	
29	A	2601-OL																							
30	A	2601-OL																							
31	A	2601-OL																							
32	A	2601-OL		0.637	0.61	0.634	0.609	<0.025	0.106	0.06	0.135	0.055	0.404	0.83	1.67	0.43	0.775	0.283	0.164	0.127	0.018	0.238	<0.016	0.145	
33	A	2601-OL		0.673	0.613	0.674	0.613	<0.055	0.074	0.071	0.136	0.051	0.421	0.865	1.64	0.415	0.89	0.268	0.193	0.171	<0.053	0.229	<0.027	0.22	
34	A	2601-OL																							
35	A	2601-OL		0.708	0.663	0.708	0.663	<0.039	0.121	0.065	0.138	0.064	0.377	0.828	1.82	0.411	0.842	0.305	0.162	0.147	<0.064	0.22	0.026	0.195	
36	A	2601-OL																							
37	A	2601-OL		0.59	0.544	0.59	0.546	<0.0328	0.0562	<0.0444	<0.0436	0.0696	0.419	0.852	1.58	0.397	0.843	0.274	0.136	0.124	<0.0217	0.204	<0.0241	0.2	
38	A	2601-OL		0.64	0.64	0.637	0.633	0.042	0.094	0.05	0.13	0.046	0.42	0.82	1.6	0.43	0.8	0.27	0.16	0.12	<0.031	0.23	<0.063	0.16	
39	A	2601-OL		0.64	0.55	0.65	0.65	0.019	0.098	0.17	0.14	0.042	0.32	0.82	1.5	0.34	0.94	0.2	0.15	0.12	0.028	0.23	0.034	0.24	
40	A	2601-OL		0.632	0.594	0.632	0.594	<0.017	0.105	<0.067	0.154	<0.069	0.479	1.24	1.7	0.419	0.744	0.284	0.167	0.144	<0.062	0.328	<0.089	0.228	
41	A	2601-OL																							
42	A	2601-OL		</																					

Olive oil (2601-OL)

PCDD/F - Results

LC	Data set	Sample	Result pg/g fat	WHO-PCDD/F-TEQ reported		WHO-PCDD/F-TEQ calculated																			
				upper bound	lower bound	upper bound	lower bound	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	
70	A	2601-OL		0.623	0.538	0.623	0.538	0.0428	<0.0848	0.0343	0.11	0.0606	0.411	0.635	1.61	0.368	0.819	0.207	0.133	0.138	0.0281	0.187	0.0321	0.146	
71	A	2601-OL																							
72	A	2601-OL																							
73	A	2601-OL		0.639	0.581	0.638	0.581	<0.05	0.089	0.07	0.145	0.066	0.376	<1	1.54	0.391	0.779	0.259	0.165	0.157	<0.05	0.229	<0.2	<0.5	
74	A	2601-OL		0.609	0.586	0.609	0.586	<0.02	0.095	0.06	0.15	0.06	0.39	0.9	1.56	0.43	0.77	0.28	0.16	0.13	<0.03	0.24	<0.03	0.18	
75	A	2601-OL		0.71	0.54	0.714	0.537	<0.08	<0.08	0.21	0.24	0.24	0.39	0.64	1.37	0.32	0.86	0.2	<0.08	0.36	<0.08	0.34	<0.08	0.34	
76	A	2601-OL		0.703	0.703	0.704	0.704	0.0438	0.0957	0.0554	0.148	0.0659	0.433	0.926	1.74	0.545	0.907	0.316	0.172	0.149	0.035	0.254	0.0335	0.212	
77	A	2601-OL		0.694	0.613	0.696	0.696	0.05	0.07	0.1	0.144	0.1	0.396	1.15	1.76	0.464	0.911	0.363	0.124	0.121	0.1	0.243	0.1	0.321	
78	A	2601-OL		0.54	0.52	0.54	0.527	0.029	0.049	<0.07	0.13	<0.03	0.44	0.85	1.5	0.33	0.71	0.26	0.16	0.14	<0.03	0.22	<0.05	0.2	
79	A	2601-OL		0.64	0.62	0.65	0.629	0.04	0.09	0.11	0.14	<0.1	0.61	1.14	1.27	0.42	0.88	0.26	0.17	0.18	<0.1	0.3	<0.1	0.31	
80	A	2601-OL																							
81	A	2601-OL		0.868	0.547	0.868	0.547	<0.08	<0.18	<0.13	<0.15	<0.13	0.534	0.85	1.85	0.59	0.966	0.213	0.254	<0.09	<0.1	0.247	<0.1	<0.23	
82	A	2601-OL																							
83	A	2601-OL		0.668	0.664	0.668	0.665	0.04	0.129	0.071	0.122	0.046	0.41	0.805	1.6	0.396	0.784	0.261	0.178	0.138	<0.03	0.232	0.024	0.208	
84	A	2601-OL		0.735	0.68	0.735	0.735	0.05	0.087	0.063	0.164	0.087	0.396	0.829	1.81	0.449	0.978	0.307	0.177	0.178	0.05	0.265	0.05	0.245	
85	A	2601-OL		0.68	0.676	0.68	0.68	0.066	0.101	0.02	0.134	0.051	0.378	0.821	1.61	0.403	0.858	0.249	0.148	0.137	0.02	0.203	0.02	0.135	
86	A	2601-OL		0.596	0.572	0.596	0.572	<0.02	0.09	0.06	0.15	0.07	0.4	0.97	1.57	0.42	0.74	0.27	0.16	0.13	<0.03	0.24	<0.03	<0.2	
87	A	2601-OL																							
88		2601-OL																							
89	A	2601-OL																							
90	A	2601-OL		0.76	0.69	0.754	0.754	0.05	0.07	0.05	0.05	0.05	0.4	0.59	1.81	0.48	1.12	0.45	0.14	0.13	0.05	0.57	0.07	0.34	
91	A	2601-OL		0.86	0.86	0.859	0.859	0.046	0.136	0.255	0.395	0.246	0.482	0.907	1.91	0.493	0.9	0.291	0.25	0.253	0.237	0.262	0.085	0.293	
92	A	2601-OL		0.735	0.637	0.735	0.636	0.047	<0.062	<0.14	0.194	<0.144	0.446	1.19	1.95	0.574	0.9	0.378	0.214	0.202	<0.071	0.331	<0.072	0.461	
93	A	2601-OL		0.686	0.563	0.686	0.563	<0.02	<0.087	<0.051	0.238	<0.048	0.501	1.03	1.38	0.436	0.906	0.414	0.325	0.332	<0.056	0.321	0.076	0.414	
94		2601-OL																							
95	A	2601-OL		0.626	0.592	0.626	0.592	<0.03	0.054	0.058	0.126	0.065	0.409	0.985	1.84	0.405	0.838	0.292	0.182	0.115	<0.03	0.242	<0.04	0.099	
96	A	2601-OL		0.551	0.475	0.551	0.475	<0.0342	<0.0316	<0.0739	0.116	0.048	0.378	<0.83	1.56	0.38	0.787	0.234	0.14	0.116	<0.0254	0.203	<0.0213	0.188	
97		2601-OL																							
98	A	2601-OL		0.831	0.831	0.831	0.831	0.0498	0.332	0.12	0.126	0.11	0.475	1.29	1.42	0.296	0.694	0.246	0.0864	0.0897	0.0299	0.319	0.0731	0.226	
99	A	2601-OL		0.71		0.71	0.659	<0.05	0.076	0.105	0.11	0.067	0.46	1.11	1.84	0.49	0.95	0.256	0.158	0.148	0.073	0.26	<0.05	0.315	
100	A	2601-OL		0.83	0.55	0.822	0.547	<0.026	<0.215	<0.127	0.13	<0.13	0.46	0.87	1.84	0.44	0.89	0.3	0.19	0.13	<0.077	0.27	0.03	0.23	
101	A	2601-OL																							
102	A	2601-OL																							
103	A	2601-OL																							
104	A	2601-OL		0.639	0.47	0.639	0.47	<0.06	<0.08	0.3	<0.1	<0.1	0.3	0.5	1.5	0.3	0.8	0.2	0.08	0.08	<0.08	0.2	<0.1	<0.03	
105	A	2601-OL		0.612	0.612	0.612	0.612	0.0394	0.0985	0.064	0.153	0.0739	0.453	0.837	1.36	0.34	0.763	0.286	0.162	0.148	0.0148	0.335	0.064	0.384	
106	A	2601-OL		0.84	0.62	0.836	0.622	<0.07	0.11	<0.33	<0.33	<0.33	0.5	<9.5	1.6	0.43	0.9	0.29	0.18	0.17	<0.33	<0.33	<0.33	<9.5	
107	A	2601-OL		0.867	0.711	0.867	0.71	0.13	<0.157	0.103	0.209	0.118	0.519	1.09	1.58	0.538	0.889	0.308	0.243	0.215	0.097	0.351	0.096	<0.255	
108	A	2601-OL		0.762	0.528	0.762	0.527	<0.05	<0.08	<0.1	<0.2	<0.1	<0.7	<1.1	1.78	0.44	0.92	0.36	0.24	<0.3	<0.2	<0.5	<0.2	<0.8	
109	A	2601-OL		0.847	0.772	0.847	0.772	<0.0259	<0.0313	<0.0446	<0.0418	<0.0418	0.58	2.14	1.86	0.55	1.12	1.58	0.37	0.29	<0.0443	0.3	<0.0291	<0.106	
Additional sets																									
24	B	2601-OL		0.69	0.6	0.693	0.607	<0.05	0.12	<0.11	0.1	<0.12	<0.8	0.92	1.5	0.36	0.85	0.27	0.14	0.17	<0.05	0.26	<0.037	0.31	
78	B	2601-OL		0.53	0.52	0.536	0.521	0.029	0.063	<0.07	0.12	<0.04	0.4	0.82	1.5	0.32	0.67	0.27	0.13	0.1	<0.03	0.21	<0.07	0.16	
81	B	2601-OL																							
82	B	2601-OL																							
Modification																									
18*		2601-OL		0.638	0.638	0.639	0.639	0.024	0.075	0.061	0.194	0.057	0.432	0.888	1.6	0.444	0.9	0.279	0.167	0.116	0.016	0.225	0.067	0.149	
24*		2601-OL																							
31*		2601-OL																							
62*		2601-OL		0.583	0.539	0.583	0.539	<0.0398	0.0838	0.0604	0.116	0.0615	0.373	0.767	1.43	0.343	0.733	0.249	0.144	0.123	<0.0398	0.217	<0.0398	0.204	

Olive oil (2601-OL)
Dioxin-like PCB - Results

LC	Data set	Sample	Result pg/g fat	WHO-PCB-TEQ reported		WHO-PCB-TEQ calculated		PCB 105	PCB 114	PCB 118	PCB 123	PCB 156	PCB 157	PCB 167	PCB 189	PCB 77	PCB 81	PCB 126	PCB 169
				upper bound	lower bound	upper bound	lower bound												
1	A	2601-OL		39.3	39.3	39.3	39.3	287	<34.2	411	<39.8	4430	2290	3280	2290	213	11	4.81	1280
2		2601-OL																	
3	A	2601-OL		36.8	36.8	37	37	299	26.6	430	16.2	4260	2200	3140	2240	221	11.8	5.76	1200
4	A	2601-OL																	
5	A	2601-OL		37.7	37.7	36.9	36.9	299	26.2	408	15.7	4820	2280	3450	2440	197	11	4.9	1200
6	A	2601-OL		36	36	36.3	36.3	310	31.7	410	16.8	4300	2060	3400	2410	188	9.6	4.6	1180
7	A	2601-OL		39.4	39.4	39.3	39.3	298	27.1	416	17.2	4660	2270	3480	2350	208	9.83	4.91	1280
8	A	2601-OL		39.3	39.3	39.4	39.4	298	25.2	438	21.4	4490	2210	3430	2420	226	10.9	5.4	1280
9	A	2601-OL																	
10	A	2601-OL		37	37	37	37	285	30.6	398	17.5	4170	2130	3230	2230	195	<10	5.83	1200
11	A	2601-OL		34.6	34.6	34.8	34.8	248	17.8	416	6.5	3960	2010	3240	2140	204	10.7	4.8	1130
12	A	2601-OL		33.2	33.2	33.2	33.2	293	23.1	421	15.6	4210	2190	3320	2300	189	9.77	10	1060
13	A	2601-OL		37.1	37.1	37.1	37.1	338	42.8	526	23.8	5030	2740	3960	2680	219	11.6	6.12	1200
14	A	2601-OL		43	43	42.9	42.9	289	30.9	467	18.3	5000	2380	3250	2420	232	12.9	5.03	1400
15	A	2601-OL		28.2	28.2	28.2	28.2	208	18.6	290	11.7	3250	1710	2470	1740	143	7.34	3.33	918
16	A	2601-OL		37.9	37.9	37.9	37.9	324	26.5	453	19.7	4290	2040	2530	2280	206	9.89	6.14	1230
17	A	2601-OL		42	42	41.9	41.9	256	21.6	350	6.79	4880	2440	3780	2620	187	2.99	6.48	1360
18	A	2601-OL		35	35	35	35	282	23.5	369	15.6	4180	1950	3210	2270	199	9.9	4.29	1140
19	A	2601-OL																	
20	A	2601-OL		37.9	37.9	38.1	38.1	304	35.5	423	15.5	4120	2170	3400	2320	218	10.4	4.59	1240
21	A	2601-OL		34	34	34.1	34.1	304	28.6	430	13.4	4170	2220	3580	2360	187	9.86	4.3	1110
22	A	2601-OL		36.7	36.7	36.5	36.5	285	22.6	384	5.42	4310	2060	3100	2290	215	9.94	4.36	1190
23	A	2601-OL																	
24	A	2601-OL		0.84	0.83	0.84	0.834	300	19	330	12	4300	2000	3200	2200	200	10	4.4	<0.2
25	A	2601-OL																	
26	A	2601-OL		35.8	35.8	35.9	35.9	249	22.2	336	13.3	3490	1850	2700	1960	189	9.86	4.54	1170
27	A	2601-OL		40	40	40	40	313	26.2	418	15.4	4510	2200	3330	2370	206	11.3	5.54	1300
28	A	2601-OL		38.2	38.2	38.3	38.3	307	27	425	12	4270	2340	3310	2300	212	11.8	4.21	1250
29	A	2601-OL																	
30	A	2601-OL																	
31	A	2601-OL																	
32	A	2601-OL		36.2	36.2	36.2	36.2	291	27.3	392	15.3	3950	2050	3160	2300	203	10.1	4.43	1180
33	A	2601-OL		38.9	38.9	38.8	38.8	312	29.8	418	15.7	4270	2220	3420	2180	229	9.86	5.43	1260
34	A	2601-OL																	
35	A	2601-OL		37.9	37.9	38	38	281	23.3	389	16.1	4240	2140	3280	2270	187	9.7	4.02	1240
36	A	2601-OL																	
37	A	2601-OL		35.8	35.8	35.9	35.9	263	<32.2	387	<29.5	4110	2190	3290	2320	194	9.59	4.42	1170
38	A	2601-OL		38	38	38.4	38.4	313	27	442	17	4780	2440	3420	2540	183	10	5	1250
39	A	2601-OL		36.5	36.5	36.4	36.4	354	33.3	534	20.7	4000	2060	3100	2900	380	17.6	5.5	1180
40	A	2601-OL		36.5	36.5	36.6	36.6	328	27.2	441	11.2	4330	2210	3420	2480	210	10.4	4.71	1190
41	A	2601-OL																	
42	A	2601-OL		36	36	36	36	266	35.2	408	17.2	4060	2040	3180	2150	195	10.9	5.28	1170
43	A	2601-OL		38	38	37.9	37.9	416	62.6	631	23.8	8960	2450	16200	2290	246	12.5	6.1	1210
44	A	2601-OL		36.4	36.4	36.4	36.4	305	30.4	468	15.2	4510	2270	3530	2320	202	9.95	6.06	1180
45	A	2601-OL																	
46	A	2601-OL																	
47	A	2601-OL		37.7	37.7	37.6	37.6	305	28.9	443	20.2	4150	1950	3530	2360	213	11.4	14.8	1190
48	A	2601-OL																	
49	A	2601-OL																	
50	A	2601-OL		34.8	34.8	34.8	34.8	251	26.2	398	17.7	4430	2230	3400	2490	197	9.95	4.54	1130
51	A	2601-OL		36.8	36.8	36.9	36.9	284	32	405	15.5	4280	2520	3650	2580	196	11	4.9	1200
52	A	2601-OL		41.3	41.3	41.4	41.4	295	34	411	22.5	4350	2210	3480	2350	213	12	4.64	1350
53	A	2601-OL																	
54	A	2601-OL																	
55	A	2601-OL																	
56	A	2601-OL		37.7	37.7	37.8	37.8	282	28.2	383	14.3	3980	2120	3700	2450	205	9.48	4.76	1230
57	A	2601-OL		44.2	44.2	44.2	44.2	306	33	508	14.4	4530	2430	3680	2560	217	11.6	5.18	1440
58	A	2601-OL																	
59	A	2601-OL		37.3	37.3	37.3	37.3	278	24.8	385	14.2	4450	2300	3310	2240	212	10.4	5.78	1210
60	A	2601-OL		38	38	37.9	37.9	310	26.9	417	16.2	4740	2480	3760	2250	208	9.09	5.91	1230
61	A	2601-OL		39.4	39.4	39.3	39.3	310	30.7	455	92.2	4180	2060	3540	2300	249	15.7	28.4	1200
62	A	2601-OL		41.1	41.1	41.1	41.1	305	28.7	413	16.1	5170	2490	3890	2630	211	10.1	4.6	1340
63	A	2601-OL		30.4	30.4	30.4	30.4	302	28.1	409	16.4	4610	2300	3660	2690	177	8.28	4.26	985
64	A	2601-OL																	
65	A	2601-OL																	
66		2601-OL																	
67	A	2601-OL		38	38.1	38	37.9	290	14.2	376	5.07	4240	2250	3450	2400	172	3.75	<0.797	1250

Olive oil (2601-OL)
Dioxin-like PCB - Results

LC	Data set	Sample	Result pg/g fat	WHO-PCB-TEQ reported		WHO-PCB-TEQ calculated		PCB 105	PCB 114	PCB 118	PCB 123	PCB 156	PCB 157	PCB 167	PCB 189	PCB 77	PCB 81	PCB 126	PCB 169	
				upper bound	lower bound	upper bound	lower bound													
68	A	2601-OL		38.3	38.3	38.4	38.4	290	26	416	16.1	4170	2140	3460	2440	217	10.8	4.96	1250	
69	A	2601-OL		32.1	32.1	32	32	250	25	346	12	3730	1920	2870	2210	174	8.4	4.2	1040	
70	A	2601-OL		37.1	37.1	37.2	37.2	307	28	421	14.6	4520	2180	3380	2200	218	10.4	4.63	1210	
71	A	2601-OL																		
72	A	2601-OL																		
73	A	2601-OL		36	35.9	36	36	286	29.8	382	15.2	4060	2140	3080	2320	191	8.95	4.76	1170	
74	A	2601-OL		37.1	37.1	37.2	37.2	302	28	394	16	4180	2100	3380	2330	214	11	5.1	1210	
75	A	2601-OL		34.4	34.4	34.5	34.5	462	47.7	555	65.7	5230	2120	3370	2400	154	7.2	4.56	1120	
76	A	2601-OL		37.6	37.6	37.6	37.6	302	29.4	415	17.8	4380	2400	3600	2400	202	10.5	5.37	1220	
77	A	2601-OL																		
78	A	2601-OL		39	39	39.4	39.4	320	33	490	13	4630	2170	3780	2550	210	11	5.3	1280	
79	A	2601-OL		36.3	36.3	36.3	36.3	291	27.8	382	13.7	4030	2180	3000	2180	191	9.81	8.57	1170	
80	A	2601-OL																		
81	A	2601-OL		40.7	40.7	40.8	40.8	292	25.5	415	15.8	4120	2130	3190	2280	225	11.1	4.99	1330	
82	A	2601-OL																		
83	A	2601-OL		41.1	41.1	41.1	41.1	341	28.1	402	15.4	4620	2210	3410	2380	212	11.8	5.11	1340	
84	A	2601-OL		22.6	22.6	22.6	22.6	325	31.5	438	17	4740	2430	3750	2610	188	10.9	4.72	723	
85	A	2601-OL		23.9	23.9	23.9	23.9	242	24.6	348	14.5	1960	640	2170	2310	82.5	10.4	5.5	770	
86	A	2601-OL		36.7	36.7	36.7	36.7	305	26	396	16	4070	2100	3300	2360	211	10.7	5.5	1190	
87	A	2601-OL																		
88		2601-OL																		
89	A	2601-OL																		
90	A	2601-OL		3.9	3.9	3.9	3.9	1140	437	4800	1060	729	793	621	242	75.8	45.6	20.4	51.5	
91	A	2601-OL		3.63	3.63	3.63	3.63	52.4	2.69	40.1	2.08	431	219	322	233	21	1.28	0.53	118	
92	A	2601-OL		39.8	39.7	39.9	39.9	310	53.2	431	40.4	4310	2130	3230	2290	236	10.7	4.71	1300	
93	A	2601-OL		34.1	34.1	34.2	34.2	264	25.2	404	15.5	4340	2300	3450	2260	197	8.92	4.85	1110	
94		2601-OL																		
95	A	2601-OL		44.5	44.5	44.5	44.5	346	30	450	23.2	4960	2630	4030	1600	249	12	5.58	1450	
96	A	2601-OL		25.7	25.7	25.7	25.7	308	27.2	480	20.6	4340	2140	3320	2320	173	8.8	3.89	830	
97		2601-OL																		
98	A	2601-OL		27.6	27.6	27.6	27.6	292	18.8	398	14.9	4130	1510	3060	1810	171	9.5	3.29	898	
99	A	2601-OL		39		39	39	318	29.2	420	12.7	4300	2180	3390	2460	230	11.4	4.8	1270	
100	A	2601-OL		40.7	40.7	50.9	50.9	329	28.9	468	18.2	4560	2560	339000	2680	219	10.2	5.01	1330	
101	A	2601-OL																		
102	A	2601-OL																		
103	A	2601-OL																		
104	A	2601-OL		37.2	37.2	37.2	37.2	300	<60	430	<150	4240	2280	3210	2360	220	10	5	1210	
105	A	2601-OL		39.6	39.6	39.6	39.6	308	31.3	455	18.7	4450	2260	3530	2170	221	11.6	7.97	1280	
106	A	2601-OL		37.7	37.6	37.7	37.7	284	<55	400	<55	4060	2240	3130	2200	<250	12	6.91	1220	
107	A	2601-OL		35.3	35.3	35.5	35.5	258	43.8	458	56.1	4530	2290	3990	2370	217	30.3	5.11	1150	
108	A	2601-OL		39.7	39.6	39.6	39.6	309	<30	485	<30	4580	2270	3510	2540	235	<13	4.31	1290	
109	A	2601-OL		36.4	36.4	36.5	36.5	326	23	519	21.6	3990	2030	1150	2070	270	13.8	5.1	1190	
Additional sets																				
24	B	2601-OL																		
78	B	2601-OL		40	40	39.6	39.6	340	31	470	16	4540	2180	3590	2500	220	11	5	1290	
81	B	2601-OL																		
82	B	2601-OL																		
Modification																				
18*		2601-OL																		
24*		2601-OL		35	35	33.8	33.8	300	19	330	12	4300	2000	3200	2200	200	10	4.4	1100	
31*		2601-OL																		
62*		2601-OL																		

Olive oil (2601-OL)
Non dioxin-like PCB - Results

LC	Data set	Sample	Result ng/g fat	Sum 6 Indicator PCBs reported		Sum 6 Indicator PCBs calculated		PCB 28	PCB 52	PCB 101	PCB 138	PCB 153	PCB 180
				upper bound	lower bound	upper bound	lower bound						
1	A	2601-OL		22.3	22.3	22.3	22.3	8.17	1.69	2.52	3.94	2.18	3.77
2		2601-OL											
3	A	2601-OL		21	21	21	21	6.77	1.74	2.39	3.8	2.33	4.01
4	A	2601-OL		21.9	21.9	22	22	7.48	1.84	2.57	4.14	2.1	3.82
5	A	2601-OL		23	23	23	23	7.7	1.68	2.38	4.41	2.44	4.4
6	A	2601-OL		25.4	25.4	25.4	25.4	9.4	1.99	2.7	4.5	2.36	4.4
7	A	2601-OL		23	23	23	23	7.6	1.87	2.43	4.38	2.19	4.48
8	A	2601-OL											
9	A	2601-OL		26.8	26.8	26.7	26.7	10.2	2.11	3	4.7	2.62	4.11
10	A	2601-OL		24	24	24	24	8.15	1.69	2.69	4.61	2.43	4.46
11	A	2601-OL		20.5	20.5	20.5	20.5	6.69	1.88	2.25	2.11	3.79	3.77
12	A	2601-OL		22.6	22.6	22.6	22.6	7.13	1.94	2.59	4.53	2.21	4.18
13	A	2601-OL		25.3	25.3	25.3	25.3	8.13	2.11	2.89	4.7	2.65	4.83
14	A	2601-OL		28.1	28.1	28.1	28.1	12.1	2.02	2.7	4.55	2.81	3.94
15	A	2601-OL		24.7	24.7	24.7	24.7	10	1.83	2.56	3.58	2.33	4.38
16	A	2601-OL		30.9	30.9	30.9	30.9	12.6	2.12	3.28	5.13	2.64	5.1
17	A	2601-OL		24.9	24.9	24.9	24.9	9.73	1.86	2.48	4.27	2.13	4.42
18	A	2601-OL		22.6	22.6	22.6	22.6	7.58	1.92	2.44	4.28	2.24	4.12
19	A	2601-OL		26.2	26.2	26.2	26.2	9.19	2.12	2.82	4.77	2.56	4.69
20	A	2601-OL		23.6	23.6	23.6	23.6	7.75	1.89	2.62	4.43	2.2	4.67
21	A	2601-OL		24.5	24.5	25400	25400	8290	2110	3050	5430	2190	4360
22	A	2601-OL		22.8	22.8	22.8	22.8	6.8	1.8	2.63	4.5	2.4	4.68
23	A	2601-OL		23.7	23.7	23.8	23.8	8.44	1.85	2.53	4.39	2.38	4.17
24	A	2601-OL		22	22	22	22	7.5	1.8	2.5	4.3	2	3.9
25	A	2601-OL		25.9	25.9	25.8	25.8	9.16	2.05	2.86	4.59	2.43	4.74
26	A	2601-OL		24.4	24.4	24.4	24.4	8.74	2.26	2.69	4.65	2.44	3.57
27	A	2601-OL		22.3	22.3	22.3	22.3	7.81	1.97	2.41	4.03	2.01	4.08
28	A	2601-OL		23.5	23.5	23.5	23.5	7.87	1.95	2.72	4.29	2.35	4.33
29	A	2601-OL		24.8	24.8	24.8	24.8	8.84	1.79	2.6	4.64	2.36	4.56
30	A	2601-OL		24.4	24.4	24.4	24.4	8.05	1.93	2.62	4.37	2.27	5.16
31	A	2601-OL		9.28	8.78	9.28	8.78	1.78	2.08	2.32	1.46	1.14	<0.5
32	A	2601-OL		22.9	22.9	22.9	22.9	7.86	1.9	2.5	4.22	2.27	4.14
33	A	2601-OL		23.7	23.7	23.7	23.7	7.65	1.87	2.58	4.62	2.23	4.78
34	A	2601-OL		23.2	23.2	23.2	23.2	7.63	1.71	2.58	4.99	2.23	4.08
35	A	2601-OL		21.1	21.1	21.1	21.1	7.72	1.61	2.33	3.77	2.03	3.61
36	A	2601-OL		24.5	24.5	24.6	24.6	8.67	1.89	2.64	4.5	2.47	4.39
37	A	2601-OL		22.6	22.6	22.6	22.6	8.18	1.8	2.37	4.2	2.13	3.92
38	A	2601-OL		25	25	24.9	24.9	8.1	2.1	2.8	4.7	2.5	4.7
39	A	2601-OL		28.2	28.2	28.2	28.2	10	2.5	3.5	5.5	2.3	4.4
40	A	2601-OL		21	21	21	21	5.14	2.01	2.76	4.41	2.34	4.38
41	A	2601-OL		24.5	24.5	24.5	24.5	8.41	1.66	2.7	4.5	3.11	4.12
42	A	2601-OL		27.7	27.7	27.7	27.7	12.3	1.9	2.69	4.39	2.27	4.17
43	A	2601-OL		24.2	24.2	25	25	8.44	2.09	2.72	4.71	2.5	4.58
44	A	2601-OL		21.1	21.1	21.1	21.1	8.31	1.45	1.98	3.74	1.96	3.66
45	A	2601-OL		23.4	23.4	23.4	23.4	8.11	1.58	2.08	5.31	2.26	4.04
46	A	2601-OL		21.3	21.3	21.3	21.3	7.14	1.84	2.23	3.86	2.33	3.9
47	A	2601-OL		22.6	22.6	22.6	22.6	7.35	2.05	2.38	4.45	1.97	4.37
48	A	2601-OL		24.8	24.8	24.8	24.8	8.36	2	2.68	4.49	2.68	4.61
49	A	2601-OL		24.9	24.9	24.9	24.9	8.71	2.02	2.6	4.94	2.17	4.44
50	A	2601-OL		24.6	24.6	24.6	24.6	8.88	1.96	2.61	4.47	2.42	4.27
51	A	2601-OL		24	24	24.3	24.3	10.1	1.6	2.2	4.2	2.2	4
52	A	2601-OL		23.4	23.4	23.4	23.4	8.07	1.97	2.8	4.16	2.32	4.08
53	A	2601-OL		28.6		28.1	28.1	10.5	2	3.1	2.9	5	4.6
54	A	2601-OL		22.9	22.9	22.9	22.9	7.87	1.79	2.54	4.14	2.16	4.36
55	A	2601-OL		22.7	22.7	22.7	22.7	7.91	2.21	2.3	4.09	2.1	4.1
56	A	2601-OL		26.1	26.1	26.1	26.1	9.15	1.77	2.9	4.97	2.63	4.68
57	A	2601-OL		25.2	25.2	25.2	25.2	8.26	1.92	2.92	4.71	2.72	4.65
58	A	2601-OL		23.2	23.2	23.1	23.1	7.7	1.8	2.5	4.3	2.3	4.5
59	A	2601-OL		22.6	22.6	22.6	22.6	7.46	1.87	2.47	4.24	2.18	4.39
60	A	2601-OL		22.9	22.9	22.9	22.9	8.25	1.96	2.44	4.3	2.27	3.67
61	A	2601-OL		20.5	20.5	20.6	20.6	5.7	1.5	2.1	4.1	2.2	5
62	A	2601-OL		27.5	27.5	27.5	27.5	10.3	2.22	2.94	4.81	2.63	4.61
63	A	2601-OL		27	27	26.8	26.8	8.88	2.15	3.23	5.06	2.71	4.76
64	A	2601-OL		22.5	22.5	22.5	22.5	7.75	1.79	2.36	4.37	1.81	4.44
65	A	2601-OL		22.6	22.6	22.6	22.6	7.62	2.02	2.32	4.35	2.22	4.04
66		2601-OL											
67	A	2601-OL		18.4	18.4	18.4	18.4	5.42	1.81	2.48	2.53	1.84	4.28

Olive oil (2601-OL)
Non dioxin-like PCB - Results

LC	Data set	Sample	Result ng/g fat	Sum 6 Indicator PCBs reported		Sum 6 Indicator PCBs calculated		PCB 28	PCB 52	PCB 101	PCB 138	PCB 153	PCB 180	
				upper bound	lower bound	upper bound	lower bound							
68	A	2601-OL		22.6	22.6	22.6	22.6	6.97	1.86	2.6	4.48	2.36	4.31	
69	A	2601-OL		23	23	23.5	23.5	6.9	2	2.8	4.8	2.4	4.6	
70	A	2601-OL		22.7	22.7	22.7	22.7	7.36	2.01	2.6	4.29	2.17	4.24	
71	A	2601-OL		23	20	20	20	6.06	1.65	2.42	2.15	3.79	3.95	
72	A	2601-OL		23.4	23.4	23.4	23.4	7.89	1.9	2.6	4.46	2.2	4.37	
73	A	2601-OL		22.6	22.6	22.6	22.6	7.77	1.73	2.59	4.22	2.22	4.11	
74	A	2601-OL		23.1	23.1	23.1	23.1	7.81	1.85	2.59	4.35	2.34	4.13	
75	A	2601-OL		24.2	24.2	24.2	22.2	9.21	<2	2.75	2.28	2.17	5.81	
76	A	2601-OL		23.8	23.8	23.8	23.8	7.75	1.9	2.62	4.62	2.4	4.49	
77	A	2601-OL		51.9	51.9	51.9	51.9	11	3.57	4.07	7.87	7.34	18	
78	A	2601-OL												
79	A	2601-OL		20.9	20.9	20.9	20.9	6.65	1.63	2.28	4.25	2.26	3.84	
80	A	2601-OL		22.7	22.7	22.7	22.7	8.18	1.81	2.54	4.12	2.16	3.91	
81	A	2601-OL		25.6	25.6	25.6	25.6	8.45	2.22	2.86	4.89	2.65	4.54	
82	A	2601-OL												
83	A	2601-OL		24.1	24.1	24.1	24.1	8.21	2.07	2.52	4.66	2.41	4.23	
84	A	2601-OL		26.3	26.3	26.3	26.3	9.32	2.03	2.78	4.8	2.55	4.77	
85	A	2601-OL		27.7	27.7	27.9	27.9	11.5	1.82	2.12	3.18	4.38	4.91	
86	A	2601-OL		23.1	23.1	23.1	23.1	7.84	1.83	2.64	4.24	2.39	4.14	
87	A	2601-OL		22	22	22	22	6.6	1.73	2.39	4.38	2.25	4.63	
88		2601-OL												
89	A	2601-OL		27.7	27.7	27.7	27.7	11.3	2	2.7	4.6	2.4	4.7	
90	A	2601-OL												
91	A	2601-OL		2.34	2.34	2.34	2.34	0.797	0.188	0.262	0.439	0.243	0.413	
92	A	2601-OL		25.2	25.2	25.2	25.2	9.53	2.14	2.69	4.26	2.28	4.3	
93	A	2601-OL		22.7	22.7	22.7	22.7	8.13	1.86	2.6	3.97	2.21	3.95	
94		2601-OL												
95	A	2601-OL		25.1	25.1	25.1	25.1	8.34	2.02	2.68	4.83	2.56	4.67	
96	A	2601-OL		21.9	21.9	21.9	21.9	7.29	1.83	2.58	4.06	2.27	3.86	
97		2601-OL												
98	A	2601-OL		17	17	17	17	7.29	1.39	2.15	3.96	1.23	0.96	
99	A	2601-OL		26.7		26.7	26.7	12.9	1.89	2.11	3.97	2.11	3.69	
100	A	2601-OL		18.7	18.7	18.7	18.7	4.01	1.39	2.34	4.32	2.59	4	
101	A	2601-OL												
102	A	2601-OL		20.5	20.5	20.5	20.5	8.16	1.34	2.01	3.42	1.81	3.75	
103	A	2601-OL		21.5	21.5	21.5	21.5	8.27	1.09	1.86	3.6	1.74	4.96	
104	A	2601-OL		23.7	23.7	24.1	24.1	9	1.9	2.6	4.3	2.2	4.1	
105	A	2601-OL		25.4	25.4	25.4	25.4	9.15	2.14	2.6	4.68	2.37	4.43	
106	A	2601-OL		23.5	23.5	23.5	23.5	9.21	1.64	2.38	4.28	2.15	3.8	
107	A	2601-OL												
108	A	2601-OL		24.4	24.4	24.4	24.4	7.48	2.17	2.75	5.1	2.57	4.33	
109	A	2601-OL		16.4	16.4	19.4	19.4	5.87	1.99	2.46	3.54	1.95	3.58	
Additional sets														
24	B	2601-OL												
78	B	2601-OL												
81	B	2601-OL		25.6	25.6	25.6	25.6	8.31	2.24	2.78	4.94	2.63	4.67	
82	B	2601-OL												
Modification														
18*		2601-OL												
24*		2601-OL												
31*		2601-OL		19.1	19.1	19.1	19.1	6.59	1.47	1.98	3.62	1.95	3.53	
62*		2601-OL												

LC	Data set	Sample	Result pg BEQ/g fat	Result			Assessment of analytical results				Reporting Limit			Maximum Level			Action Level			Bioassay Cut-off		Bioassay Cut-off			
				PCDD/Fs + DL-PCBs	PCDD/Fs	DL-PCBs	Sample suspected to be noncompliant with ...				PCDD/Fs+ DL-PCBs	PCDD/Fs	DL-PCBs	on which evaluation is based on			on which evaluation is based on			Maximum Level	PCDD/Fs	Action Level	PCDD/Fs+ DL-PCBs	PCDD/Fs	DL-PCBs
							Maximum Level PCDD/Fs+DL-PCBs	Maximum Level PCDD/Fs	Action Level PCDD/Fs	Action Level DL-PCBs					PCDD/Fs+ DL-PCBs	PCDD/Fs	DL-PCBs	PCDD/Fs+ DL-PCBs	PCDD/Fs	DL-PCBs		PCDD/Fs+ DL-PCBs	PCDD/Fs	DL-PCBs	
1	A	2601-OL		4.1			yes	yes	yes	yes		0.5			1.3	0.75			0.5	0.35					
2		2601-OL																							
3	A	2601-OL		2.9	0.7	2.2	yes	yes	no	no		0.4	0.2	0.2	1.3	0.75						1.1	0.7		
4	A	2601-OL																							
5	A	2601-OL																							
6	A	2601-OL																							
7	A	2601-OL																							
8	A	2601-OL																							
9	A	2601-OL																							
10	A	2601-OL																							
11	A	2601-OL																							
12	A	2601-OL																							
13	A	2601-OL																							
14	A	2601-OL																							
15	A	2601-OL																							
16	A	2601-OL																							
17	A	2601-OL																							
18	A	2601-OL																							
19	A	2601-OL																							
20	A	2601-OL																							
21	A	2601-OL																							
22	A	2601-OL																							
23	A	2601-OL																							
24	A	2601-OL																							
25	A	2601-OL																							
26	A	2601-OL																							
27	A	2601-OL																							
28	A	2601-OL																							
29	A	2601-OL																							
30	A	2601-OL																							
31	A	2601-OL																							
32	A	2601-OL			4.6			yes																	
33	A	2601-OL																							
34	A	2601-OL																							
35	A	2601-OL																							
36	A	2601-OL																							
37	A	2601-OL																							
38	A	2601-OL																							
39	A	2601-OL																							
40	A	2601-OL																							
41	A	2601-OL																							
42	A	2601-OL																							
43	A	2601-OL			1.4	0.7	0.8	yes	yes	yes	yes		0.3	0.3	1.3	0.75		0.5	0.5		0.5				
44	A	2601-OL																							
45	A	2601-OL																							
46	A	2601-OL																							
47	A	2601-OL																							
48	A	2601-OL																							
49	A	2601-OL			0.7			no					0.8		1.3							0.83			
50	A	2601-OL																							
51	A	2601-OL																							
52	A	2601-OL																							
53	A	2601-OL																							
54	A	2601-OL																							
55	A	2601-OL																							
56	A	2601-OL																							
57	A	2601-OL																							
58	A	2601-OL																							
59	A	2601-OL																							
60	A	2601-OL																							
61	A	2601-OL																							
62	A	2601-OL																							
63	A	2601-OL																							
64	A	2601-OL																							
65	A	2601-OL																							
66		2601-OL																							
67	A	2601-OL																							
68	A	2601-OL																							
69	A	2601-OL																							
70	A	2601-OL																							
71	A	2601-OL																							
72	A	2601-OL																							
73	A	2601-OL																							

LC	Data set	Sample	Result pg BEQ/g fat	Result			Assessment of analytical results				Reporting Limit			Maximum Level			Action Level			Bioassay Cut-off		Bioassay Cut-off		
				PCDD/Fs + DL-PCBs	PCDD/Fs	DL-PCBs	Sample suspected to be noncompliant with ...				PCDD/Fs+ DL-PCBs	PCDD/Fs	DL-PCBs	on which evaluation is based on			on which evaluation is based on			Maximum Level PCDD/Fs+ DL-PCBs	PCDD/Fs	DL-PCBs	Maximum Level PCDD/Fs+ DL-PCBs	PCDD/Fs
74	A	2601-OL																						
75	A	2601-OL																						
76	A	2601-OL																						
77	A	2601-OL																						
78	A	2601-OL																						
79	A	2601-OL																						
80	A	2601-OL																						
81	A	2601-OL																						
82	A	2601-OL		1.4			yes	yes			0.3			1.3	0.75					0.83	0.5			
83	A	2601-OL																						
84	A	2601-OL																						
85	A	2601-OL																						
86	A	2601-OL																						
87	A	2601-OL																						
88		2601-OL																						
89	A	2601-OL																						
90	A	2601-OL																						
91	A	2601-OL																						
92	A	2601-OL																						
93	A	2601-OL																						
94		2601-OL																						
95	A	2601-OL																						
96	A	2601-OL																						
97		2601-OL																						
98	A	2601-OL																						
99	A	2601-OL																						
100	A	2601-OL																						
101	A	2601-OL		0.8	0.7	0.1					0.2	0.2	0.2	1.3	0.75		0.75	0.5						
102	A	2601-OL																						
103	A	2601-OL																						
104	A	2601-OL																						
105	A	2601-OL																						
106	A	2601-OL		2.4			yes							0.75						0.5				
107	A	2601-OL																						
108	A	2601-OL																						
109	A	2601-OL																						
Additional sets																								
24	B	2601-OL																						
78	B	2601-OL																						
81	B	2601-OL																						
82	B	2601-OL		1.3			yes	yes			0.3			1.3	0.75					0.83	0.5			
Modification																								
18*		2601-OL																						
24*		2601-OL																						
31*		2601-OL																						
62*		2601-OL																						

**EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]**

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

07 August 2026

Annex 3: Participants' z-scores and bioassay-scores of PCDD/Fs and PCBs - Tables**Test sample - Olive oil (2601-OL)****Z-scores of sum parameters and individual results****Calculation of z-score on basis of assigned value**

$$z = (x - x_a) / \sigma_{\text{prel}} \cdot x_a$$

 x_a : assigned value x : participant's result σ_{prel} : relative fitness-for-purpose-based standard deviation for proficiency assessment

10%: WHO-PCDD/F-TEQ, WHO-PCB-TEQ and WHO-PCDD/F-PCB-TEQ

15%: Sum of six indicator PCBs (PCB 28, 52, 101, 138, 153, 180)

20%: Evaluated individual PCDD/F and PCB congeners

Bioassay-scores of BEQ results**Calculation of bioassay-score on basis of assigned value from physical-chemical methods**

$$\text{bioassay-score} = (x - x_a) / \sigma_{\text{BArel}} \cdot x_a$$

 x_a : assigned value (physical-chemical methods) x : participant's result (BEQ from bioanalytical screening method) σ_{BArel} : relative bioassay target deviation

20%: PCDD/F-PCB-BEQ, PCDD/F-BEQ and PCB-BEQ

* Modified/additional results reported after distribution of preliminary results to all participating laboratories

EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

Sum parameters - Z-scores

LC	Data set	Sample	Z-score [σ _p = 10 %]	WHO-PCDD/F-PCB-TEQ reported		WHO-PCDD/F-PCB-TEQ calculated		WHO-PCDD/F-TEQ reported		WHO-PCDD/F-TEQ calculated		WHO-PCB-TEQ reported		WHO-PCB-TEQ calculated		Z-score [σ _p = 15 %]	Sum Indicator PCBs reported		Sum Indicator PCBs calculated		
				upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound		upper bound	lower bound	upper bound	lower bound	
1	A	2601-OL		0.5	0.4	0.5	0.4	5.4	-2.0	5.4	-2.1	0.5	0.5	0.5	0.5		-0.4	-0.3	-0.4	-0.4	
2		2601-OL																			
3	A	2601-OL		-0.2	-0.1	-0.1	-0.1	1.2	2.2	1.2	2.1	-0.2	-0.2	-0.1	-0.1		-0.8	-0.7	-0.7	-0.7	
4	A	2601-OL															-0.5	-0.5	-0.5	-0.5	
5	A	2601-OL		0.1	0.1	-0.2	-0.1	0.7	0.8	0.7	0.7	0.1	0.1	-0.2	-0.2		-0.2	-0.1	-0.2	-0.2	
6	A	2601-OL		-0.3	-0.3	-0.3	-0.3	-0.1	0.4	-0.1	0.3	-0.4	-0.4	-0.3	-0.3		0.5	0.5	0.5	0.5	
7	A	2601-OL		0.5	0.5	0.4	0.5	-1.0	-0.2	-1.0	-0.3	0.5	0.5	0.5	0.5		-0.2	-0.1	-0.2	-0.2	
8	A	2601-OL		0.4	0.5	0.5	0.5	-0.3	-0.4	-0.4	-0.5	0.5	0.5	0.5	0.5						
9	A	2601-OL						-0.8	-0.8	-0.8	-0.9						0.9	0.9	0.9	0.9	
10	A	2601-OL				-0.2	-0.2	-1.0	-1.1	-1.0	-1.2	-0.1	-0.1	-0.1	-0.1		0.1	0.1	0.1	0.1	
11	A	2601-OL		-0.8	-0.7	-0.7	-0.7	0.5	1.5	0.5	1.4	-0.8	-0.7	-0.7	-0.7		-0.9	-0.9	-0.9	-0.9	
12	A	2601-OL		-1.2	-1.1	-1.2	-1.1	-0.5	-0.3	-0.5	-0.4	-1.1	-1.1	-1.1	-1.1		-0.3	-0.3	-0.3	-0.3	
13	A	2601-OL		-0.1	-0.1	-0.1	-0.1	-0.7	-1.8	-0.7	-1.8	-0.1	-0.1	-0.1	-0.1		0.5	0.5	0.5	0.5	
14	A	2601-OL		1.4	1.5	1.4	1.4	0.9	1.9	1.0	1.8	1.5	1.5	1.4	1.4		1.2	1.3	1.3	1.3	
15	A	2601-OL		-2.5	-2.4	-2.4	-2.4	0.7	0.1	-0.1	0.1	-2.5	-2.5	-2.5	-2.5		0.3	0.3	0.3	0.3	
16	A	2601-OL		0.1	0.1	0.1	0.1	0.2	1.1	0.2	1.0	0.1	0.1	0.1	0.1		2.0	2.1	2.1	2.1	
17	A	2601-OL		1.1	1.2	1.1	1.1	-1.3	-1.4	-1.3	-1.5	1.2	1.2	1.2	1.2		0.3	0.4	0.4	0.4	
18	A	2601-OL										-0.7	-0.6	-0.7	-0.7		-0.3	-0.3	-0.3	-0.3	
19	A	2601-OL															0.7	0.8	0.7	0.7	
20	A	2601-OL		0.1	0.1	0.1	0.2	-0.4	0.5	-0.4	0.4	0.1	0.1	0.2	0.2		0.0	0.0	0.0	0.0	
21	A	2601-OL		-0.9	-0.9	-0.9	-0.9	-0.3	-1.4	-0.3	-1.5	-0.9	-0.9	-0.9	-0.9		0.2	0.3	7168.5	7168.5	
22	A	2601-OL		-0.2	-0.2	-0.3	-0.2	-0.1	0.8	-0.1	0.7	-0.2	-0.2	-0.3	-0.3		-0.3	-0.2	-0.2	-0.2	
23	A	2601-OL															0.0	0.1	0.1	0.1	
24	A	2601-OL		-9.6	-9.6	-9.6	-9.6	-0.3	0.3	-0.3	0.1	-9.8	-9.8	-9.8	-9.8		-0.5	-0.4	-0.5	-0.5	
25	A	2601-OL															0.6	0.7	0.6	0.6	
26	A	2601-OL		-0.5	-0.5	-0.5	-0.5	-6.2	-6.0	-6.2	-6.1	-0.5	-0.4	-0.4	-0.4		0.2	0.3	0.2	0.2	
27	A	2601-OL		0.7	0.7	0.7	0.7	0.1	1.1	0.2	1.1	0.7	0.7	0.7	0.7		-0.4	-0.3	-0.4	-0.4	
28	A	2601-OL				0.2	0.2	-0.3	0.4	-0.3	0.3	0.2	0.2	0.2	0.2		-0.1	0.0	0.0	0.0	
29	A	2601-OL															0.3	0.4	0.3	0.3	
30	A	2601-OL															0.2	0.3	0.2	0.2	
31	A	2601-OL															-4.1	-4.2	-4.0	-4.2	
32	A	2601-OL		-0.4	-0.3	-0.4	-0.3	-0.5	0.0	-0.5	-0.1	-0.3	-0.3	-0.3	-0.3		-0.2	-0.2	-0.2	-0.2	
33	A	2601-OL		0.3	0.4	0.3	0.3	0.0	0.0	0.1	-0.1	0.4	0.4	0.3	0.3		0.0	0.1	0.0	0.0	
34	A	2601-OL															-0.1	-0.1	-0.1	-0.1	
35	A	2601-OL		0.1	0.1	0.1	0.2	0.6	0.8	0.6	0.7	0.1	0.1	0.1	0.1		-0.7	-0.7	-0.7	-0.7	
36	A	2601-OL															0.2	0.3	0.3	0.3	
37	A	2601-OL		-0.5	-0.4	-0.4	-0.4	-1.2	-1.1	-1.2	-1.2	-0.5	-0.4	-0.4	-0.4		-0.3	-0.3	-0.3	-0.3	
38	A	2601-OL		0.2	0.2	0.2	0.2	-0.4	0.4	-0.5	0.2	0.1	0.2	0.2	0.2		0.4	0.4	0.4	0.4	
39	A	2601-OL		-0.3	-0.3	-0.3	-0.3	-0.4	-1.0	-0.3	0.5	-0.3	-0.2	-0.3	-0.3		1.3	1.3	1.3	1.3	
40	A	2601-OL		-0.3	-0.3	-0.3	-0.2	-0.6	-0.3	-0.6	-0.4	-0.3	-0.2	-0.2	-0.2		-0.8	-0.7	-0.7	-0.7	
41	A	2601-OL															0.2	0.3	0.3	0.3	
42	A	2601-OL										-0.4	-0.4	-0.4	-0.4		1.1	1.2	1.2	1.2	
43	A	2601-OL		0.1	0.1	0.1	0.1	-1.8	-0.2	-1.2	-1.1	0.1	0.2	0.1	0.1		0.1	0.2	0.4	0.4	
44	A	2601-OL		-0.3	-0.3	-0.3	-0.3	0.4	0.4	0.4	0.4	-0.3	-0.3	-0.3	-0.3		-0.7	-0.7	-0.7	-0.7	
45	A	2601-OL															-0.1	0.0	-0.1	-0.1	
46	A	2601-OL															-0.7	-0.6	-0.6	-0.6	
47	A	2601-OL		0.0	0.0	0.0	0.0	-1.8	-1.0	-1.8	-1.1	0.1	0.1	0.0	0.0		-0.3	-0.3	-0.3	-0.3	
48	A	2601-OL															0.3	0.4	0.3	0.3	
49	A	2601-OL															0.3	0.4	0.4	0.4	
50	A	2601-OL		-0.7	-0.7	-0.7	-0.7	-0.7	-0.2	-0.8	-0.2	-0.7	-0.7	-0.7	-0.7		0.3	0.3	0.3	0.3	
51	A	2601-OL		-0.2	-0.2	-0.2	-0.2	-2.8	-3.1	-2.9	-3.2	-0.2	-0.2	-0.2	-0.2		0.1	0.1	0.2	0.2	
52	A	2601-OL		1.0	1.0	1.0	1.1	1.2	2.2	1.4	2.2	1.0	1.0	1.0	1.0		-0.1	0.0	-0.1	-0.1	
53	A	2601-OL															1.4		1.3	1.3	
54	A	2601-OL															-0.2	-0.2	-0.2	-0.2	
55	A	2601-OL															-0.3	-0.2	-0.3	-0.3	
56	A	2601-OL		0.1	0.1	0.1	0.1	-0.5	0.4	-0.5	0.3	0.1	0.1	0.1	0.1		0.7	0.7	0.7	0.7	
57	A	2601-OL		1.8	1.7	1.7	1.7	-0.6	-2.2	-0.6	-2.2	1.8	1.8	1.8	1.8		0.4	0.5	0.5	0.5	
58	A	2601-OL															-0.1	-0.1	-0.1	-0.1	
59	A	2601-OL		-0.1	0.0	0.0	0.0	1.6	1.3	1.6	2.4	-0.1	0.0	-0.1	-0.1		-0.3	-0.3	-0.3	-0.3	
60	A	2601-OL		0.1	0.1	0.1	0.1	-0.7	0.1	-0.7	0.0	0.1	0.2	0.1	0.1		-0.2	-0.2	-0.2	-0.2	
61	A	2601-OL		0.5	0.5	0.5	0.5	0.4	1.3	0.4	1.2	0.5	0.5	0.5	0.5		-0.9	-0.9	-0.8	-0.8	
62	A	2601-OL		0.9	0.9	0.9	0.9	-1.3	-1.2	-1.3	-1.3	1.0	1.0	1.0	1.0		1.1	1.1	1.1	1.1	
63	A	2601-OL		-1.9	-1.9	-1.9	-1.9	-0.7	0.0	-0.7	-0.1	-1.9	-1.9	-1.9	-1.9		0.9	1.0	0.9	0.9	
64	A	2601-OL															-0.3	-0.3	-0.3	-0.3	
65	A	2601-OL						-2													

Olive oil (2601-OL)
Sum parameters - Z-scores

LC	Data set	Sample	Z-score [σ _p = 10 %]	WHO-PCDD/F-PCB-TEQ reported		WHO-PCDD/F-PCB-TEQ calculated		WHO-PCDD/F-TEQ reported		WHO-PCDD/F-TEQ calculated		WHO-PCB-TEQ reported		WHO-PCB-TEQ calculated		Z-score [σ _p = 15 %]	Sum Indicator PCBs reported		Sum Indicator PCBs calculated		
				upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound	upper bound	lower bound		upper bound	lower bound	upper bound	lower bound	
81	A	2601-OL		0.9	0.8	0.9	0.8	3.0	-1.1	3.0	-1.1	0.9	0.9	0.9	0.9		0.5	0.6	0.6	0.6	
82	A	2601-OL																			
83	A	2601-OL		0.9	0.9	0.9	1.0	0.0	0.8	0.0	0.8	1.0	1.0	1.0	1.0			0.1	0.2	0.1	0.1
84	A	2601-OL		-3.9	-3.9	-3.9	-3.9	1.0	1.1	1.0	1.9	-4.0	-4.0	-4.0	-4.0			0.7	0.8	0.8	0.8
85	A	2601-OL		-3.6	-3.6	-3.6	-3.5	0.1	1.0	0.1	1.0	-3.6	-3.6	-3.6	-3.6			1.1	1.2	1.2	1.2
86	A	2601-OL		-0.2	-0.2	-0.2	-0.2	-1.1	-0.7	-1.1	-0.7	-0.2	-0.2	-0.2	-0.2			-0.2	-0.1	-0.1	-0.1
87	A	2601-OL																-0.5	-0.4	-0.5	-0.5
88		2601-OL																			
89	A	2601-OL																1.1	1.2	1.2	1.2
90	A	2601-OL		-8.8	-8.8	-8.8	-8.8	1.3	1.3	1.3	2.2	-9.0	-9.0	-9.0	-9.0			-6.0	-6.0	-6.0	-6.0
91	A	2601-OL		-8.8	-8.8	-8.8	-8.8	2.8	4.0	2.8	3.9	-9.0	-9.0	-9.0	-9.0			0.4	0.5	0.5	0.5
92	A	2601-OL		0.6	0.6	0.6	0.6	1.0	0.4	1.0	0.3	0.6	0.6	0.6	0.6			-0.3	-0.2	-0.3	-0.3
93	A	2601-OL		-0.9	-0.9	-0.9	-0.9	0.2	-0.8	0.2	-0.9	-0.9	-0.9	-0.9	-0.9						
94		2601-OL																			
95	A	2601-OL		1.8	1.8	1.8	1.8	-0.7	-0.3	-0.7	-0.4	1.9	1.9	1.9	1.9			0.4	0.5	0.4	0.4
96	A	2601-OL		-3.1	-3.1	-3.1	-3.1	-1.8	-2.3	-1.8	-2.3	-3.1	-3.1	-3.1	-3.1			-0.5	-0.5	-0.5	-0.5
97		2601-OL																			
98	A	2601-OL		-2.6	-2.5	-2.6	-2.5	2.4	3.6	2.4	3.4	-2.6	-2.6	-2.6	-2.6			-1.9	-1.8	-1.9	-1.9
99	A	2601-OL		0.4		0.4	0.4	0.6		0.6	0.7	0.4		0.4	0.4			0.8		0.9	0.9
100	A	2601-OL		0.9	0.8	3.5	3.5	2.4	-1.0	2.3	-1.1	0.9	0.9	3.6	3.6			-1.4	-1.4	-1.4	-1.4
101	A	2601-OL																			
102	A	2601-OL																-0.9	-0.9	-0.9	-0.9
103	A	2601-OL																-0.6	-0.6	-0.6	-0.6
104	A	2601-OL		-0.1	-0.1	-0.1	-0.1	-0.5	-2.3	-0.5	-2.4	-0.1	-0.1	-0.1	-0.1			0.0	0.1	0.1	0.1
105	A	2601-OL		0.5	0.6	0.5	0.6	-0.9	0.0	-0.9	-0.1	0.6	0.6	0.6	0.6			0.5	0.5	0.5	0.5
106	A	2601-OL		0.1	0.1	0.1	0.1	2.5	0.1	2.5	0.1	0.1	0.1	0.1	0.1			-0.1	0.0	0.0	0.0
107	A	2601-OL		-0.5	-0.5	-0.5	-0.5	2.9	1.6	2.9	1.5	-0.6	-0.6	-0.5	-0.5						
108	A	2601-OL		0.6	0.6	0.6	0.5	1.4	-1.4	1.4	-1.5	0.6	0.6	0.6	0.6			0.2	0.3	0.2	0.2
109	A	2601-OL		-0.2	-0.2	-0.2	-0.2	2.6	2.6	2.6	2.5	-0.3	-0.3	-0.3	-0.3			-2.1	-2.0	-1.2	-1.2
Additional sets																					
24	B	2601-OL		-9.6	-9.6			0.3	-0.2	0.3	-0.2										
78	B	2601-OL		0.6	0.6	0.5	0.5	-2.1	-1.5	-2.0	-1.6	0.7	0.7	0.6	0.6						
81	B	2601-OL																0.5	0.6	0.6	0.6
82	B	2601-OL																			
Modification																					
18*		2601-OL		-0.7	-0.6			-0.5	0.4	-0.5	0.3										
24*		2601-OL		-0.8	-0.8							-0.7	-0.6	-1.0	-1.0						
31*		2601-OL																-1.3	-1.2	-1.3	-1.3
62*		2601-OL						-1.3	-1.2	-1.3	-1.3										

PCDD/F - Z-scores

EURL-PT-DPB_2601-OL

Olive oil (2601-OL)
PCDD/F - Z-scores

LC	Data set	Sample	Z-score [σ _p = 10 %]	WHO-PCDD/F-TEQ reported		WHO-PCDD/F-TEQ calculated		Z-score [σ _p = 20 %]																		
				upper bound	lower bound	upper bound	lower bound		2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	
73	A	2601-OL		-0.5	-0.5	-0.5	-0.6			0.0	0.7	0.3	0.2	-0.5		-0.3	-0.2	-0.4	-0.2	0.2	0.7		-0.3			
74	A	2601-OL		-0.9	-0.4	-0.9	-0.5			0.3	-0.1	0.5	-0.3	-0.4	0.2	-0.2	0.3	-0.4	0.1	0.1	-0.3		-0.1		-1.0	
75	A	2601-OL		0.6	-1.2	0.7	-1.3				12.0	3.8	14.0	-0.4	-1.3	-0.8	-1.0	0.1	-1.3		8.1		1.9		2.5	
76	A	2601-OL		0.5	1.5	0.5	1.4			0.4	-0.5	0.4	0.2	0.2	0.4	0.3	1.7	0.4	0.8	0.4	0.4		0.2		-0.3	
77	A	2601-OL		0.4	0.0	0.4	1.3			-1.1	3.1	0.3	2.9	-0.3	1.7	0.4	0.7	0.4	1.7	-1.1	-0.6		-0.1		2.1	
78	A	2601-OL		-1.9	-1.5	-1.9	-1.5			-2.3		-0.2			0.2	-0.4	-0.9	-0.8	-0.2	0.1	0.1		-0.5		-0.6	
79	A	2601-OL		-0.4	0.1	-0.3	0.2			0.0	3.9	0.1		2.3	1.6	-1.1	0.2	0.2	-0.2	0.4	1.6		1.1		1.9	
80	A	2601-OL																								
81	A	2601-OL		3.0	-1.1	3.0	-1.1							1.4	-0.1	0.7	2.3	0.7	-1.1	3.0			0.0			
82	A	2601-OL																								
83	A	2601-OL		0.0	0.8	0.0	0.8			2.2	0.8	-0.5	-1.4	-0.1	-0.3	-0.1	-0.1	-0.4	-0.2	0.6	0.0		-0.3		-0.4	
84	A	2601-OL		1.0	1.1	1.0	1.9			-0.1	0.1	1.0	1.9	-0.3	-0.2	0.6	0.5	0.8	0.6	0.6	1.5		0.4		0.4	
85	A	2601-OL		0.1	1.0	0.1	1.0			0.6	-3.4	-0.1	-1.0	-0.5	-0.2	-0.1	0.0	0.1	-0.4	-0.3	0.0		-0.9		-2.0	
86	A	2601-OL		-1.1	-0.7	-1.1	-0.7			0.0	-0.1	0.5	0.5	-0.2	0.6	-0.2	0.2	-0.6	0.0	0.1	-0.3		-0.1			
87	A	2601-OL																								
88		2601-OL																								
89	A	2601-OL																								
90	A	2601-OL		1.3	1.3	1.3	2.2			-1.1	-0.9	-3.2	-1.0	-0.2	-1.6	0.6	0.9	1.6	3.3	-0.6	-0.3		6.6		2.5	
91	A	2601-OL		2.8	4.0	2.8	3.9			2.6	15.7	9.5	14.5	0.7	0.3	0.9	1.1	0.3	0.3	2.9	4.2		0.3		1.5	
92	A	2601-OL		1.0	0.4	1.0	0.3					2.1		0.3	1.9	1.0	2.1	0.3	1.9	1.8	2.4		1.7		5.2	
93	A	2601-OL		0.2	-0.8	0.2	-0.9					3.8		1.0	1.0	-0.8	0.4	0.4	2.6	5.3	7.1		1.5		4.2	
94		2601-OL																								
95	A	2601-OL		-0.7	-0.3	-0.7	-0.4			-2.0	-0.3	-0.4	0.1	-0.1	0.7	0.6	0.0	0.0	0.4	0.8	-0.8		-0.1		-2.8	
96	A	2601-OL		-1.8	-2.3	-1.8	-2.3					-0.7	-1.2	-0.5		-0.2	-0.3	-0.3	-0.7	-0.6	-0.8		-0.9		-0.8	
97		2601-OL																								
98	A	2601-OL		2.4	3.6	2.4	3.4			13.6	4.7	-0.4	3.7	0.7	2.5	-0.6	-1.3	-0.9	-0.5	-2.3	-1.7		1.5		0.0	
99	A	2601-OL		0.6		0.6	0.7			-0.7	3.5	-1.0	0.3	0.5	1.4	0.6	1.0	0.6	-0.3	0.0	0.4		0.3		2.0	
100	A	2601-OL		2.4	-1.0	2.3	-1.1					-0.2		0.5	0.1	0.6	0.4	0.3	0.5	1.0	-0.3		0.5		0.1	
101	A	2601-OL																								
102	A	2601-OL																								
103	A	2601-OL																								
104	A	2601-OL		-0.5	-2.3	-0.5	-2.4				19.3			-1.4	-2.1	-0.4	-1.3	-0.3	-1.3	-2.5	-2.1		-0.9			
105	A	2601-OL		-0.9	0.0	-0.9	-0.1			0.5	0.2	0.6	0.8	0.4	-0.1	-0.8	-0.8	-0.5	0.3	0.1	0.4		1.8		3.5	
106	A	2601-OL		2.5	0.1	2.5	0.1			1.2				1.0		-0.1	0.3	0.3	0.3	0.7	1.2					
107	A	2601-OL		2.9	1.6	2.9	1.5				3.3	2.7	4.3	1.2	1.3	-0.2	1.6	0.3	0.7	2.7	2.8		2.1			
108	A	2601-OL		1.4	-1.4	1.4	-1.5									0.5	0.4	0.5	1.6	2.6						
109	A	2601-OL		2.6	2.6	2.6	2.5							1.9	7.4	0.7	1.8	1.6	24.0	6.7	5.6		1.1			
Additional sets																										
24	B	2601-OL		0.3	-0.2	0.3	-0.2			1.7		-1.3			0.3	-0.4	-0.6	0.0	0.0	-0.6	1.2		0.3		1.9	
78	B	2601-OL		-2.1	-1.5	-2.0	-1.6			-1.5		-0.6		-0.2	-0.2	-0.4	-1.0	-1.0	0.0	-0.9	-1.4		-0.7		-1.5	
81	B	2601-OL																								
82	B	2601-OL																								
Modification																										
18*		2601-OL		-0.5	0.4	-0.5	0.3			-0.8	-0.1	2.1	-0.5	0.1	0.2	-0.1	0.5	0.3	0.1	0.3	-0.8		-0.4		-1.7	
24*		2601-OL																								
31*		2601-OL																								
62*		2601-OL		-1.3	-1.2	-1.3	-1.3			-0.3	-0.1	-0.7	-0.1	-0.6	-0.5	-0.6	-0.8	-0.7	-0.4	-0.4	-0.5		-0.6		-0.5	

Olive oil (2601-OL)
Dioxin-like PCB - Z-scores

LC	Data set	Sample	Z-score [σ _p = 10 %]	WHO-PCB-TEQ reported		WHO-PCB-TEQ calculated		Z-score [σ _p = 20 %]	PCB 105	PCB 114	PCB 118	PCB 123	PCB 156	PCB 157	PCB 167	PCB 189	PCB 77	PCB 81	PCB 126	PCB 169
				upper bound	lower bound	upper bound	lower bound													
1	A	2601-OL		0.5	0.5	0.5	0.5		-0.2		-0.1		0.1	0.2	-0.1	-0.1	0.1	0.2	-0.2	0.2
2		2601-OL																		
3	A	2601-OL		-0.2	-0.2	-0.1	-0.1		0.0	-0.2	0.1	0.1	-0.1	0.0	-0.4	-0.2	0.3	0.6	0.8	-0.1
4	A	2601-OL																		
5	A	2601-OL		0.1	0.1	-0.2	-0.2		0.0	-0.3	-0.1	-0.1	0.6	0.2	0.1	0.2	-0.2	0.2	-0.1	-0.1
6	A	2601-OL		-0.4	-0.4	-0.3	-0.3		0.2	0.7	-0.1	0.3	0.0	-0.3	0.0	0.1	-0.5	-0.4	-0.4	-0.2
7	A	2601-OL		0.5	0.5	0.5	0.5		0.0	-0.1	0.0	0.4	0.4	0.1	0.1	0.0	0.0	-0.3	-0.1	0.2
8	A	2601-OL		0.5	0.5	0.5	0.5		0.0	-0.5	0.2	1.7	0.2	0.0	0.1	0.1	0.5	0.2	0.4	0.2
9	A	2601-OL																		
10	A	2601-OL		-0.1	-0.1	-0.1	-0.1		-0.2	0.5	-0.3	0.5	-0.2	-0.2	-0.2	-0.3	-0.3		0.9	-0.1
11	A	2601-OL		-0.8	-0.7	-0.7	-0.7		-0.8	-1.8	0.0	-3.0	-0.4	-0.5	-0.2	-0.4	-0.1	0.1	-0.2	-0.4
12	A	2601-OL		-1.1	-1.1	-1.1	-1.1		-0.1	-0.9	0.0	-0.1	-0.1	0.0	-0.1	-0.1	-0.4	-0.3	5.0	-0.7
13	A	2601-OL		-0.1	-0.1	-0.1	-0.1		0.7	2.7	1.3	2.4	0.8	1.2	0.9	0.7	0.3	0.5	1.1	-0.1
14	A	2601-OL		1.5	1.5	1.4	1.4		-0.1	0.5	0.6	0.7	0.8	0.4	-0.2	0.1	0.6	1.1	0.1	0.7
15	A	2601-OL		-2.5	-2.5	-2.5	-2.5		-1.5	-1.7	-1.5	-1.3	-1.3	-1.1	-1.3	-1.3	-1.5	-1.5	-1.7	-1.2
16	A	2601-OL		0.1	0.1	0.1	0.1		0.5	-0.3	0.4	1.2	-0.1	-0.4	-1.3	-0.1	0.0	-0.3	1.2	0.0
17	A	2601-OL		1.2	1.2	1.2	1.2		-0.7	-1.1	-0.8	-2.9	0.6	0.5	0.6	0.6	-0.5	-3.6	1.5	0.6
18	A	2601-OL		-0.7	-0.6	-0.7	-0.7		-0.3	-0.8	-0.6	-0.1	-0.2	-0.6	-0.3	-0.2	-0.2	-0.3	-0.7	-0.3
19	A	2601-OL																		
20	A	2601-OL		0.1	0.1	0.2	0.2		0.1	1.4	0.0	-0.2	-0.3	-0.1	0.0	-0.1	0.3	0.0	-0.4	0.1
21	A	2601-OL		-0.9	-0.9	-0.9	-0.9		0.1	0.1	0.1	-0.8	-0.2	0.0	0.3	0.0	-0.5	-0.3	-0.7	-0.5
22	A	2601-OL		-0.2	-0.2	-0.3	-0.3		-0.2	-0.9	-0.4	-3.3	0.0	-0.3	-0.4	-0.1	0.2	-0.3	-0.6	-0.1
23	A	2601-OL																		
24	A	2601-OL		-9.8	-9.8	-9.8	-9.8		0.1	-1.6	-1.1	-1.3	0.0	-0.5	-0.3	-0.3	-0.2	-0.2	-0.6	
25	A	2601-OL																		
26	A	2601-OL		-0.5	-0.4	-0.4	-0.4		-0.8	-1.0	-1.0	-0.8	-1.0	-0.8	-1.0	-0.8	-0.4	-0.3	-0.4	-0.2
27	A	2601-OL		0.7	0.7	0.7	0.7		0.3	-0.3	0.0	-0.2	0.2	0.0	-0.1	0.0	0.0	0.4	0.6	0.3
28	A	2601-OL		0.2	0.2	0.2	0.2		0.2	-0.2	0.1	-1.3	-0.1	0.3	-0.1	-0.1	0.1	0.6	-0.8	0.1
29	A	2601-OL																		
30	A	2601-OL																		
31	A	2601-OL																		
32	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.1	-0.1	-0.3	-0.2	-0.4	-0.4	-0.3	-0.1	-0.1	-0.2	-0.6	-0.2
33	A	2601-OL		0.4	0.4	0.3	0.3		0.3	0.3	0.0	-0.1	-0.1	0.0	0.1	-0.4	0.5	-0.3	0.5	0.2
34	A	2601-OL																		
35	A	2601-OL		0.1	0.1	0.1	0.1		-0.3	-0.8	-0.4	0.0	-0.1	-0.2	-0.1	-0.2	-0.5	-0.4	-1.0	0.1
36	A	2601-OL																		
37	A	2601-OL		-0.5	-0.4	-0.4	-0.4		-0.6		-0.4		-0.3	0.0	-0.1	-0.1	-0.3	-0.4	-0.6	-0.2
38	A	2601-OL		0.1	0.2	0.2	0.2		0.3	-0.2	0.3	0.3	0.5	0.5	0.1	0.4	-0.6	-0.2	0.0	0.1
39	A	2601-OL		-0.3	-0.2	-0.3	-0.3		1.0	1.0	1.4	1.5	-0.4	-0.3	-0.4	1.2	4.2	3.4	0.5	-0.2
40	A	2601-OL		-0.3	-0.2	-0.2	-0.2		0.5	-0.1	0.3	-1.5	0.0	0.0	0.1	0.3	0.1	0.0	-0.3	-0.1
41	A	2601-OL																		
42	A	2601-OL		-0.4	-0.4	-0.4	-0.4		-0.5	1.3	-0.1	0.4	-0.3	-0.4	-0.3	-0.4	-0.3	0.2	0.3	-0.2
43	A	2601-OL		0.1	0.2	0.1	0.1		2.0	6.2	2.5	2.4	5.3	0.5	19.0	-0.1	0.9	1.0	1.1	0.0
44	A	2601-OL		-0.3	-0.3	-0.3	-0.3		0.1	0.4	0.6	-0.3	0.2	0.1	0.2	-0.1	-0.1	-0.3	1.1	-0.2
45	A	2601-OL																		
46	A	2601-OL																		
47	A	2601-OL		0.1	0.1	0.0	0.0		0.1	0.2	0.3	1.3	-0.2	-0.6	0.2	0.0	0.1	0.4	9.9	-0.1
48	A	2601-OL																		
49	A	2601-OL																		
50	A	2601-OL		-0.7	-0.7	-0.7	-0.7		-0.8	-0.3	-0.3	0.5	0.1	0.0	0.0	0.3	-0.2	-0.3	-0.4	-0.4
51	A	2601-OL		-0.2	-0.2	-0.2	-0.2		-0.2	0.7	-0.2	-0.2	-0.1	0.7	0.4	0.5	-0.3	0.2	-0.1	-0.1
52	A	2601-OL		1.0	1.0	1.0	1.0		0.0	1.1	-0.1	2.0	0.0	0.0	0.1	0.0	0.1	0.7	-0.3	0.5
53	A	2601-OL																		
54	A	2601-OL																		
55	A	2601-OL																		
56	A	2601-OL		0.1	0.1	0.1	0.1		-0.3	0.1	-0.4	-0.5	-0.4	-0.2	0.5	0.2	0.0	-0.5	-0.2	0.0
57	A	2601-OL		1.8	1.8	1.8	1.8		0.2	0.9	1.1	-0.5	0.2	0.5	0.4	0.4	0.2	0.5	0.2	0.9
58	A	2601-OL																		
59	A	2601-OL		-0.1	0.0	-0.1	-0.1		-0.3	-0.6	-0.4	-0.6	0.1	0.2	-0.1	-0.2	0.1	0.0	0.8	0.0
60	A	2601-OL		0.1	0.2	0.1	0.1		0.2	-0.2	0.0	0.1	0.5	0.6	0.6	-0.2	0.0	-0.7	0.9	0.0
61	A	2601-OL		0.5	0.5	0.5	0.5		0.2	0.5	0.4	23.8	-0.2	-0.3	0.2	-0.1	1.0	2.5	23.5	-0.1
62	A	2601-OL		1.0	1.0	1.0	1.0		0.1	0.1	-0.1	0.0	1.0	0.6	0.8	0.6	0.1	-0.2	-0.4	0.5
63	A	2601-OL		-1.9	-1.9	-1.9	-1.9		0.1	0.0	-0.1	0.1	0.3	0.2	0.4	0.7	-0.7	-1.1	-0.7	-1.0
64	A	2601-OL																		
65	A	2601-OL																		
66		2601-OL																		
67	A	2601-OL		0.1	0.2	0.1	0.1		-0.1	-2.5	-0.5	-3.4	-0.1	0.1	0.1	0.1	-0.8	-3.2		0.1

Olive oil (2601-OL)
Dioxin-like PCB - Z-scores

LC	Data set	Sample	Z-score [σ _p = 10 %]	WHO-PCB-TEQ reported		WHO-PCB-TEQ calculated		Z-score [σ _p = 20 %]	PCB 105	PCB 114	PCB 118	PCB 123	PCB 156	PCB 157	PCB 167	PCB 189	PCB 77	PCB 81	PCB 126	PCB 169	
				upper bound	lower bound	upper bound	lower bound														
68	A	2601-OL		0.2	0.2	0.2	0.2		-0.1	-0.3	0.0	0.0	-0.2	-0.2	0.1	0.2	0.2	0.1	0.0	0.1	
69	A	2601-OL		-1.4	-1.4	-1.5	-1.5		-0.8	-0.5	-0.9	-1.3	-0.7	-0.7	-0.8	-0.3	-0.8	-1.0	-0.8	-0.7	
70	A	2601-OL		-0.1	-0.1	-0.1	-0.1		0.2	0.0	0.0	-0.4	0.2	-0.1	0.0	-0.3	0.3	0.0	-0.4	0.0	
71	A	2601-OL																			
72	A	2601-OL																			
73	A	2601-OL		-0.4	-0.4	-0.4	-0.4		-0.2	0.3	-0.4	-0.3	-0.3	-0.2	-0.4	-0.1	-0.4	-0.7	-0.2	-0.2	
74	A	2601-OL		-0.1	-0.1	-0.1	-0.1		0.1	0.0	-0.3	0.0	-0.2	-0.2	0.0	0.0	0.2	0.2	0.1	0.0	
75	A	2601-OL		-0.8	-0.8	-0.8	-0.8		2.8	3.5	1.6	15.5	1.0	-0.2	0.0	0.1	-1.3	-1.6	-0.4	-0.4	
76	A	2601-OL		0.0	0.1	0.0	0.0		0.1	0.3	0.0	0.6	0.0	0.4	0.3	0.1	-0.1	0.0	0.4	0.0	
77	A	2601-OL																			
78	A	2601-OL		0.4	0.4	0.5	0.5		0.4	0.9	0.8	-0.9	0.3	-0.1	0.6	0.4	0.1	0.2	0.3	0.2	
79	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.1	0.0	-0.4	-0.7	-0.4	-0.1	-0.6	-0.4	-0.4	-0.3	3.6	-0.2	
80	A	2601-OL																			
81	A	2601-OL		0.9	0.9	0.9	0.9		-0.1	-0.4	0.0	-0.1	-0.3	-0.2	-0.3	-0.1	0.4	0.3	0.0	0.5	
82	A	2601-OL																			
83	A	2601-OL		1.0	1.0	1.0	1.0		0.7	0.0	-0.2	-0.2	0.3	0.0	0.0	0.1	0.1	0.6	0.1	0.5	
84	A	2601-OL		-4.0	-4.0	-4.0	-4.0		0.5	0.6	0.2	0.3	0.5	0.5	0.5	0.6	-0.5	0.2	-0.3	-2.0	
85	A	2601-OL		-3.6	-3.6	-3.6	-3.6		-0.9	-0.6	-0.8	-0.5	-2.7	-3.6	-1.8	-0.1	-3.0	0.0	0.5	-1.8	
86	A	2601-OL		-0.2	-0.2	-0.2	-0.2		0.1	-0.3	-0.3	0.0	-0.3	-0.2	-0.1	0.0	0.1	0.1	0.5	-0.1	
87	A	2601-OL																			
88		2601-OL																			
89	A	2601-OL																			
90	A	2601-OL		-9.0	-9.0	-9.0	-9.0		14.2	73.3	52.3	326.3	-4.2	-3.2	-4.1	-4.5	-3.2	16.7	15.5	-4.8	
91	A	2601-OL		-9.0	-9.0	-9.0	-9.0		-4.1	-4.5	-4.5	-4.4	-4.5	-4.5	-4.5	-4.5	-4.5	-4.4	-4.5	-4.5	
92	A	2601-OL		0.6	0.6	0.6	0.6		0.2	4.5	0.1	7.6	0.0	-0.2	-0.2	-0.1	0.7	0.1	-0.3	0.3	
93	A	2601-OL		-0.9	-0.9	-0.9	-0.9		-0.6	-0.5	-0.2	-0.2	0.0	0.2	0.1	-0.2	-0.2	-0.8	-0.1	-0.5	
94		2601-OL																			
95	A	2601-OL		1.9	1.9	1.9	1.9		0.8	0.4	0.4	2.3	0.7	1.0	1.0	-1.6	1.0	0.7	0.6	0.9	
96	A	2601-OL		-3.1	-3.1	-3.1	-3.1		0.2	-0.1	0.7	1.4	0.0	-0.2	-0.1	-0.1	-0.8	-0.8	-1.1	-1.6	
97		2601-OL																			
98	A	2601-OL		-2.6	-2.6	-2.6	-2.6		-0.1	-1.6	-0.3	-0.3	-0.2	-1.6	-0.5	-1.1	-0.9	-0.5	-1.7	-1.3	
99	A	2601-OL		0.4		0.4	0.4		0.4	0.2	0.0	-1.0	0.0	-0.1	0.0	0.2	0.6	0.4	-0.2	0.2	
100	A	2601-OL		0.9	0.9	3.6	3.6		0.5	0.2	0.6	0.7	0.3	0.8	496.5	0.7	0.3	-0.1	0.0	0.5	
101	A	2601-OL																			
102	A	2601-OL																			
103	A	2601-OL																			
104	A	2601-OL		-0.1	-0.1	-0.1	-0.1		0.1		0.1		-0.1	0.2	-0.3	0.0	0.3	-0.2	0.0	0.0	
105	A	2601-OL		0.6	0.6	0.6	0.6		0.2	0.6	0.4	0.8	0.1	0.1	0.2	-0.4	0.3	0.5	3.0	0.2	
106	A	2601-OL		0.1	0.1	0.1	0.1		-0.2		-0.2		-0.3	0.1	-0.4	-0.3		0.7	1.9	0.0	
107	A	2601-OL		-0.6	-0.6	-0.5	-0.5		-0.7	2.8	0.5	12.5	0.2	0.2	0.9	0.0	0.2	9.4	0.1	-0.3	
108	A	2601-OL		0.6	0.6	0.6	0.6		0.2		0.8		0.3	0.1	0.2	0.4	0.7		-0.7	0.3	
109	A	2601-OL		-0.3	-0.3	-0.3	-0.3		0.5	-0.9	1.2	1.8	-0.4	-0.4	-3.3	-0.6	1.5	1.6	0.1	-0.1	
Additional sets																					
24	B	2601-OL																			
78	B	2601-OL		0.7	0.7	0.6	0.6		0.7	0.6	0.6	0.0	0.2	-0.1	0.3	0.3	0.3	0.2	0.0	0.3	
81	B	2601-OL																			
82	B	2601-OL																			
Modification																					
18*		2601-OL																			
24*		2601-OL		-0.7	-0.6	-1.0	-1.0		0.1	-1.6	-1.1	-1.3	0.0	-0.5	-0.3	-0.3	-0.2	-0.2	-0.6	-0.5	
31*		2601-OL																			
62*		2601-OL																			

Olive oil (2601-OL)
Non dioxin-like PCB - Z-scores

LC	Data set	Sample	Z-score [σ _p = 15 %]	Sum Indicator PCBs reported		Sum Indicator PCBs calculated		Z-score [σ _p = 20 %]	PCB 28	PCB 52	PCB 101	PCB 138	PCB 153	PCB 180
				upper bound	lower bound	upper bound	lower bound							
1	A	2601-OL		-0.4	-0.3	-0.4	-0.4		0.0	-0.6	-0.1	-0.5	-0.3	-0.6
2		2601-OL												
3	A	2601-OL		-0.8	-0.7	-0.7	-0.7		-0.9	-0.4	-0.3	-0.7	0.0	-0.3
4	A	2601-OL		-0.5	-0.5	-0.5	-0.5		-0.4	-0.2	0.0	-0.3	-0.5	-0.5
5	A	2601-OL		-0.2	-0.1	-0.2	-0.2		-0.3	-0.6	-0.4	0.0	0.3	0.1
6	A	2601-OL		0.5	0.5	0.5	0.5		0.7	0.2	0.3	0.1	0.1	0.1
7	A	2601-OL		-0.2	-0.1	-0.2	-0.2		-0.4	-0.1	-0.3	0.0	-0.3	0.2
8	A	2601-OL												
9	A	2601-OL		0.9	0.9	0.9	0.9		1.2	0.6	0.9	0.4	0.7	-0.2
10	A	2601-OL		0.1	0.1	0.1	0.1		0.0	-0.6	0.3	0.3	0.3	0.2
11	A	2601-OL		-0.9	-0.9	-0.9	-0.9		-0.9	-0.1	-0.6	-2.6	3.2	-0.6
12	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.7	0.1	0.1	0.2	-0.2	-0.1
13	A	2601-OL		0.5	0.5	0.5	0.5		0.0	0.6	0.6	0.4	0.7	0.6
14	A	2601-OL		1.2	1.3	1.3	1.3		2.4	0.3	0.3	0.2	1.1	-0.4
15	A	2601-OL		0.3	0.3	0.3	0.3		1.1	-0.2	0.0	-0.9	0.0	0.1
16	A	2601-OL		2.0	2.1	2.1	2.1		2.7	0.6	1.4	0.8	0.7	0.9
17	A	2601-OL		0.3	0.4	0.4	0.4		0.9	-0.1	-0.2	-0.1	-0.4	0.2
18	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.4	0.1	-0.2	-0.1	-0.2	-0.2
19	A	2601-OL		0.7	0.8	0.7	0.7		0.6	0.6	0.5	0.4	0.5	0.5
20	A	2601-OL		0.0	0.0	0.0	0.0		-0.3	0.0	0.1	0.0	-0.2	0.4
21	A	2601-OL		0.2	0.3	7168.5	7168.5		5049.9	5547.6	5952.0	6179.5	4735.3	5076.6
22	A	2601-OL		-0.3	-0.2	-0.2	-0.2		-0.9	-0.3	0.1	0.1	0.2	0.5
23	A	2601-OL		0.0	0.1	0.1	0.1		0.1	-0.1	-0.1	0.0	0.2	-0.1
24	A	2601-OL		-0.5	-0.4	-0.5	-0.5		-0.4	-0.3	-0.1	-0.1	-0.7	-0.5
25	A	2601-OL		0.6	0.7	0.6	0.6		0.6	0.4	0.6	0.2	0.3	0.5
26	A	2601-OL		0.2	0.3	0.2	0.2		0.3	0.9	0.3	0.3	0.3	-0.8
27	A	2601-OL		-0.4	-0.3	-0.4	-0.4		-0.2	0.2	-0.3	-0.4	-0.6	-0.2
28	A	2601-OL		-0.1	0.0	0.0	0.0		-0.2	0.1	0.3	-0.1	0.1	0.0
29	A	2601-OL		0.3	0.4	0.3	0.3		0.4	-0.3	0.1	0.3	0.1	0.3
30	A	2601-OL		0.2	0.3	0.2	0.2		-0.1	0.1	0.1	0.0	-0.1	1.0
31	A	2601-OL		-4.1	-4.2	-4.0	-4.2		-3.9	0.5	-0.5	-3.3	-2.5	
32	A	2601-OL		-0.2	-0.2	-0.2	-0.2		-0.2	0.0	-0.1	-0.2	-0.1	-0.2
33	A	2601-OL		0.0	0.1	0.0	0.0		-0.3	-0.1	0.0	0.3	-0.2	0.6
34	A	2601-OL		-0.1	-0.1	-0.1	-0.1		-0.3	-0.5	0.0	0.7	-0.2	-0.2
35	A	2601-OL		-0.7	-0.7	-0.7	-0.7		-0.3	-0.8	-0.4	-0.7	-0.6	-0.8
36	A	2601-OL		0.2	0.3	0.3	0.3		0.3	0.0	0.2	0.1	0.3	0.1
37	A	2601-OL		-0.3	-0.3	-0.3	-0.3		0.0	-0.3	-0.4	-0.2	-0.4	-0.4
38	A	2601-OL		0.4	0.4	0.4	0.4		-0.1	0.5	0.5	0.4	0.4	0.5
39	A	2601-OL		1.3	1.3	1.3	1.3		1.1	1.6	1.8	1.3	0.0	0.1
40	A	2601-OL		-0.8	-0.7	-0.7	-0.7		-1.9	0.3	0.4	0.0	0.1	0.1
41	A	2601-OL		0.2	0.3	0.3	0.3		0.1	-0.6	0.3	0.1	1.7	-0.2
42	A	2601-OL		1.1	1.2	1.2	1.2		2.5	0.0	0.3	0.0	-0.1	-0.1
43	A	2601-OL		0.1	0.2	0.4	0.4		0.1	0.5	0.3	0.4	0.4	0.3
44	A	2601-OL		-0.7	-0.7	-0.7	-0.7		0.1	-1.2	-1.1	-0.7	-0.8	-0.7
45	A	2601-OL		-0.1	0.0	-0.1	-0.1		-0.1	-0.8	-0.9	1.0	-0.1	-0.3
46	A	2601-OL		-0.7	-0.6	-0.6	-0.6		-0.6	-0.2	-0.6	-0.6	0.0	-0.5
47	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.5	0.4	-0.4	0.1	-0.7	0.1
48	A	2601-OL		0.3	0.4	0.3	0.3		0.1	0.3	0.2	0.1	0.8	0.4
49	A	2601-OL		0.3	0.4	0.4	0.4		0.3	0.3	0.1	0.6	-0.3	0.2
50	A	2601-OL		0.3	0.3	0.3	0.3		0.4	0.2	0.1	0.1	0.2	0.0
51	A	2601-OL		0.1	0.1	0.2	0.2		1.2	-0.8	-0.7	-0.2	-0.2	-0.3
52	A	2601-OL		-0.1	0.0	-0.1	-0.1		-0.1	0.2	0.5	-0.3	0.0	-0.2
53	A	2601-OL		1.4		1.3	1.3		1.4	0.3	1.1	-1.7	5.8	0.4
54	A	2601-OL		-0.2	-0.2	-0.2	-0.2		-0.2	-0.3	0.0	-0.3	-0.3	0.1
55	A	2601-OL		-0.3	-0.2	-0.3	-0.3		-0.2	0.8	-0.5	-0.3	-0.5	-0.2
56	A	2601-OL		0.7	0.7	0.7	0.7		0.6	-0.3	0.7	0.7	0.7	0.5
57	A	2601-OL		0.4	0.5	0.5	0.5		0.0	0.1	0.7	0.4	0.9	0.4
58	A	2601-OL		-0.1	-0.1	-0.1	-0.1		-0.3	-0.3	-0.1	-0.1	0.0	0.2
59	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.5	-0.1	-0.2	-0.2	-0.3	0.1
60	A	2601-OL		-0.2	-0.2	-0.2	-0.2		0.0	0.2	-0.2	-0.1	-0.1	-0.7
61	A	2601-OL		-0.9	-0.9	-0.8	-0.8		-1.5	-1.1	-0.9	-0.3	-0.2	0.8
62	A	2601-OL		1.1	1.1	1.1	1.1		1.3	0.8	0.7	0.5	0.7	0.4
63	A	2601-OL		0.9	1.0	0.9	0.9		0.4	0.7	1.3	0.8	0.9	0.5
64	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.3	-0.3	-0.4	0.0	-1.1	0.2
65	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.4	0.3	-0.5	0.0	-0.2	-0.3
66		2601-OL												
67	A	2601-OL		-1.5	-1.4	-1.5	-1.5		-1.7	-0.2	-0.2	-2.1	-1.0	0.0

Olive oil (2601-OL)
Non dioxin-like PCB - Z-scores

LC	Data set	Sample	Z-score [σ _p = 15 %]	Sum Indicator PCBs reported		Sum Indicator PCBs calculated		Z-score [σ _p = 20 %]	PCB 28	PCB 52	PCB 101	PCB 138	PCB 153	PCB 180	
				upper bound	lower bound	upper bound	lower bound								
68	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.8	-0.1	0.1	0.1	0.1	0.0	
69	A	2601-OL		-0.2	-0.1	0.0	0.0		-0.8	0.3	0.5	0.5	0.2	0.4	
70	A	2601-OL		-0.3	-0.2	-0.3	-0.3		-0.5	0.3	0.1	-0.1	-0.3	-0.1	
71	A	2601-OL		-0.2	-1.0	-1.0	-1.0		-1.3	-0.7	-0.3	-2.6	3.2	-0.4	
72	A	2601-OL		-0.1	0.0	-0.1	-0.1		-0.2	0.0	0.1	0.1	-0.2	0.1	
73	A	2601-OL		-0.3	-0.3	-0.3	-0.3		-0.3	-0.4	0.1	-0.2	-0.2	-0.2	
74	A	2601-OL		-0.2	-0.1	-0.1	-0.1		-0.2	-0.1	0.1	0.0	0.1	-0.2	
75	A	2601-OL		0.1	0.2	0.2	-0.4		0.6		0.4	-2.4	-0.3	1.8	
76	A	2601-OL		0.0	0.1	0.1	0.1		-0.3	0.0	0.1	0.3	0.2	0.2	
77	A	2601-OL		7.9	8.1	8.0	8.0		1.7	4.4	2.9	4.0	10.9	16.0	
78	A	2601-OL													
79	A	2601-OL		-0.8	-0.7	-0.8	-0.8		-0.9	-0.7	-0.5	-0.2	-0.1	-0.5	
80	A	2601-OL		-0.3	-0.2	-0.3	-0.3		0.0	-0.2	0.0	-0.3	-0.3	-0.4	
81	A	2601-OL		0.5	0.6	0.6	0.6		0.2	0.8	0.6	0.6	0.7	0.3	
82	A	2601-OL													
83	A	2601-OL		0.1	0.2	0.1	0.1		0.0	0.4	-0.1	0.3	0.2	-0.1	
84	A	2601-OL		0.7	0.8	0.8	0.8		0.7	0.3	0.4	0.5	0.5	0.6	
85	A	2601-OL		1.1	1.2	1.2	1.2		2.0	-0.2	-0.9	-1.4	4.5	0.7	
86	A	2601-OL		-0.2	-0.1	-0.1	-0.1		-0.2	-0.2	0.2	-0.2	0.2	-0.2	
87	A	2601-OL		-0.5	-0.4	-0.5	-0.5		-1.0	-0.4	-0.3	0.0	-0.1	0.4	
88		2601-OL													
89	A	2601-OL		1.1	1.2	1.2	1.2		1.9	0.3	0.3	0.2	0.2	0.5	
90	A	2601-OL													
91	A	2601-OL		-6.0	-6.0	-6.0	-6.0		-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	
92	A	2601-OL		0.4	0.5	0.5	0.5		0.8	0.6	0.3	-0.1	-0.1	0.0	
93	A	2601-OL		-0.3	-0.2	-0.3	-0.3		0.0	-0.1	0.1	-0.5	-0.2	-0.4	
94		2601-OL													
95	A	2601-OL		0.4	0.5	0.4	0.4		0.1	0.3	0.2	0.5	0.5	0.4	
96	A	2601-OL		-0.5	-0.5	-0.5	-0.5		-0.6	-0.2	0.0	-0.4	-0.1	-0.5	
97		2601-OL													
98	A	2601-OL		-1.9	-1.8	-1.9	-1.9		-0.6	-1.3	-0.8	-0.5	-2.3	-3.9	
99	A	2601-OL		0.8		0.9	0.9		2.9	0.0	-0.9	-0.5	-0.4	-0.7	
100	A	2601-OL		-1.4	-1.4	-1.4	-1.4		-2.6	-1.3	-0.4	-0.1	0.6	-0.3	
101	A	2601-OL													
102	A	2601-OL		-0.9	-0.9	-0.9	-0.9		0.0	-1.5	-1.1	-1.1	-1.1	-0.6	
103	A	2601-OL		-0.6	-0.6	-0.6	-0.6		0.0	-2.1	-1.4	-0.9	-1.2	0.8	
104	A	2601-OL		0.0	0.1	0.1	0.1		0.5	0.0	0.1	-0.1	-0.2	-0.2	
105	A	2601-OL		0.5	0.5	0.5	0.5		0.6	0.6	0.1	0.3	0.1	0.2	
106	A	2601-OL		-0.1	0.0	0.0	0.0		0.6	-0.7	-0.4	-0.1	-0.3	-0.6	
107	A	2601-OL													
108	A	2601-OL		0.2	0.3	0.2	0.2		-0.4	0.7	0.4	0.8	0.6	0.0	
109	A	2601-OL		-2.1	-2.0	-1.2	-1.2		-1.4	0.2	-0.2	-1.0	-0.8	-0.8	
Additional sets															
24	B	2601-OL													
78	B	2601-OL													
81	B	2601-OL		0.5	0.6	0.6	0.6		0.1	0.9	0.4	0.6	0.7	0.4	
82	B	2601-OL													
Modification															
18*		2601-OL													
24*		2601-OL													
31*		2601-OL		-1.3	-1.2	-1.3	-1.3		-1.0	-1.1	-1.1	-0.9	-0.8	-0.9	
62*		2601-OL													

Olive oil (2601-OL)
Bioanalytical screening methods - Bioassay-scores

LC	Data set	Sample	Bioassay-score [σ_{bioassay} = 20 %]	PCDD/F + DL-PCB	PCDD/F	DL-PCB
1	A	2601-OL		-4.5		
2		2601-OL				
3	A	2601-OL		-4.6	0.4	-4.7
4	A	2601-OL				
5	A	2601-OL				
6	A	2601-OL				
7	A	2601-OL				
8	A	2601-OL				
9	A	2601-OL				
10	A	2601-OL				
11	A	2601-OL				
12	A	2601-OL				
13	A	2601-OL				
14	A	2601-OL				
15	A	2601-OL				
16	A	2601-OL				
17	A	2601-OL				
18	A	2601-OL				
19	A	2601-OL				
20	A	2601-OL				
21	A	2601-OL				
22	A	2601-OL				
23	A	2601-OL				
24	A	2601-OL				
25	A	2601-OL				
26	A	2601-OL				
27	A	2601-OL				
28	A	2601-OL				
29	A	2601-OL				
30	A	2601-OL				
31	A	2601-OL				
32	A	2601-OL		-4.4		
33	A	2601-OL				
34	A	2601-OL				
35	A	2601-OL				
36	A	2601-OL				
37	A	2601-OL				
38	A	2601-OL				
39	A	2601-OL				
40	A	2601-OL				
41	A	2601-OL				
42	A	2601-OL				
43	A	2601-OL		-4.8	0.1	-4.9
44	A	2601-OL				
45	A	2601-OL				
46	A	2601-OL				
47	A	2601-OL				
48	A	2601-OL				
49	A	2601-OL		-4.9		
50	A	2601-OL				
51	A	2601-OL				
52	A	2601-OL				
53	A	2601-OL				
54	A	2601-OL				
55	A	2601-OL				
56	A	2601-OL				
57	A	2601-OL				
58	A	2601-OL				
59	A	2601-OL				
60	A	2601-OL				
61	A	2601-OL				
62	A	2601-OL				
63	A	2601-OL				
64	A	2601-OL				
65	A	2601-OL				
66		2601-OL				
67	A	2601-OL				



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]
EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)
Bioanalytical screening methods - Bioassay-scores

LC	Data set	Sample	Bioassay-score [σ_{bioassay} = 20 %]	PCDD/F + DL-PCB	PCDD/F	DL-PCB	
68	A	2601-OL					
69	A	2601-OL					
70	A	2601-OL					
71	A	2601-OL					
72	A	2601-OL					
73	A	2601-OL					
74	A	2601-OL					
75	A	2601-OL					
76	A	2601-OL					
77	A	2601-OL					
78	A	2601-OL					
79	A	2601-OL					
80	A	2601-OL					
81	A	2601-OL					
82	A	2601-OL			-4.8		
83	A	2601-OL					
84	A	2601-OL					
85	A	2601-OL					
86	A	2601-OL					
87	A	2601-OL					
88		2601-OL					
89	A	2601-OL					
90	A	2601-OL					
91	A	2601-OL					
92	A	2601-OL					
93	A	2601-OL					
94		2601-OL					
95	A	2601-OL					
96	A	2601-OL					
97		2601-OL					
98	A	2601-OL					
99	A	2601-OL					
100	A	2601-OL					
101	A	2601-OL			-4.9	0.3	-5.0
102	A	2601-OL					
103	A	2601-OL					
104	A	2601-OL					
105	A	2601-OL					
106	A	2601-OL			-4.7		
107	A	2601-OL					
108	A	2601-OL					
109	A	2601-OL					
Additional sets							
24	B	2601-OL					
78	B	2601-OL					
81	B	2601-OL					
82	B	2601-OL			-4.8		
Modification							
18*		2601-OL					
24*		2601-OL					
31*		2601-OL					
62*		2601-OL					



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

07 August 2026

Annex 4: Participants' z-scores of PCDD/Fs and PCBs - Charts

Test sample - Olive oil (2601-OL)

Z-scores of sum parameters and individual results

Calculation of z-score on basis of assigned value

$$z = (x - x_a) / \sigma_{\text{prel}} \cdot x_a$$

x_a : assigned value

x : participant's result

σ_{prel} : relative fitness-for-purpose-based standard deviation for proficiency assessment

10%: WHO-PCDD/F-TEQ, WHO-PCB-TEQ and WHO-PCDD/F-PCB-TEQ

15%: Sum of six indicator PCBs (PCB 28, 52, 101, 138, 153, 180)

20%: Evaluated individual PCDD/F and PCB congeners

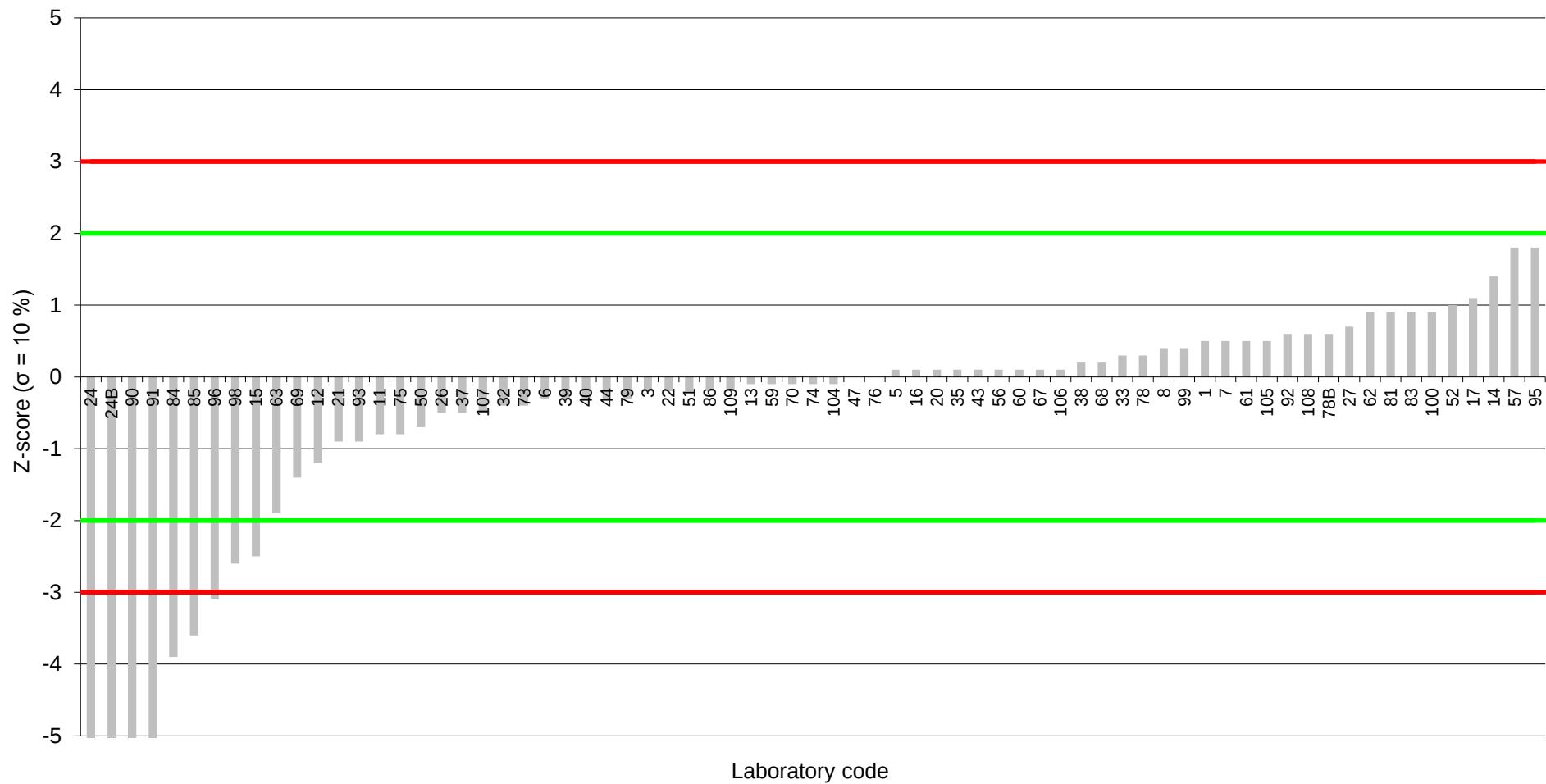
± 2 z-scores: —

± 3 z-scores: —

Olive oil (2601-OL)

WHO-PCDD/F-PCB-TEQ upper bound (reported)

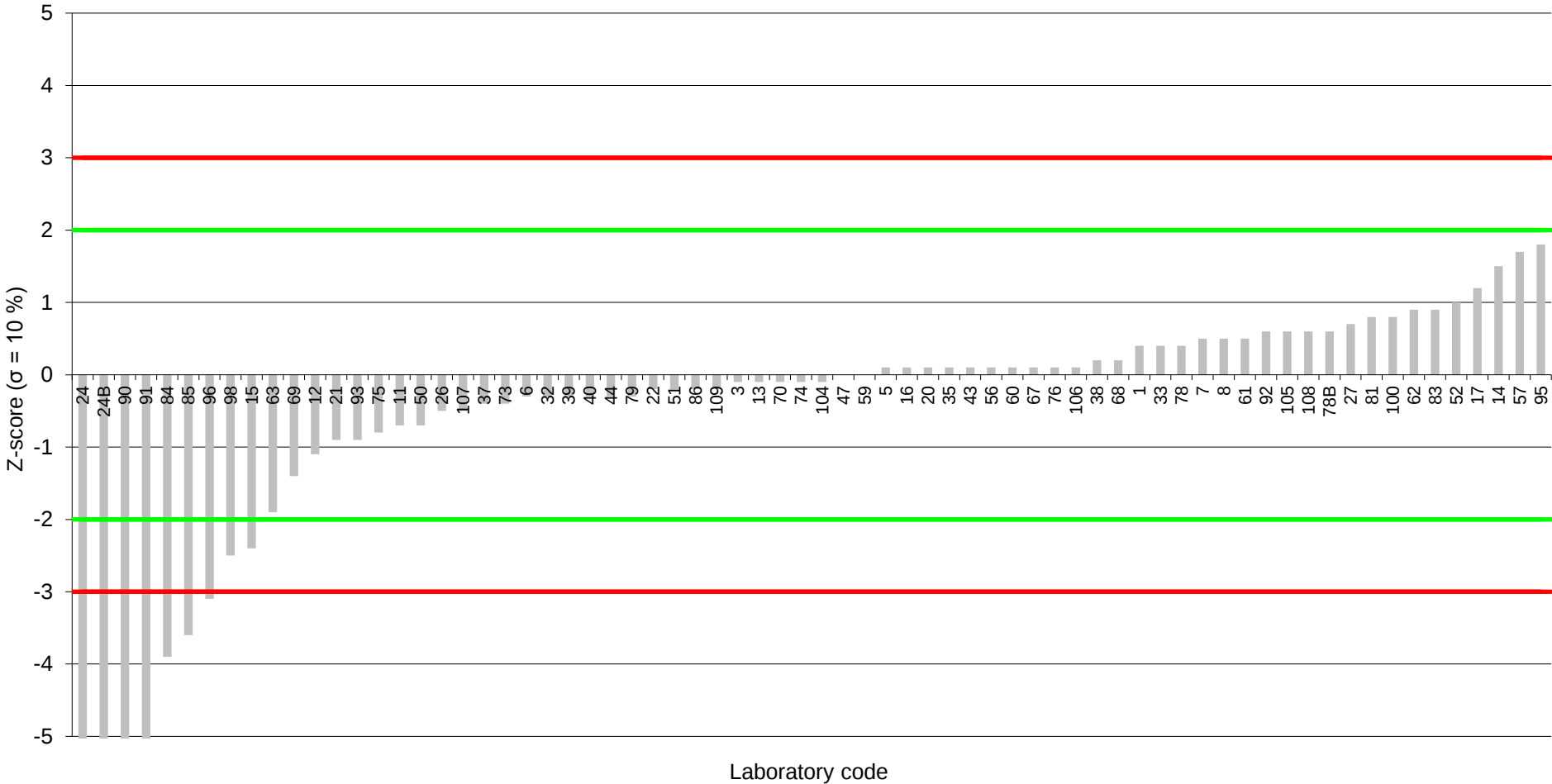
Assigned value: 38.2 pg/g fat



Olive oil (2601-OL)

WHO-PCDD/F-PCB-TEQ lower bound (reported)

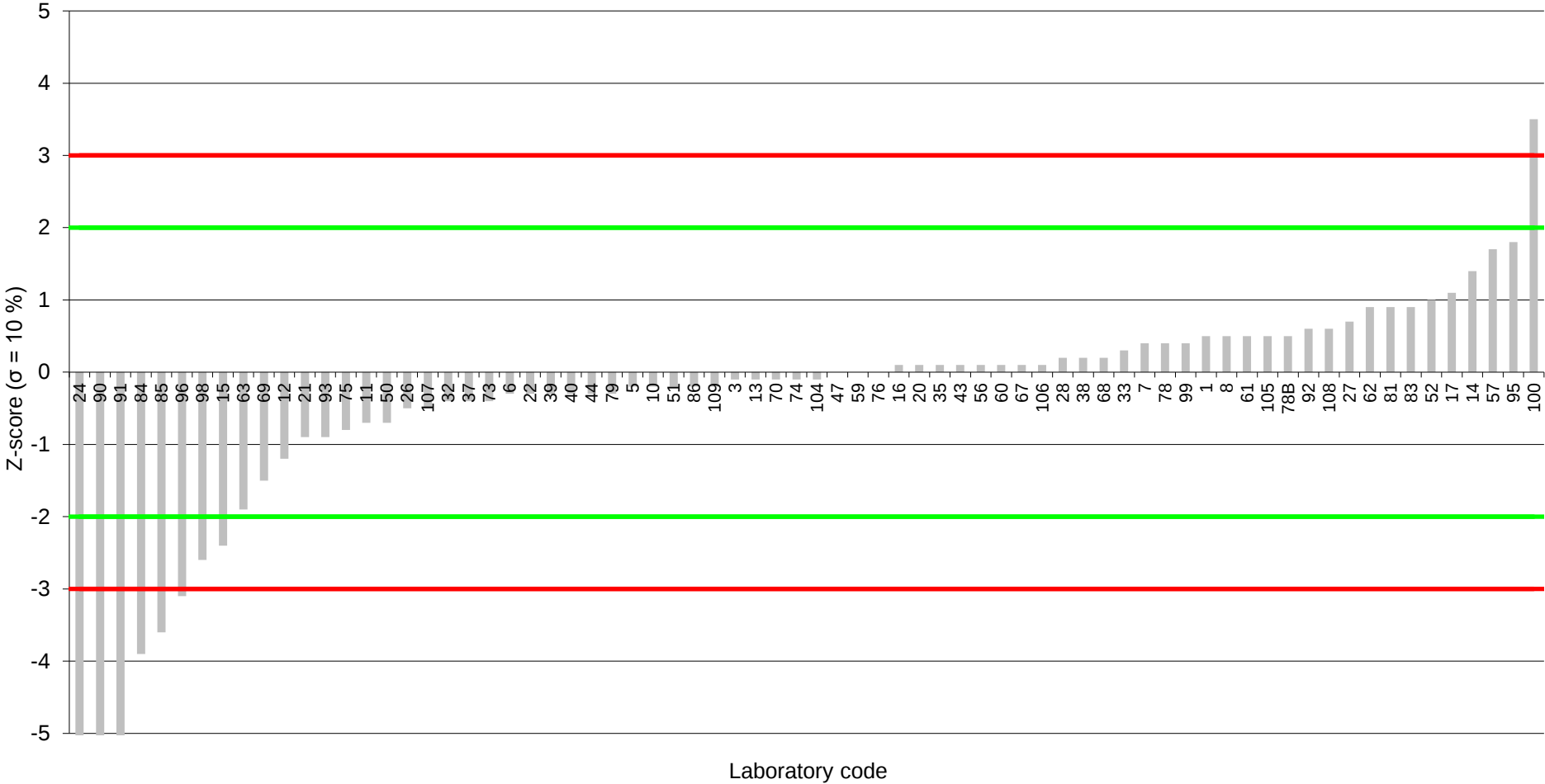
Assigned value: 38.1 pg/g fat



Olive oil (2601-OL)

WHO-PCDD/F-PCB-TEQ upper bound (calculated)

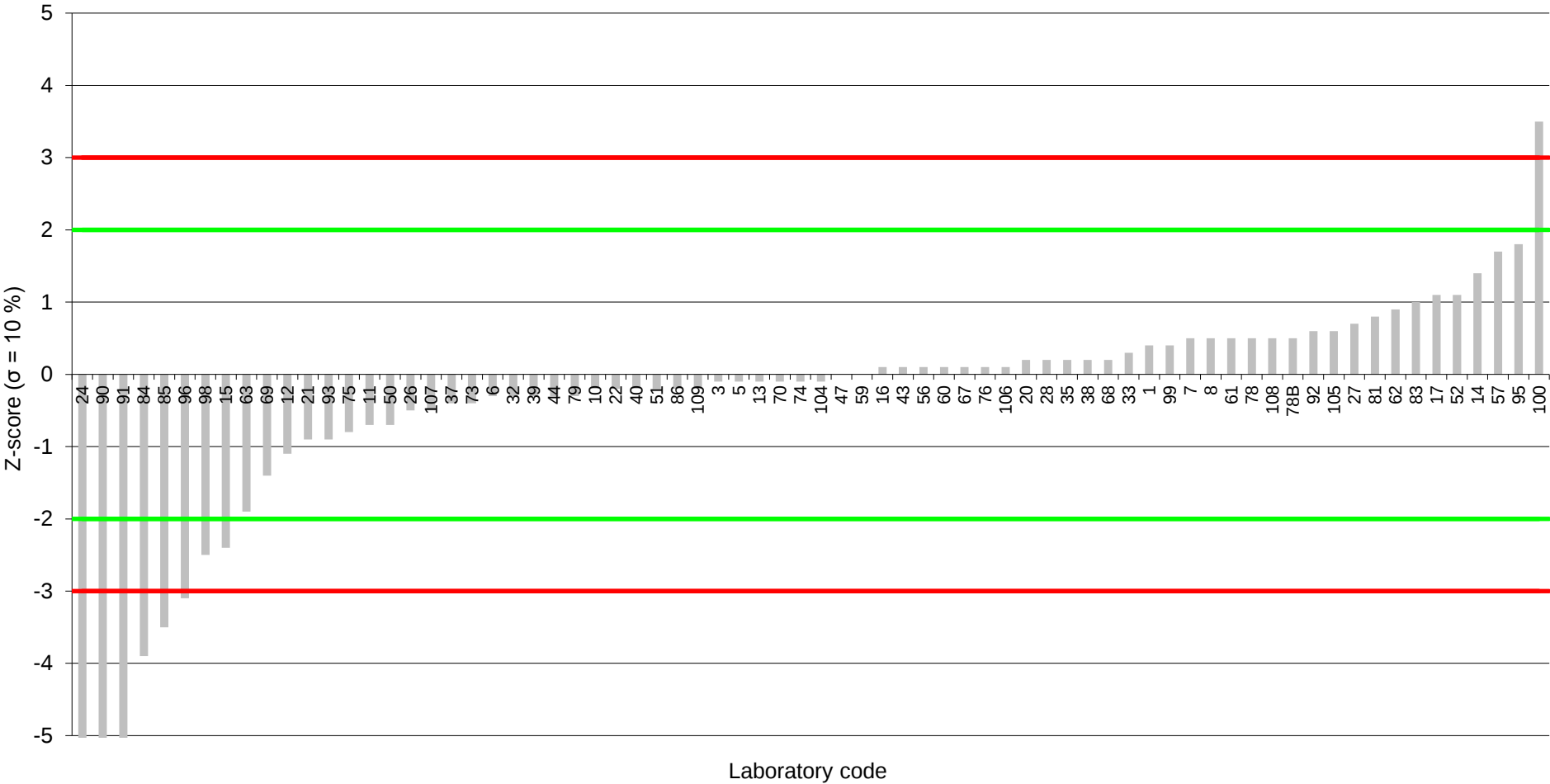
Assigned value: 38.2 pg/g fat



Olive oil (2601-OL)

WHO-PCDD/F-PCB-TEQ lower bound (calculated)

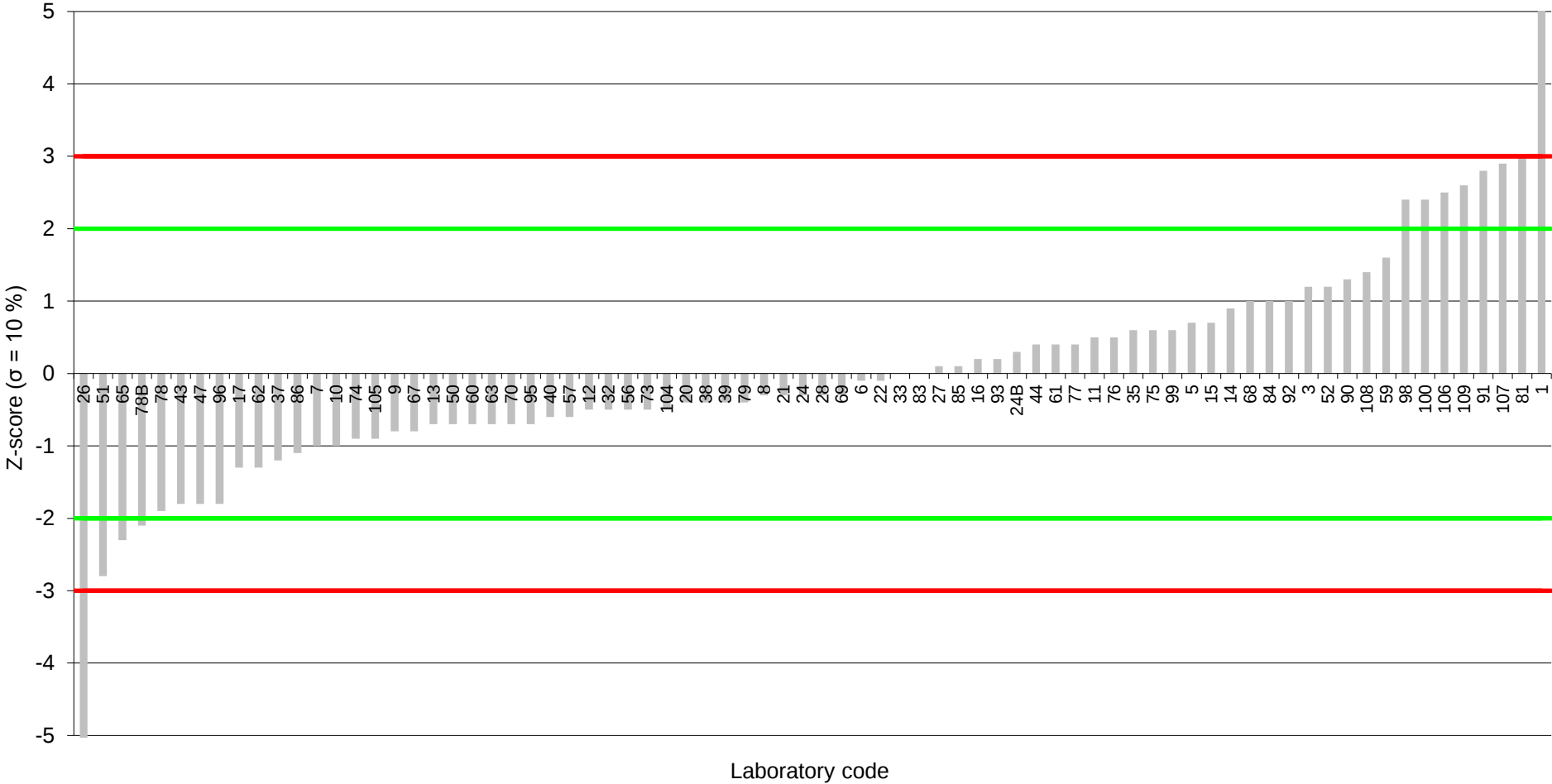
Assigned value: 38.1 pg/g fat



Olive oil (2601-OL)

WHO-PCDD/F-TEQ upper bound (reported)

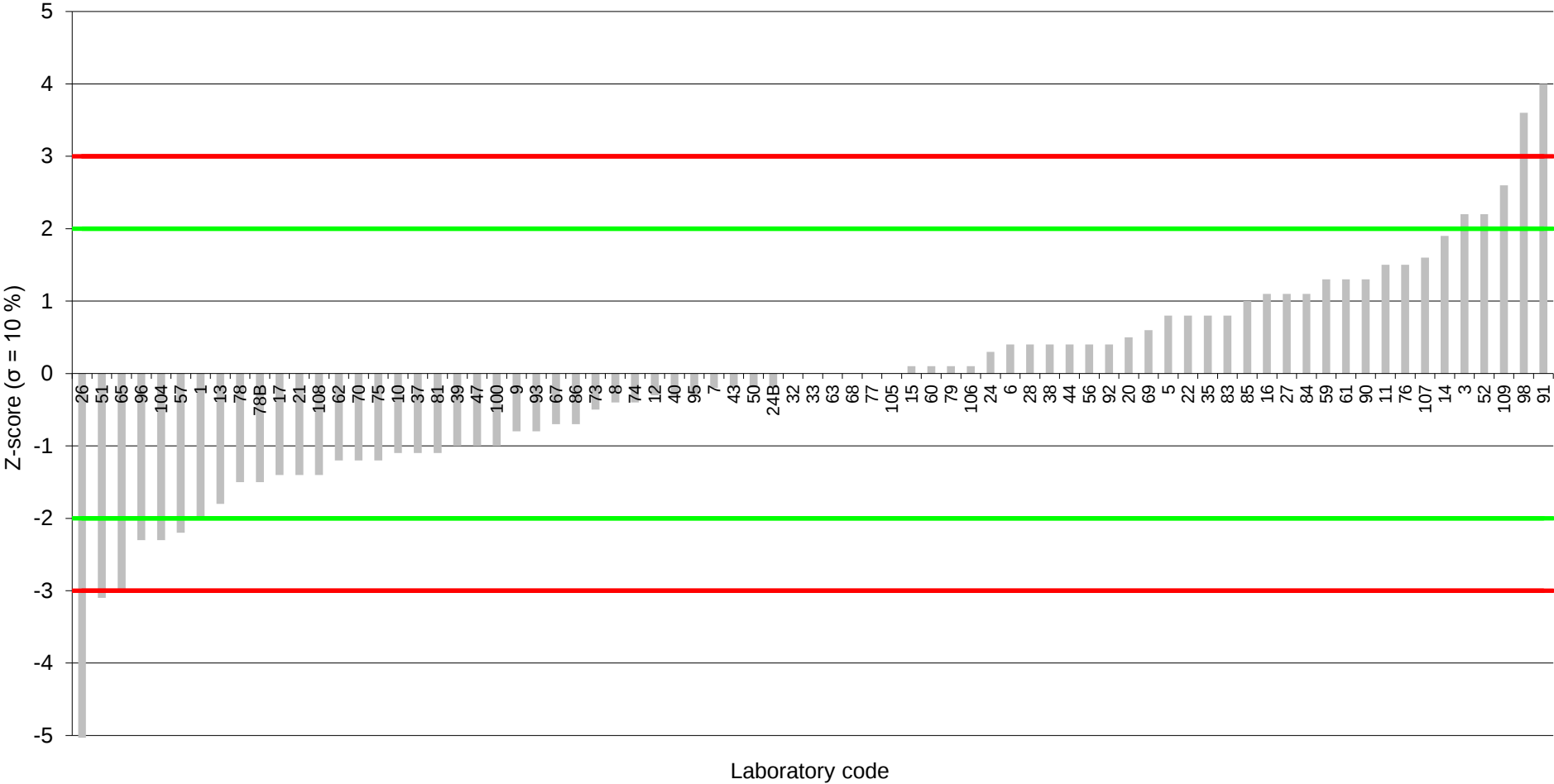
Assigned value: 0.670 pg/g fat



Olive oil (2601-OL)

WHO-PCDD/F-TEQ lower bound (reported)

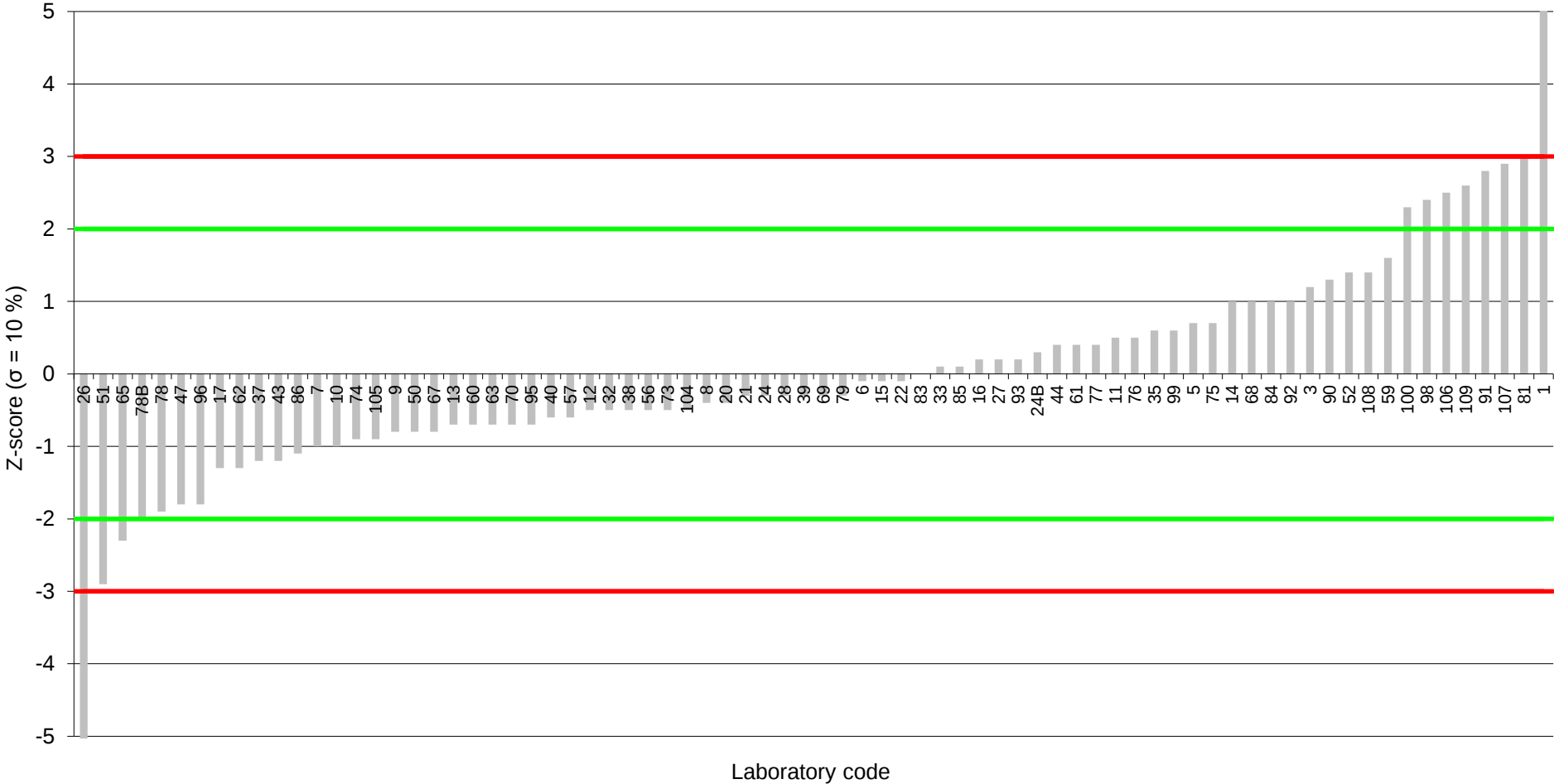
Assigned value: 0.613 pg/g fat



Olive oil (2601-OL)

WHO-PCDD/F-TEQ upper bound (calculated)

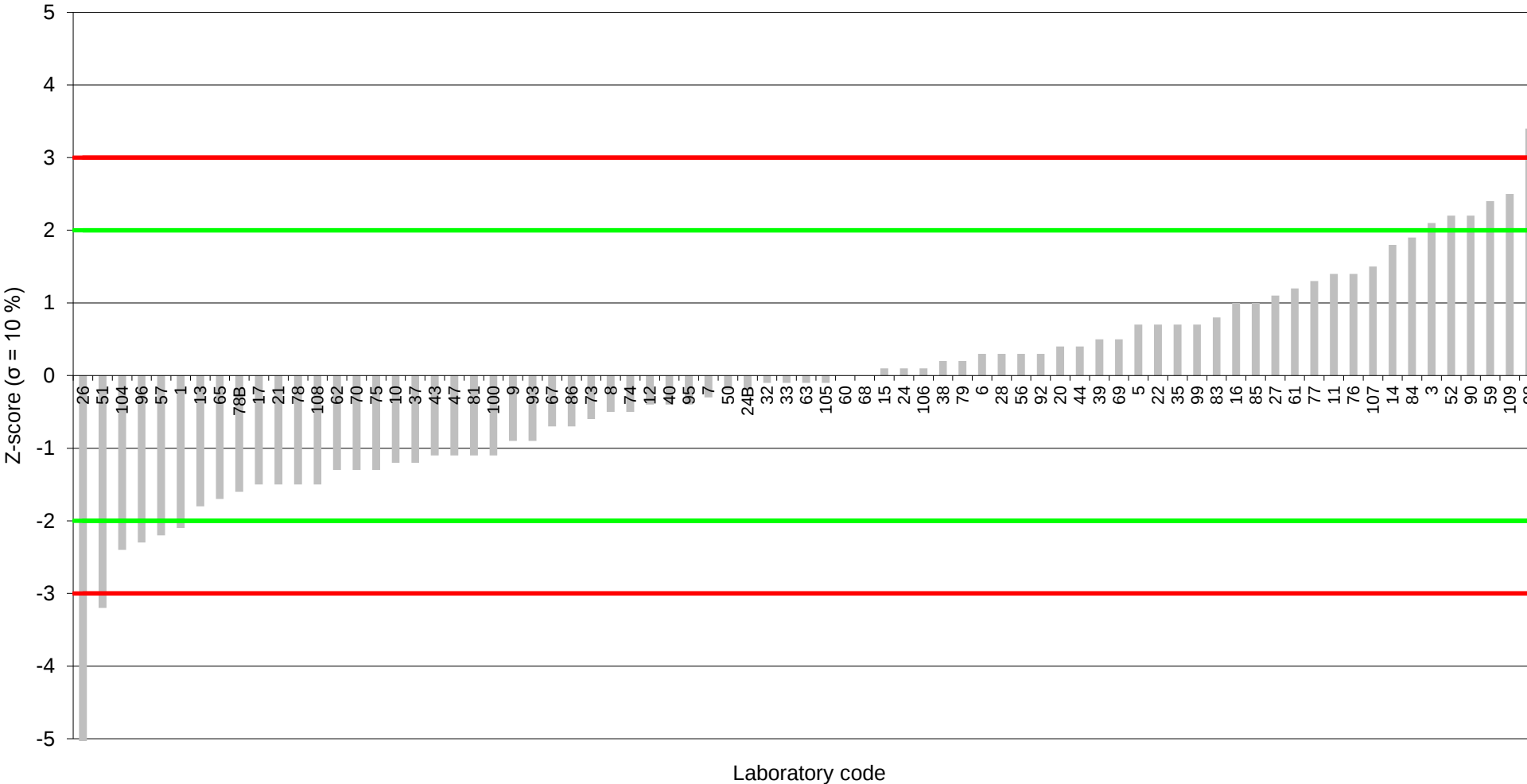
Assigned value: 0.670 pg/g fat



Olive oil (2601-OL)

WHO-PCDD/F-TEQ lower bound (calculated)

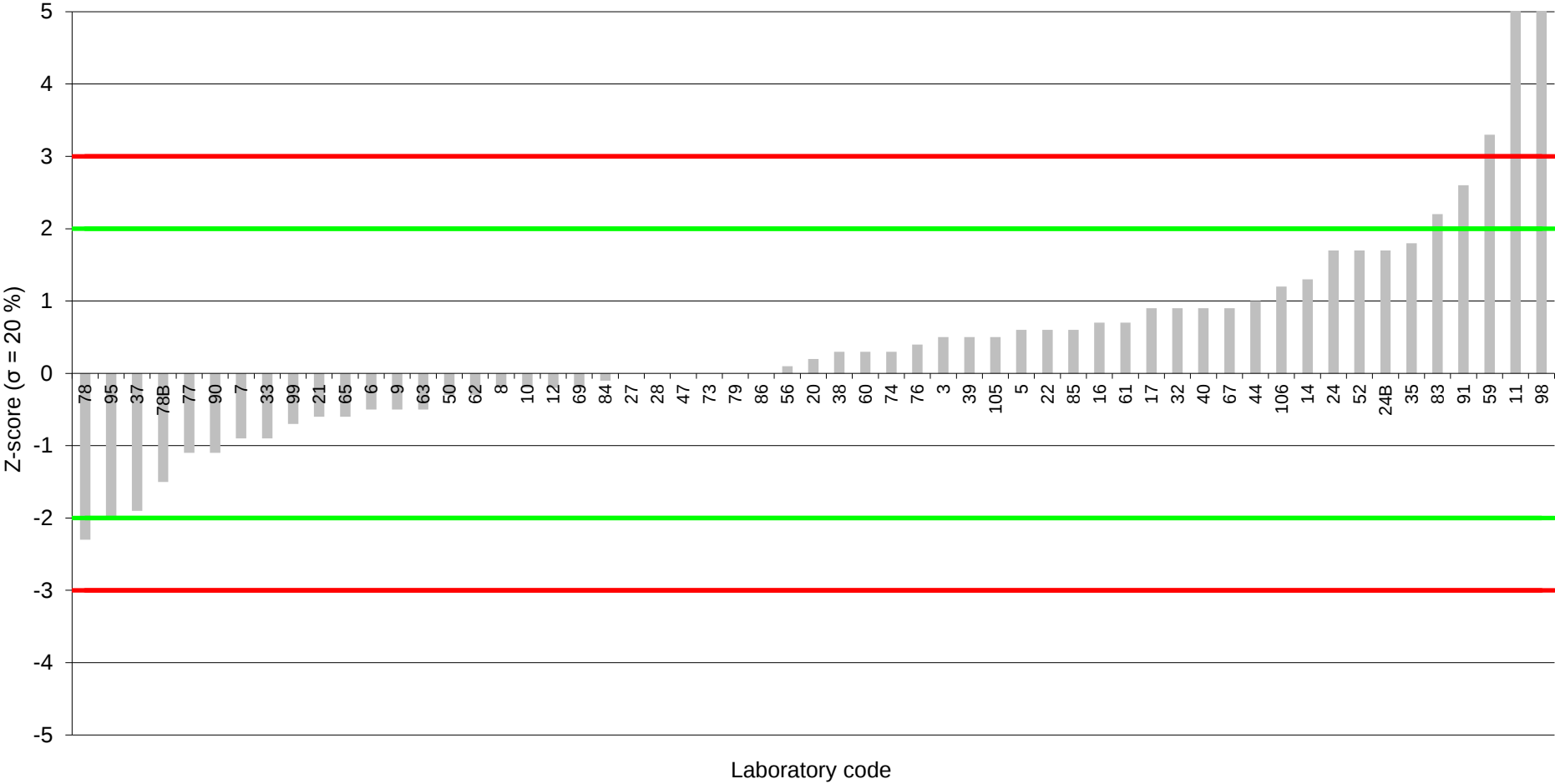
Assigned value: 0.618 pg/g fat



Olive oil (2601-OL)

1,2,3,7,8-PeCDD

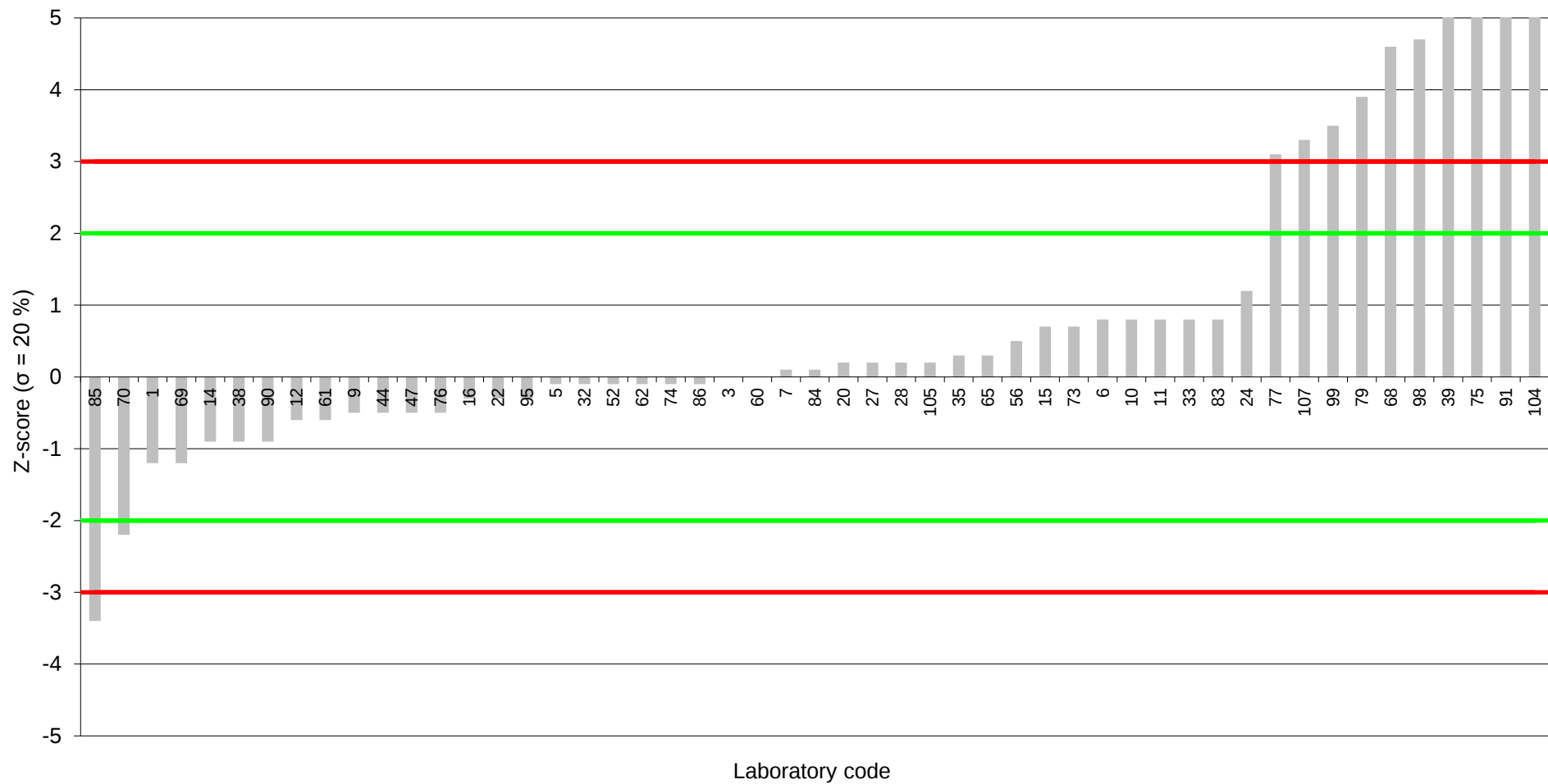
Assigned value: 0.0894 pg/g fat



Olive oil (2601-OL)

1,2,3,4,7,8-HxCDD

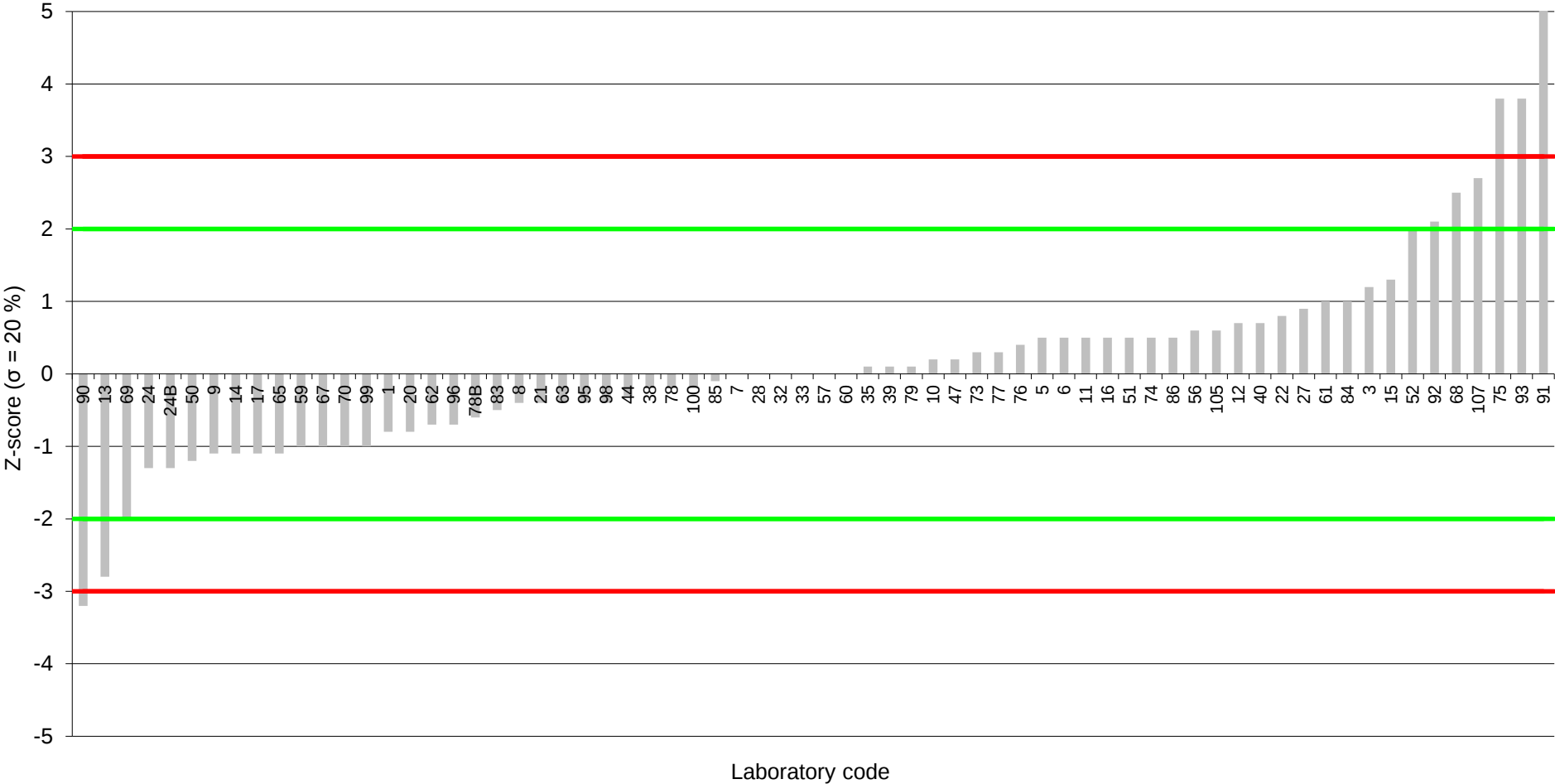
Assigned value: 0.0617 pg/g fat



Olive oil (2601-OL)

1,2,3,6,7,8-HxCDD

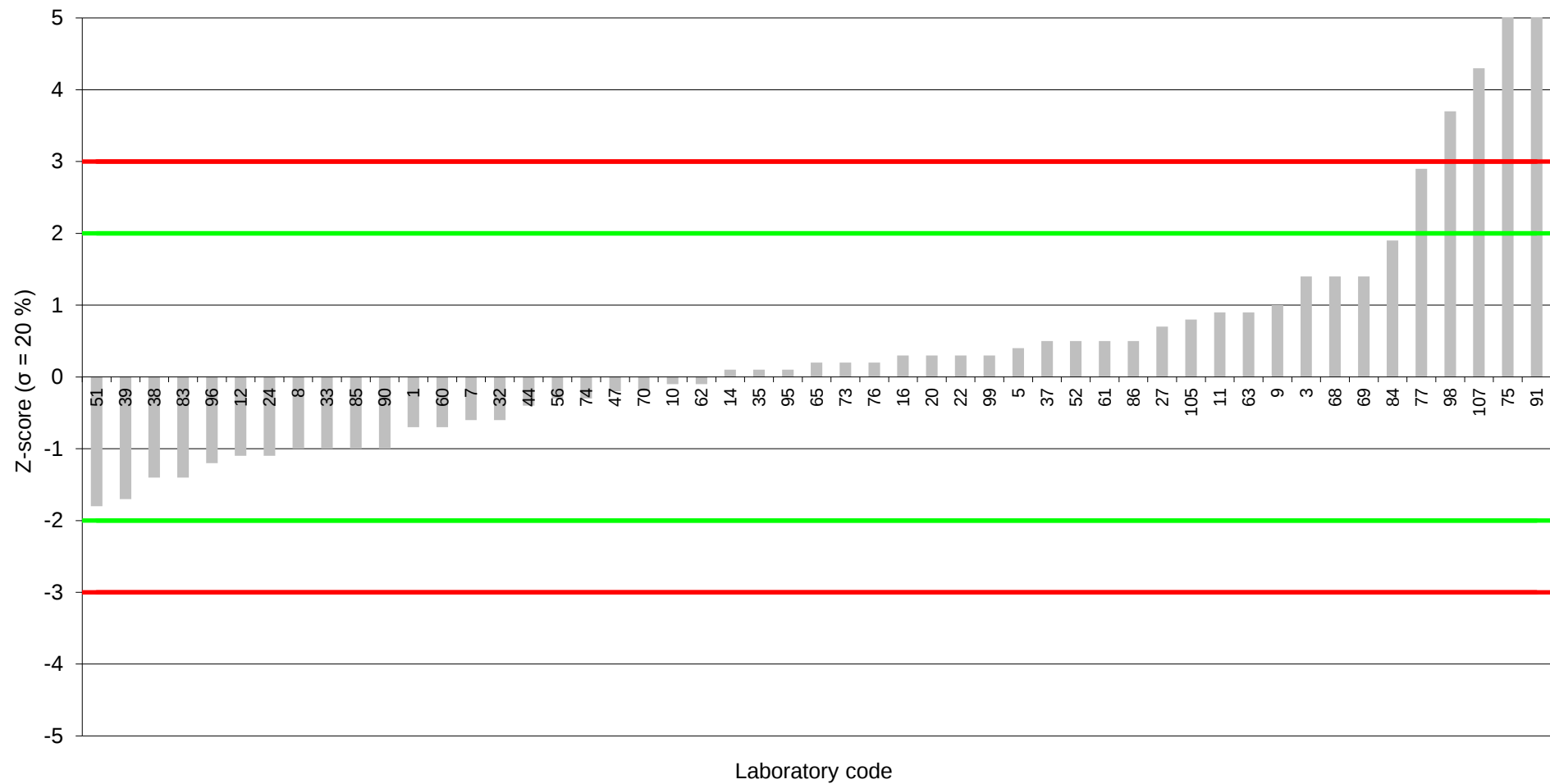
Assigned value: 0.136 pg/g fat



Olive oil (2601-OL)

1,2,3,7,8,9-HxCDD

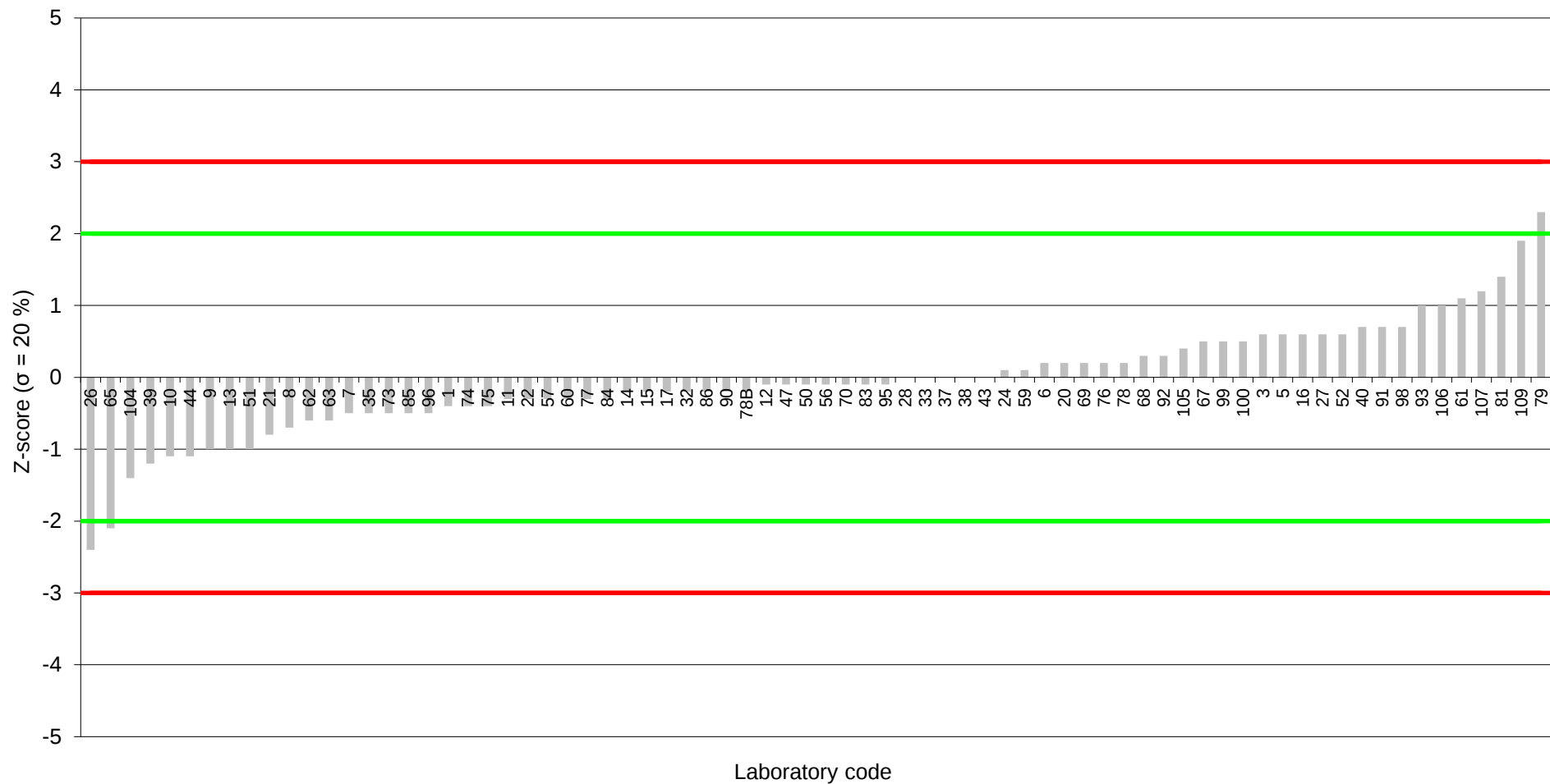
Assigned value: 0.0632 pg/g fat



Olive oil (2601-OL)

1,2,3,4,6,7,8-HpCDD

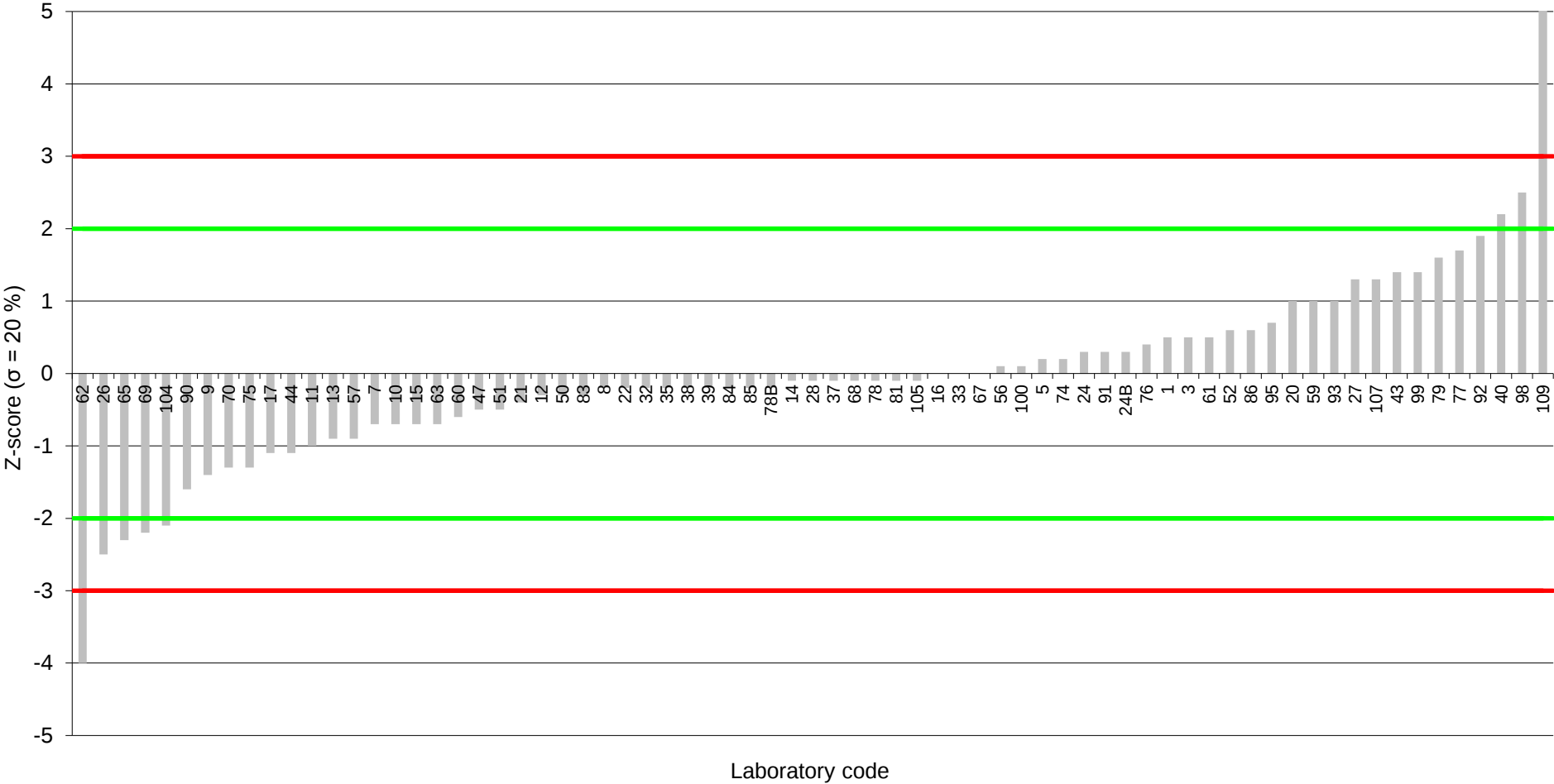
Assigned value: 0.420 pg/g fat



Olive oil (2601-OL)

OCDD

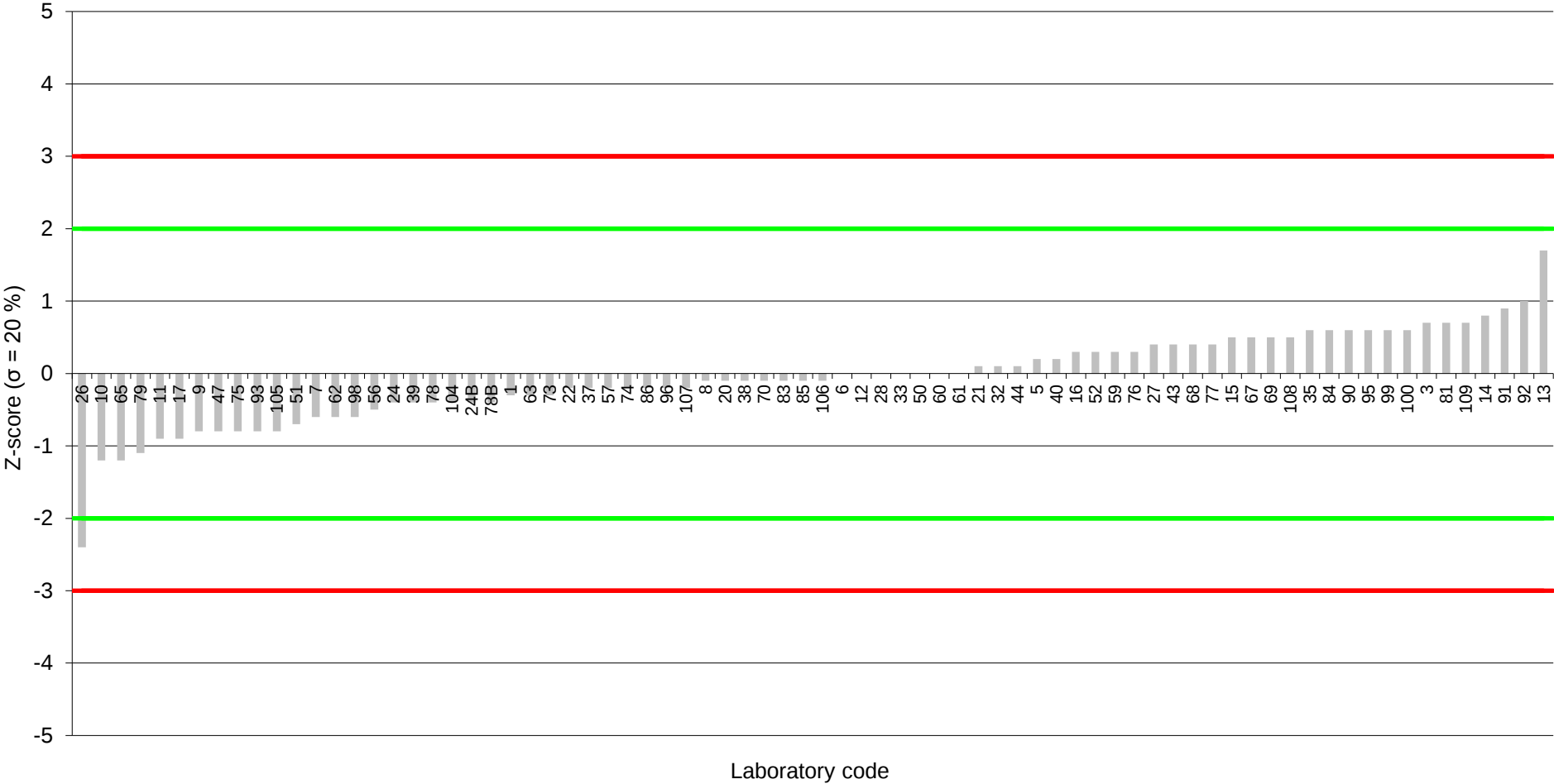
Assigned value: 0.861 pg/g fat



Olive oil (2601-OL)

2,3,7,8-TCDF

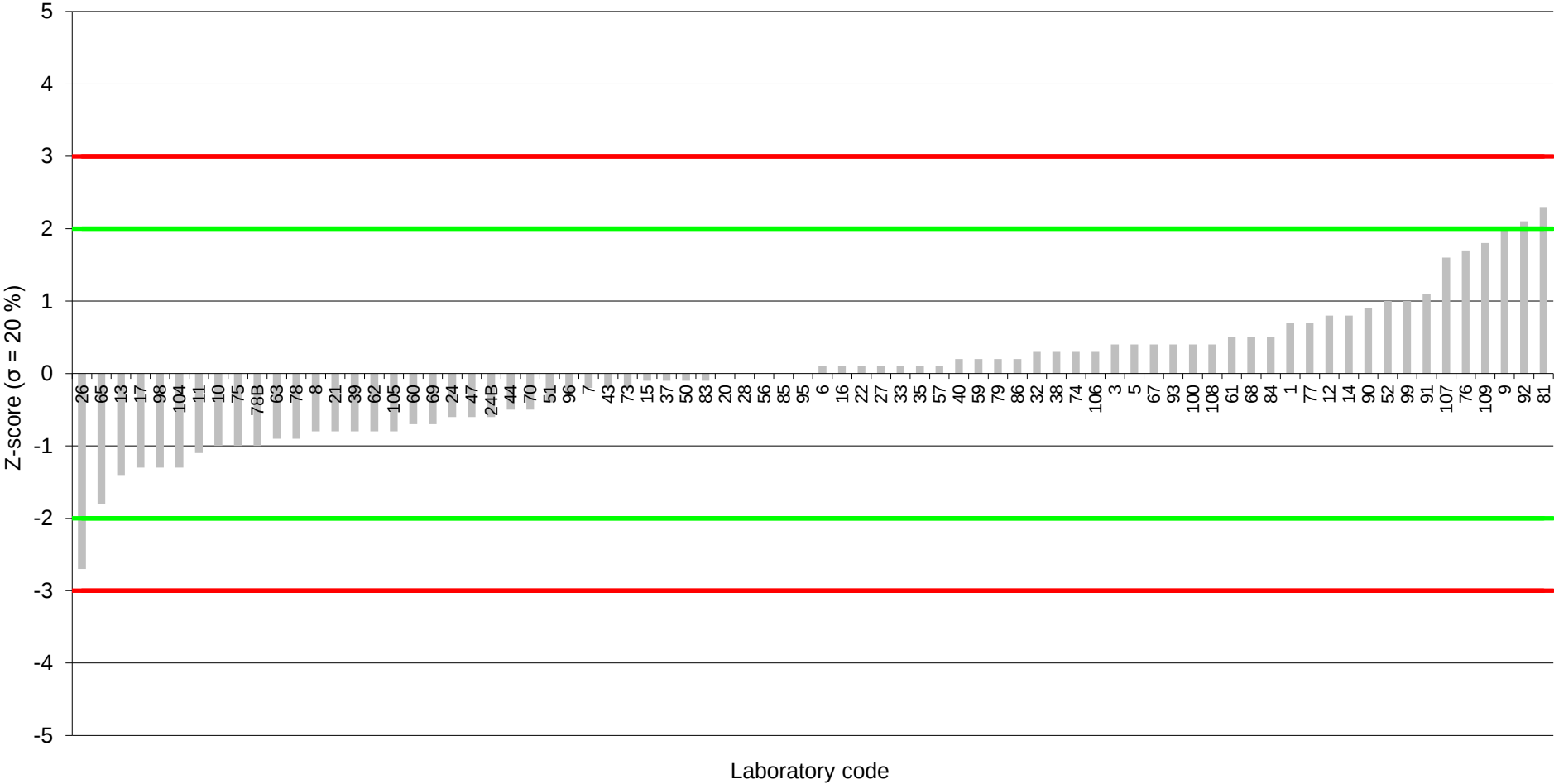
Assigned value: 1.63 pg/g fat



Olive oil (2601-OL)

1,2,3,7,8-PeCDF

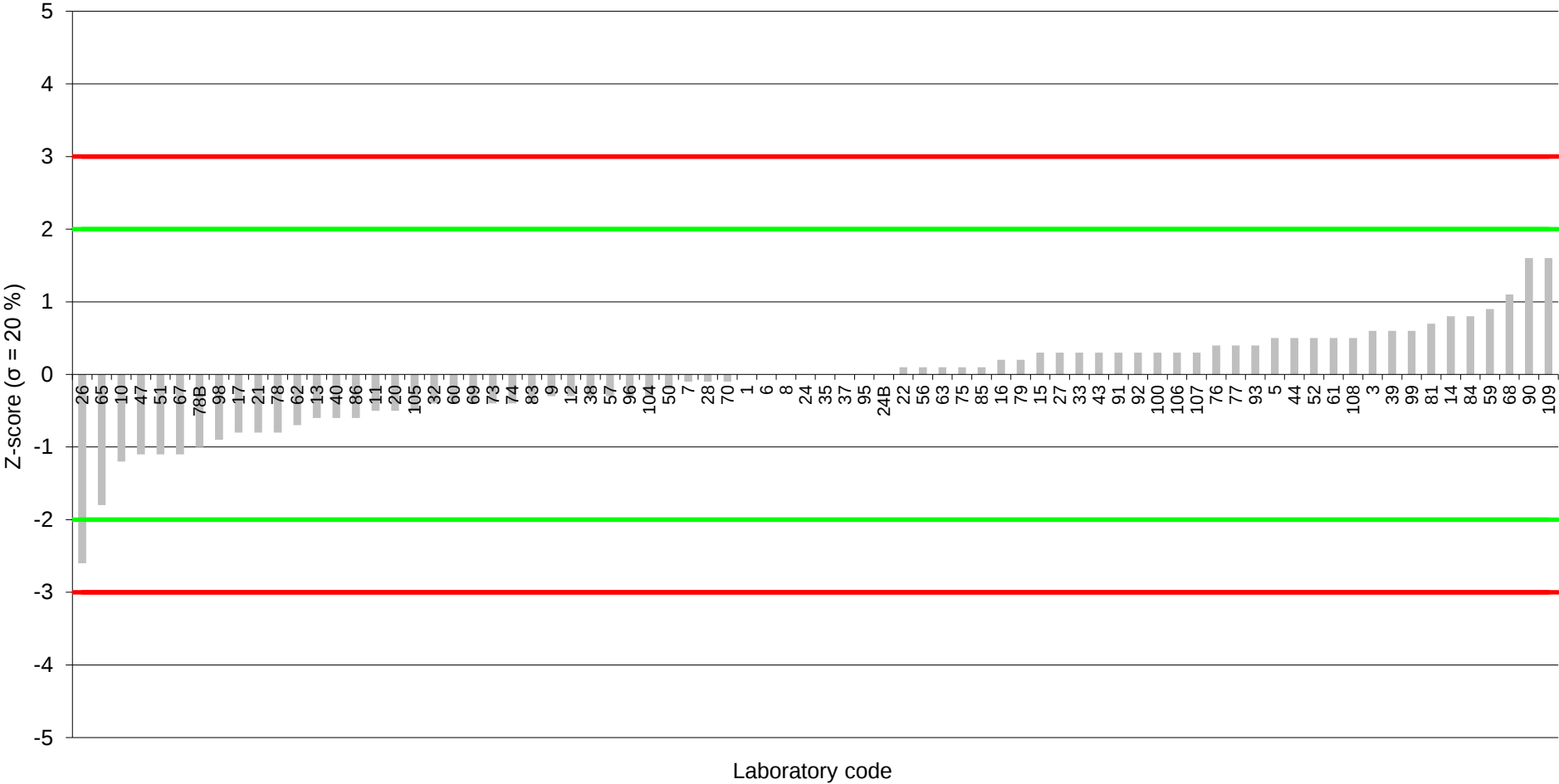
Assigned value: 0.405 pg/g fat



Olive oil (2601-OL)

2,3,4,7,8-PeCDF

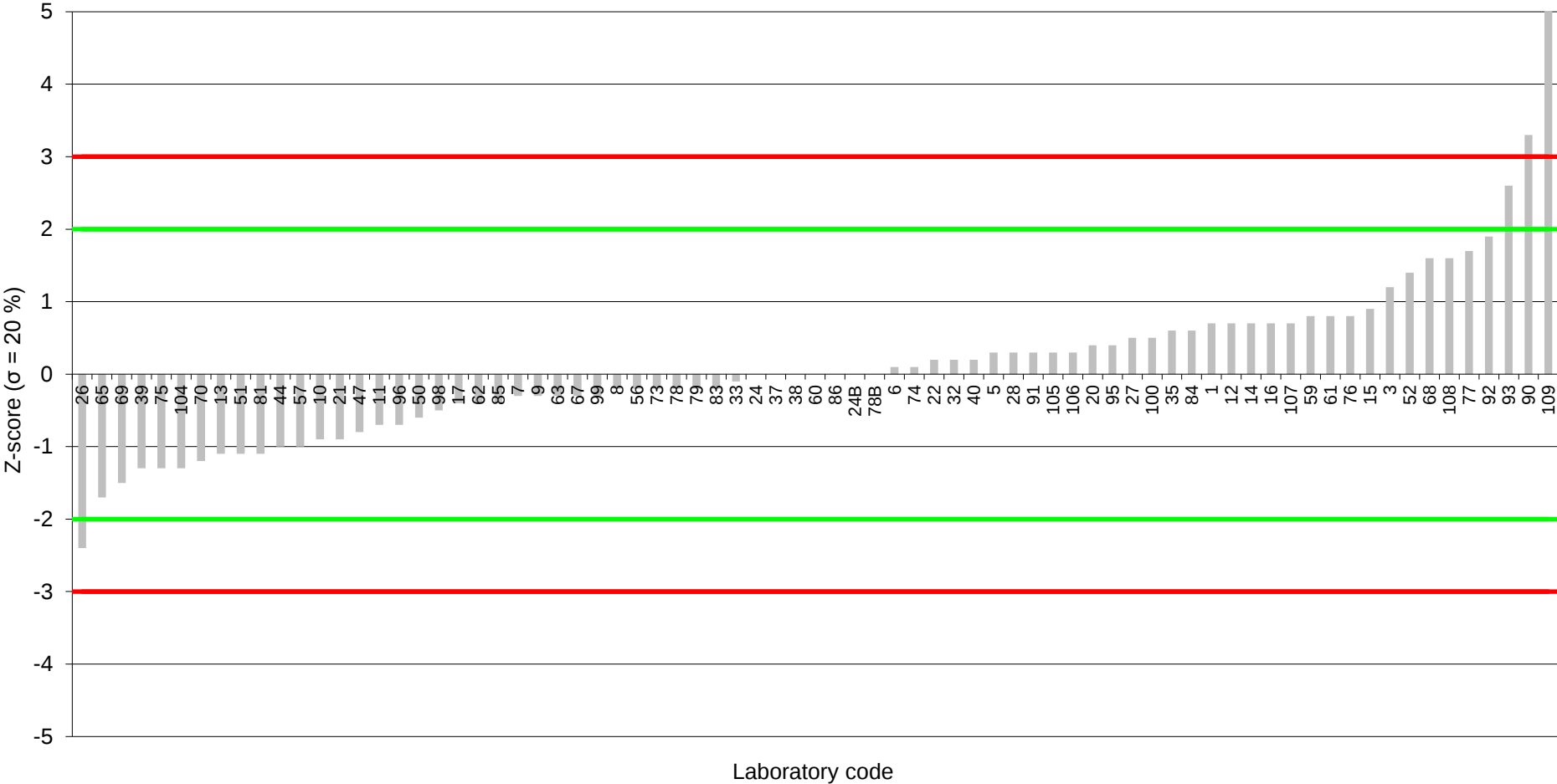
Assigned value: 0.844 pg/g fat



Olive oil (2601-OL)

1,2,3,4,7,8-HxCDF

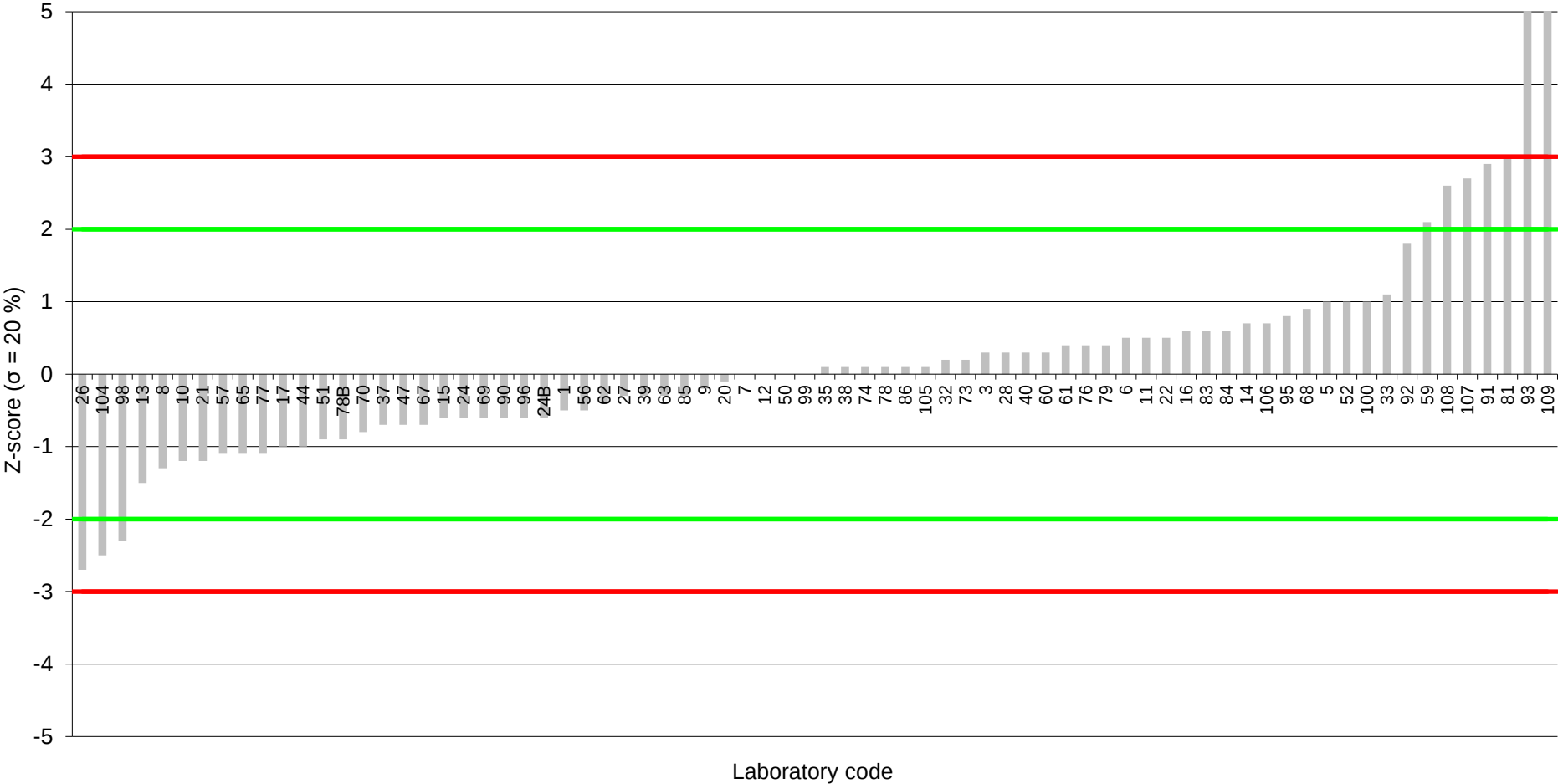
Assigned value: 0.272 pg/g fat



Olive oil (2601-OL)

1,2,3,6,7,8-HxCDF

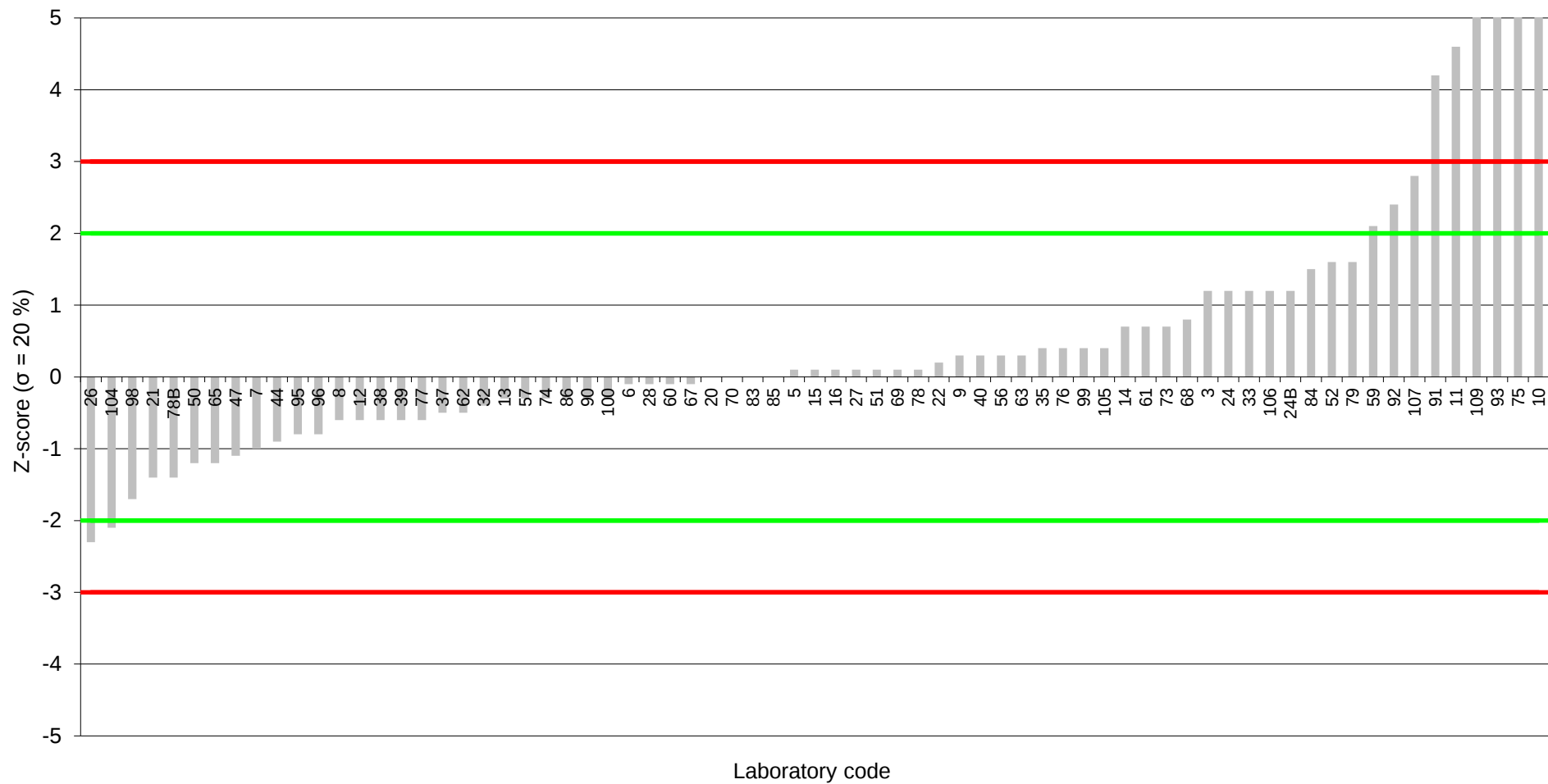
Assigned value: 0.158 pg/g fat



Olive oil (2601-OL)

2,3,4,6,7,8-HxCDF

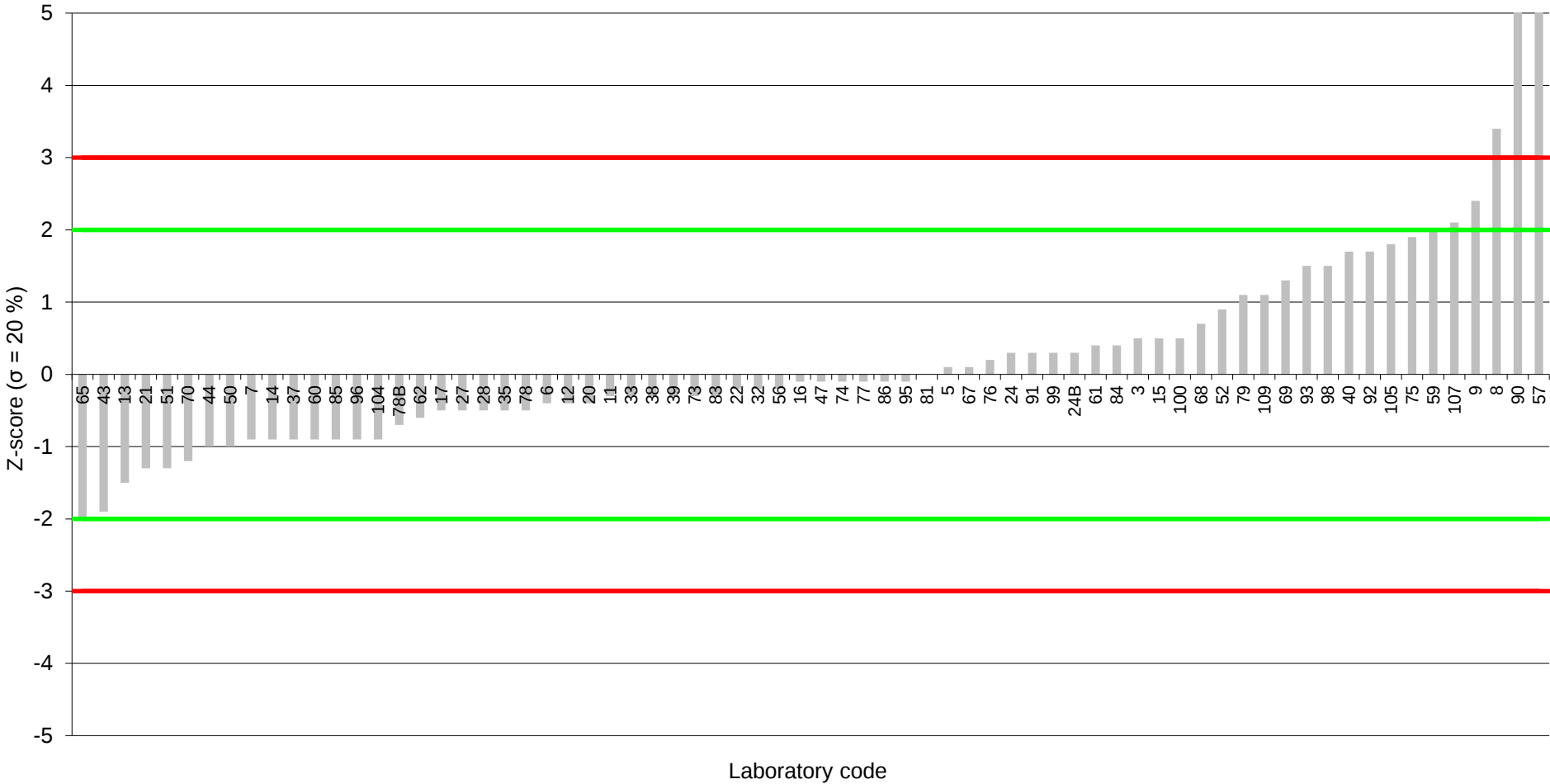
Assigned value: 0.137 pg/g fat



Olive oil (2601-OL)

1,2,3,4,6,7,8-HpCDF

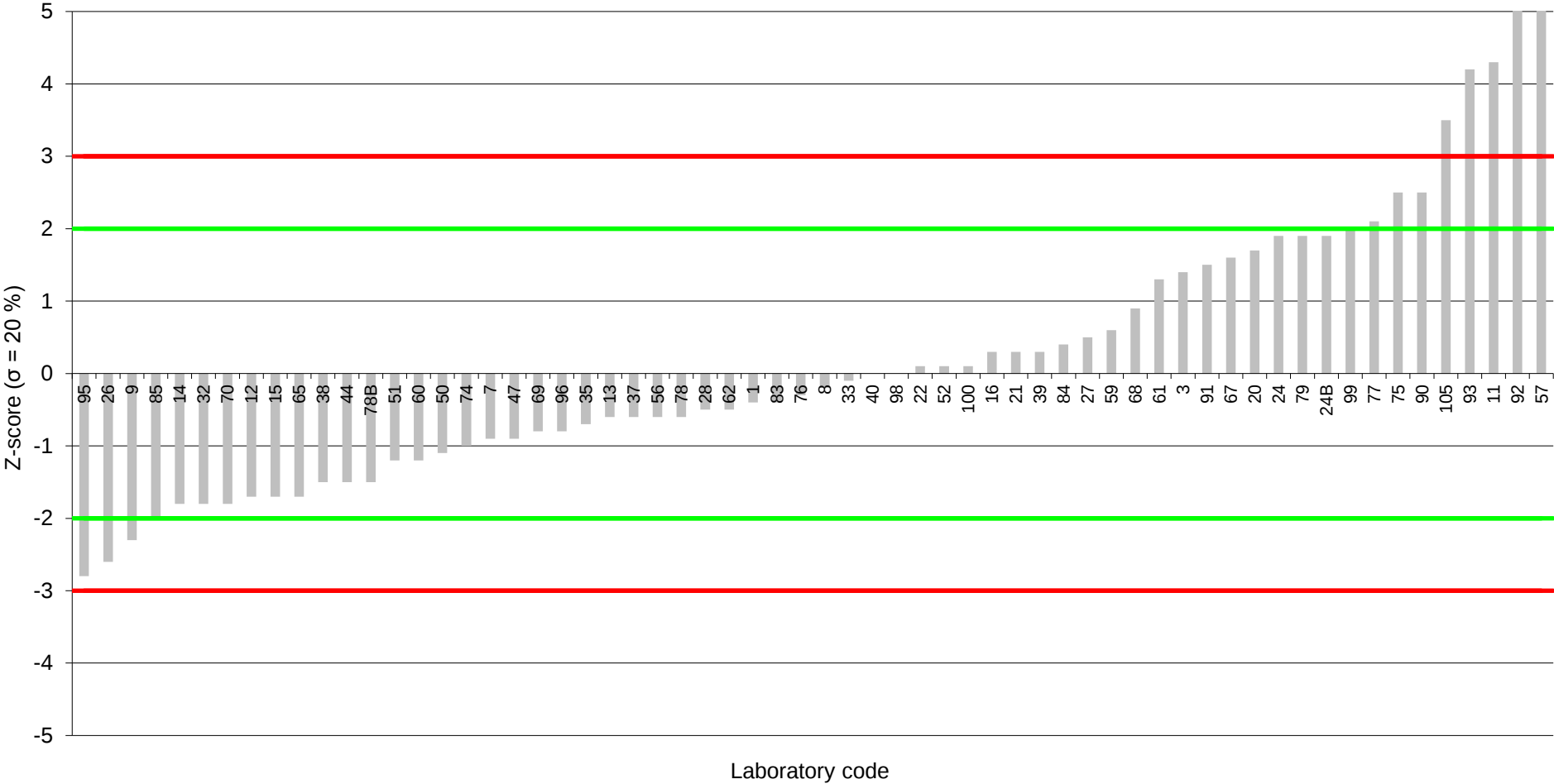
Assigned value: 0.246 pg/g fat



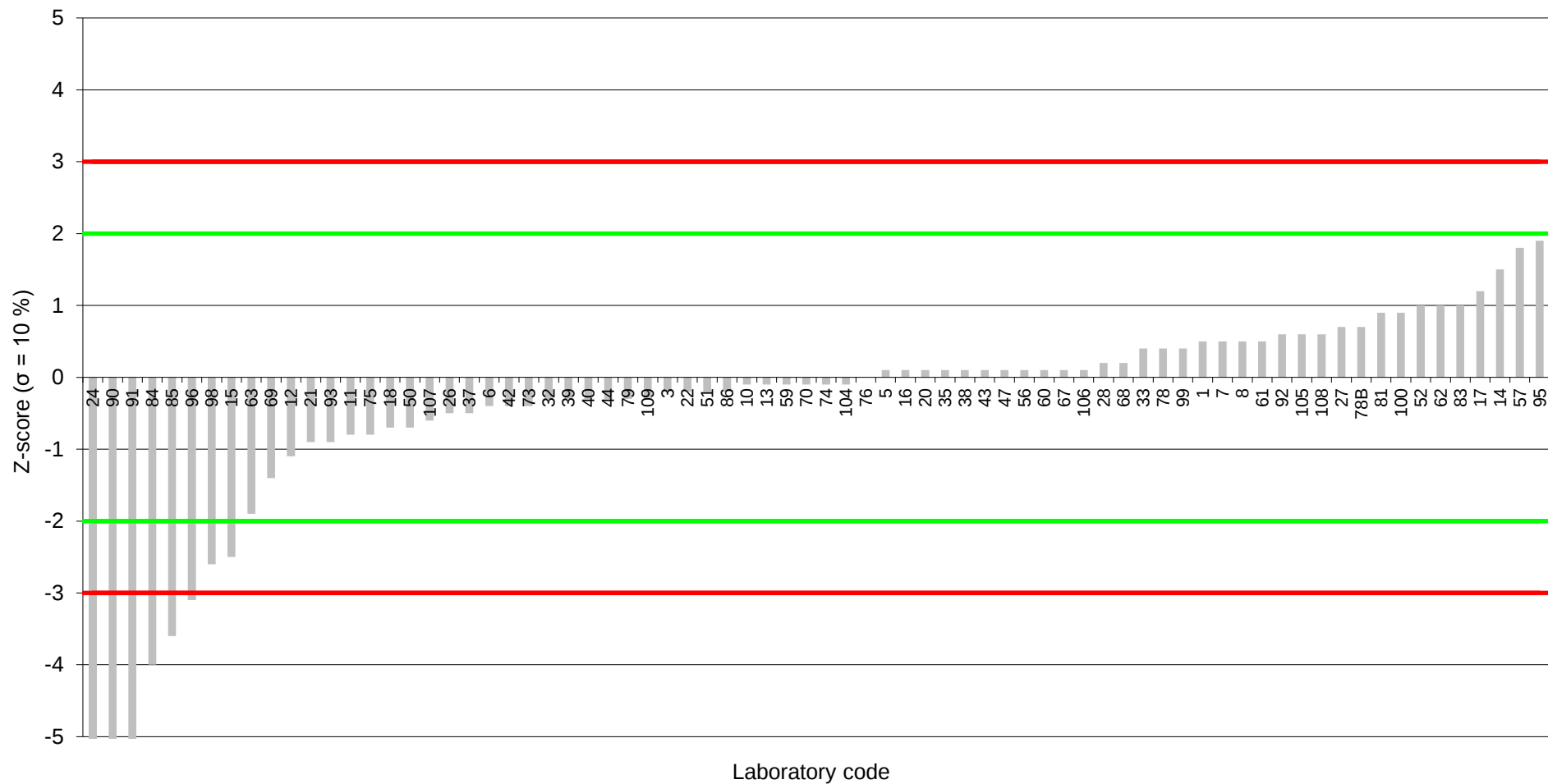
Olive oil (2601-OL)

OCDF

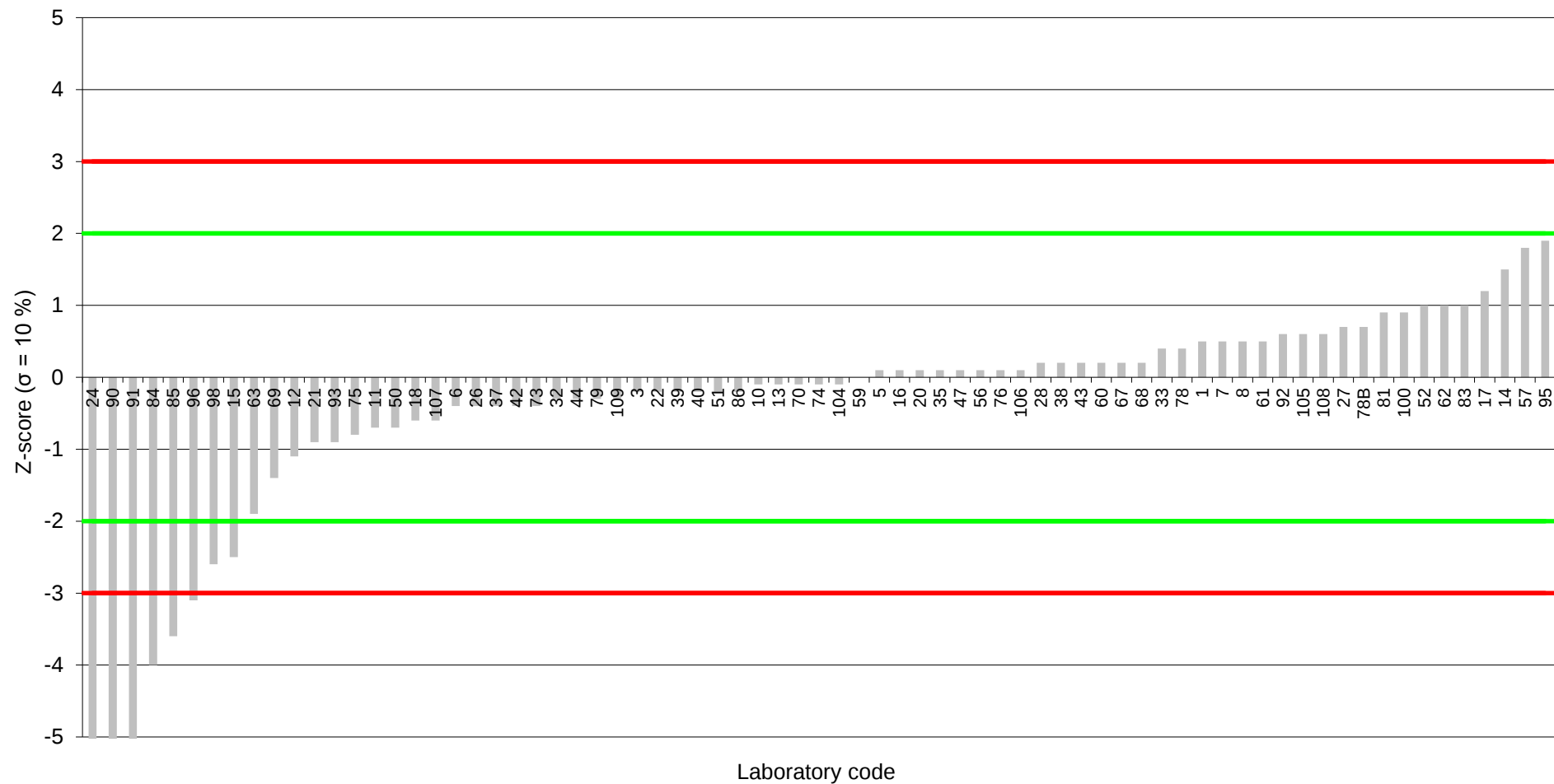
Assigned value: 0.226 pg/g fat



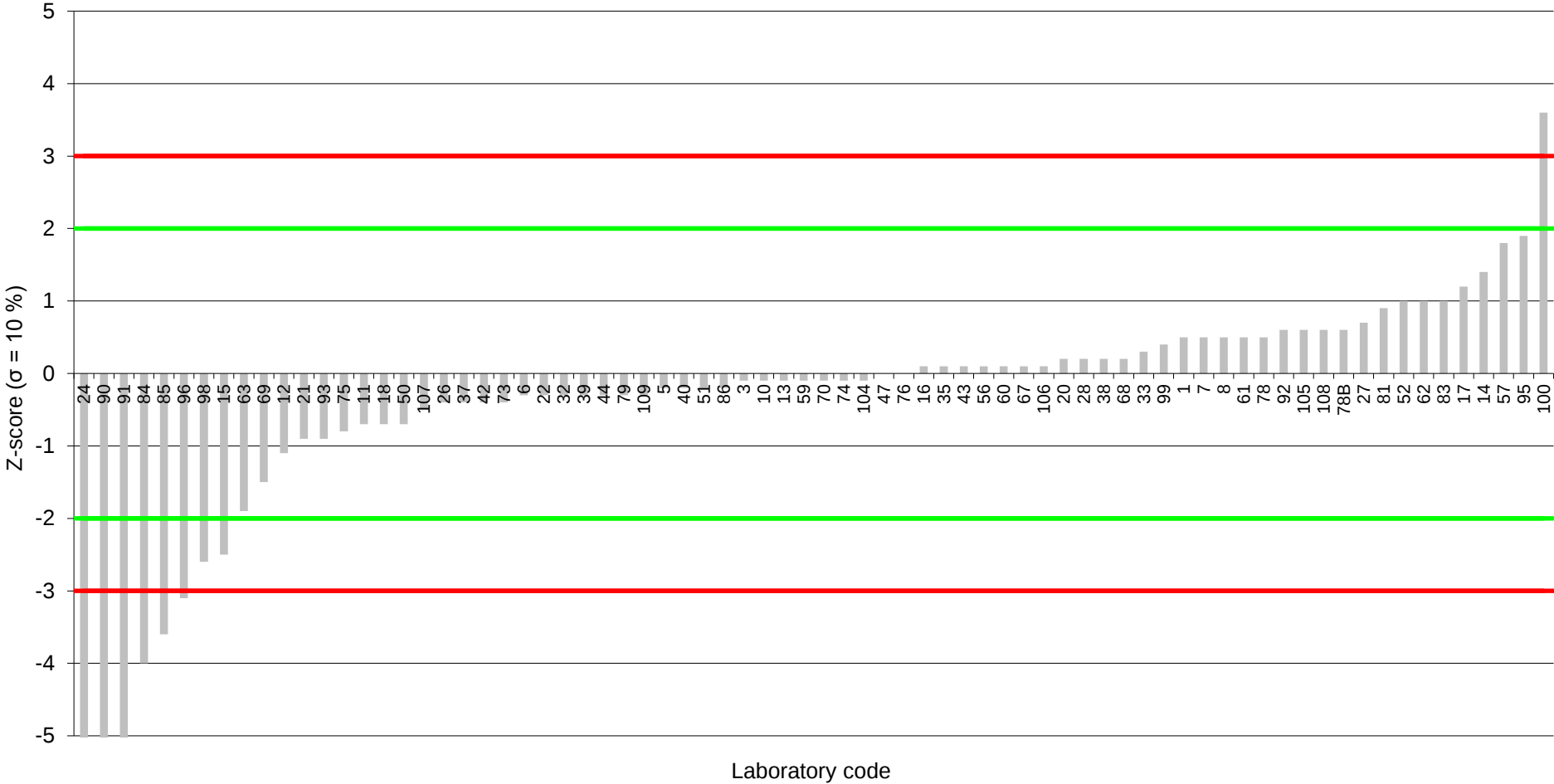
Olive oil (2601-OL)
WHO-PCB-TEQ upper bound (reported)
Assigned value: 37.5 pg/g fat



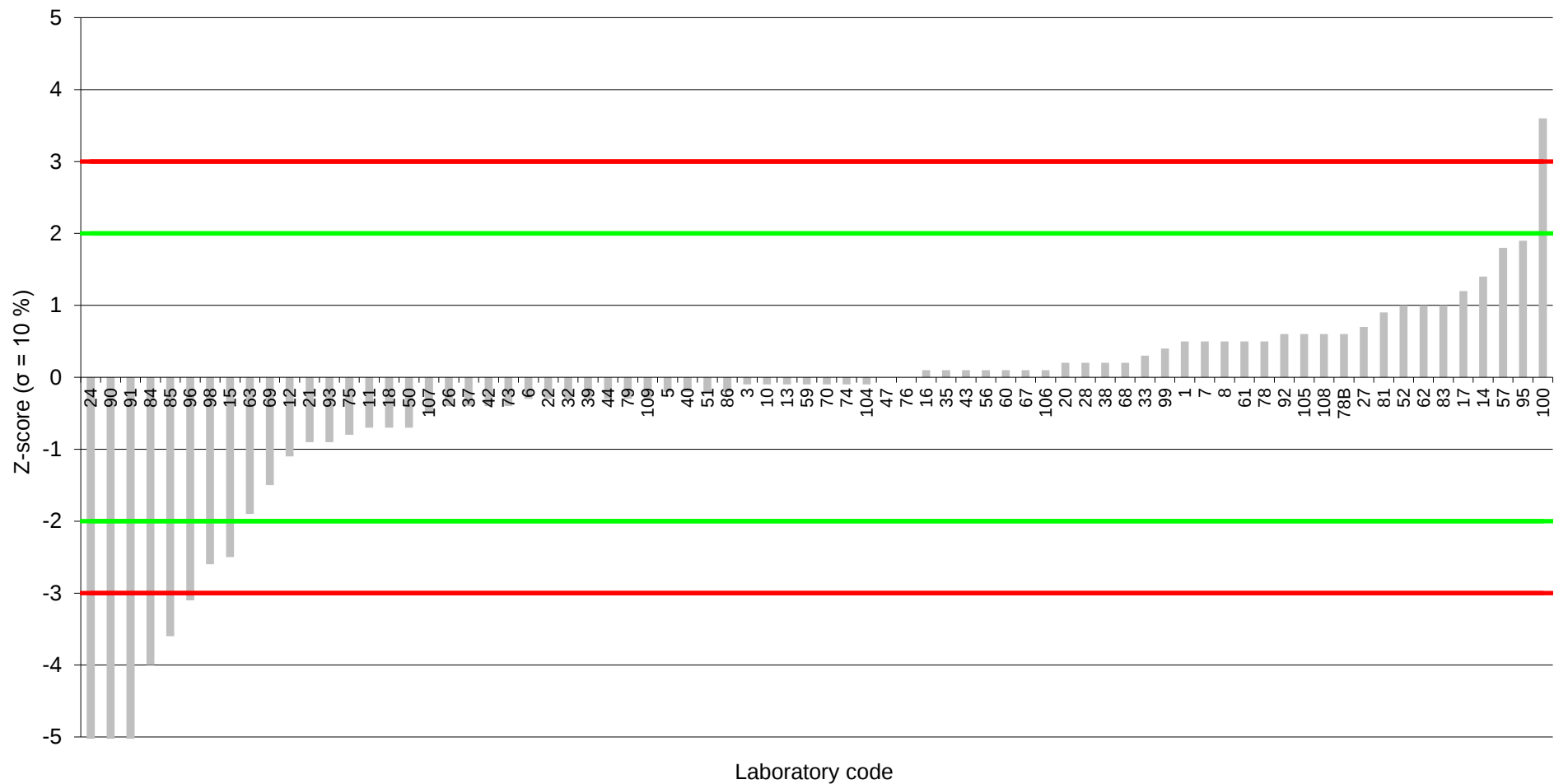
Olive oil (2601-OL)
WHO-PCB-TEQ lower bound (reported)
 Assigned value: 37.4 pg/g fat



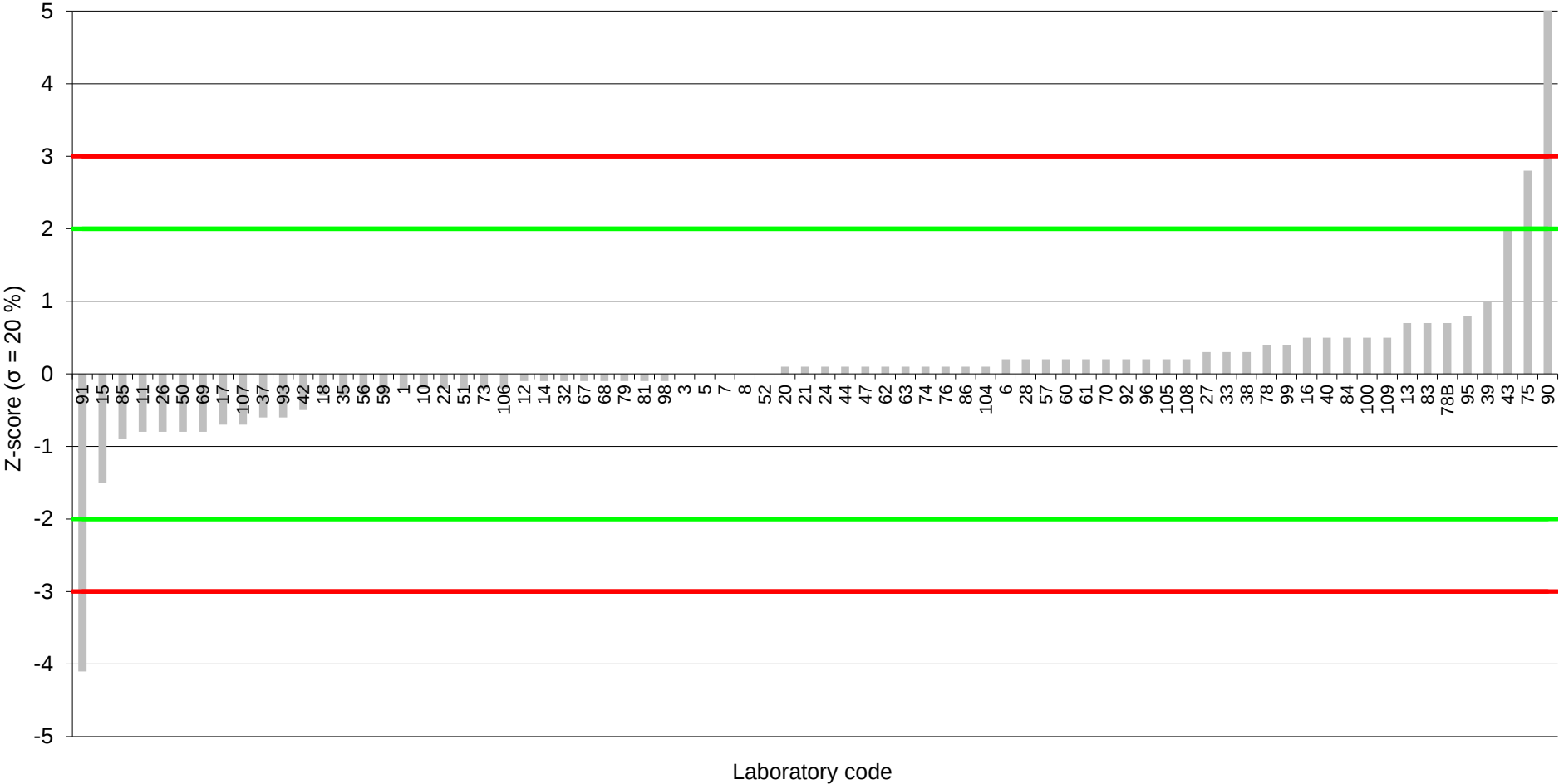
Olive oil (2601-OL)
WHO-PCB-TEQ upper bound (calculated)
Assigned value: 37.5 pg/g fat



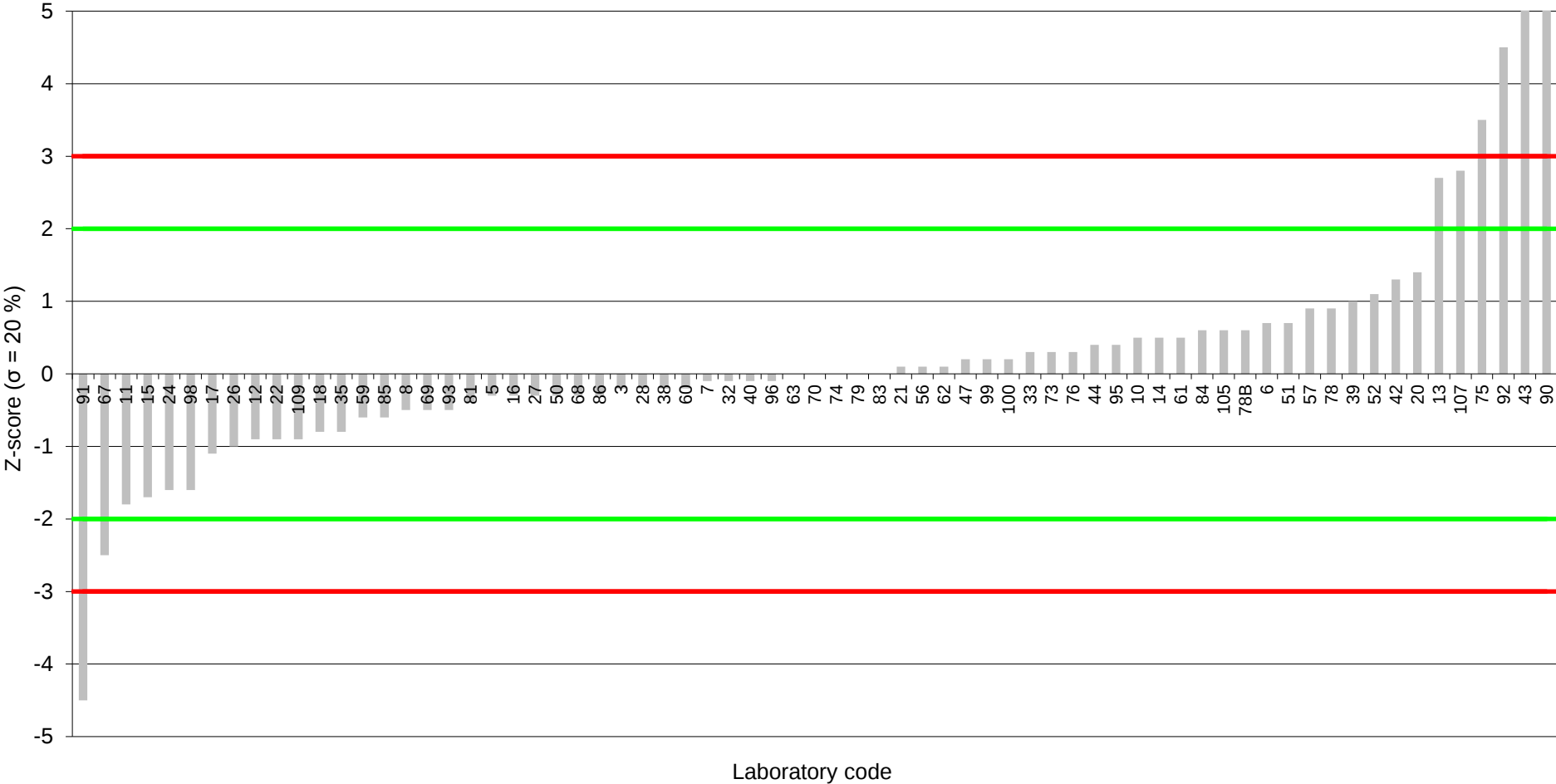
Olive oil (2601-OL)
WHO-PCB-TEQ lower bound (calculated)
 Assigned value: 37.5 pg/g fat



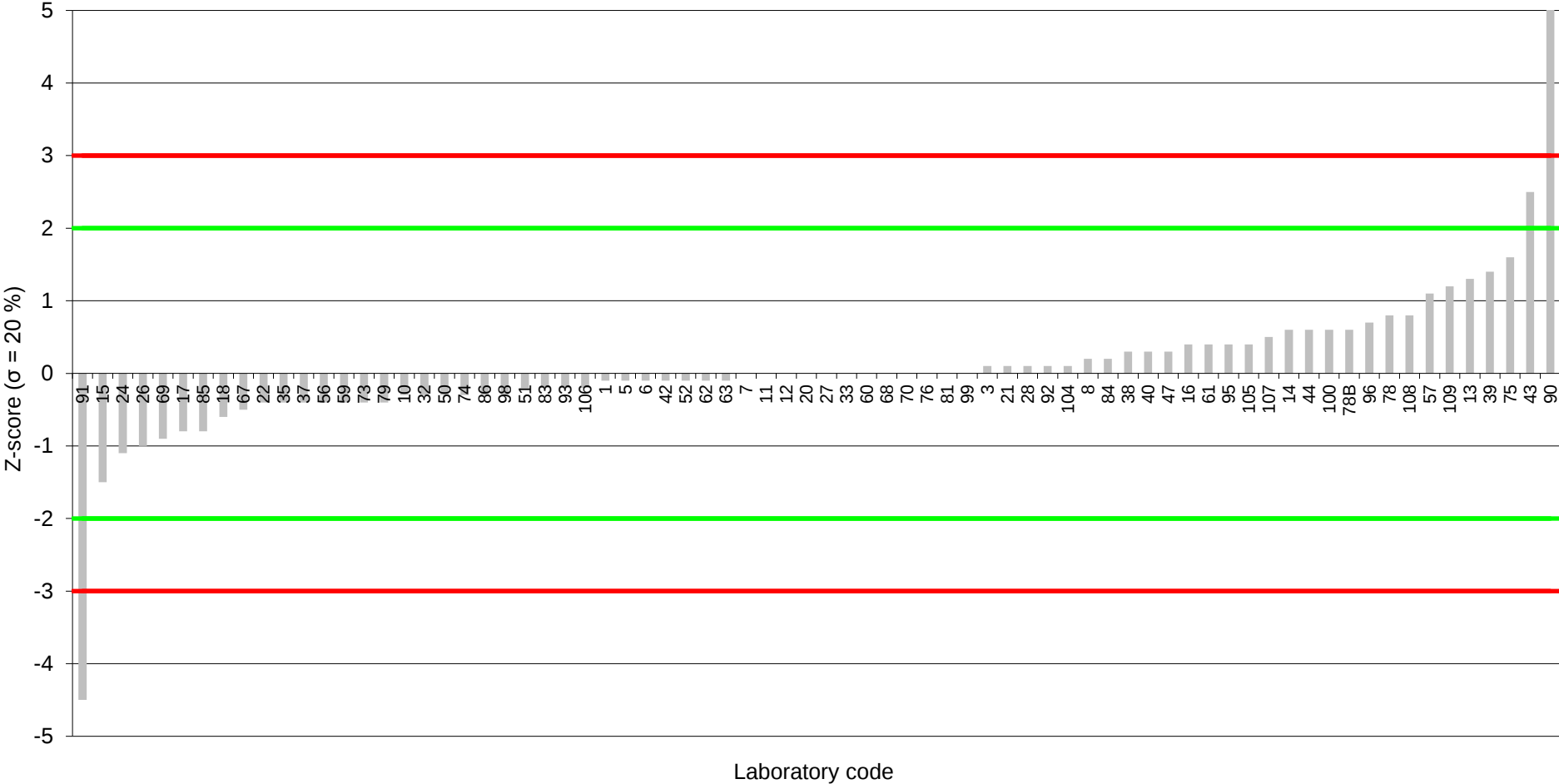
Olive oil (2601-OL)
PCB 105
Assigned value: 297 pg/g fat



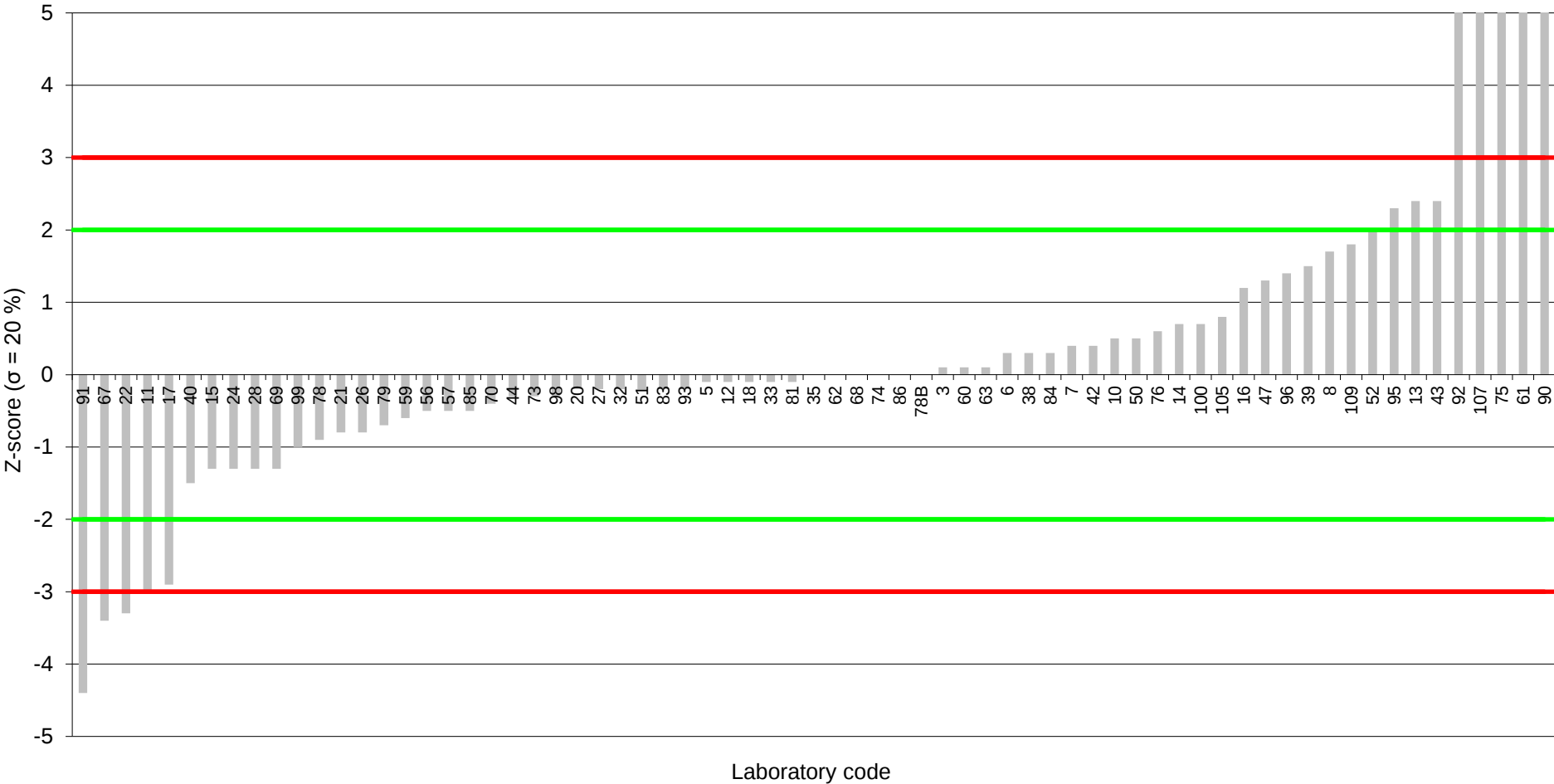
Olive oil (2601-OL)
PCB 114
Assigned value: 27.9 pg/g fat



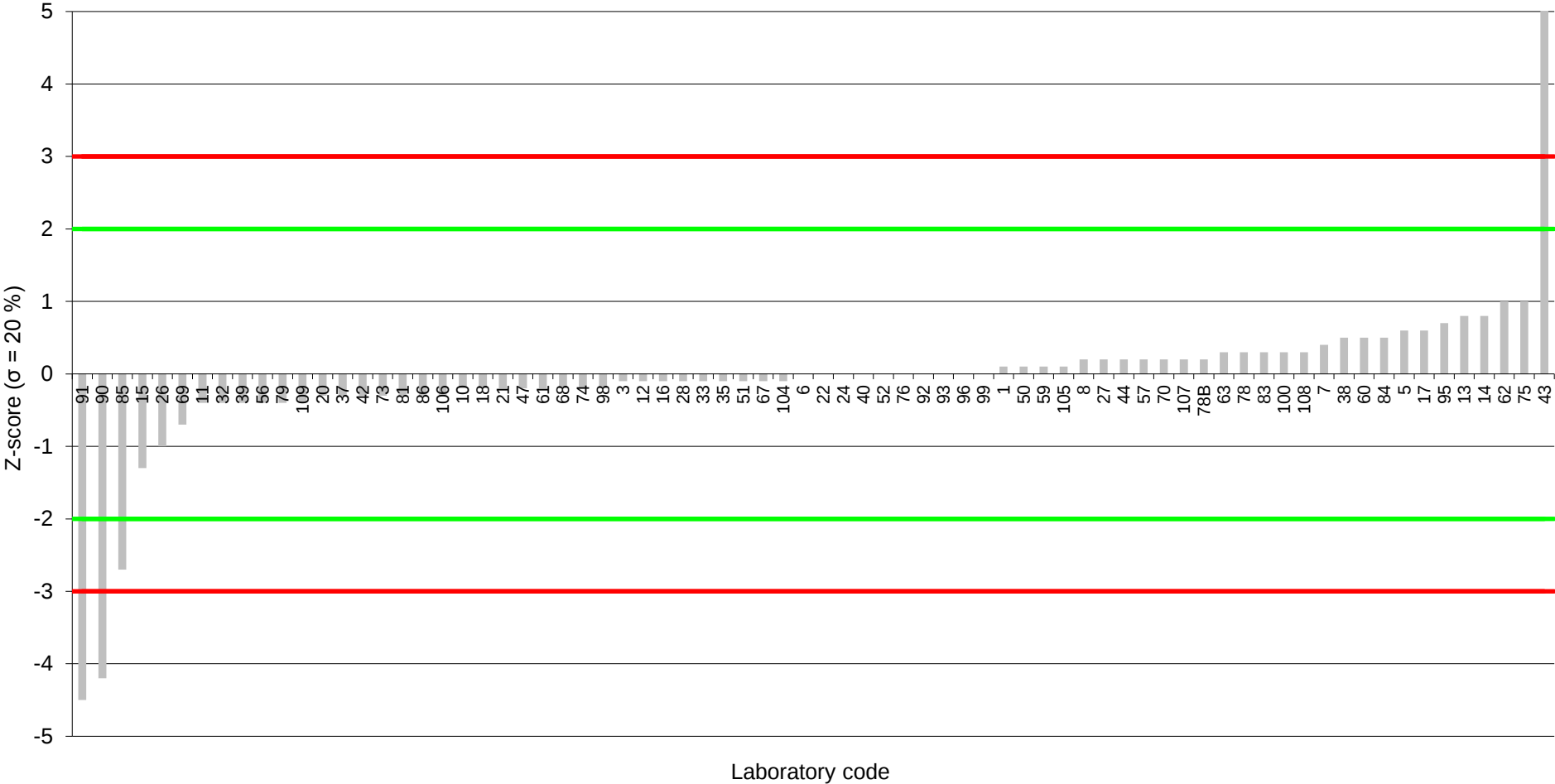
Olive oil (2601-OL)
PCB 118
Assigned value: 419 pg/g fat



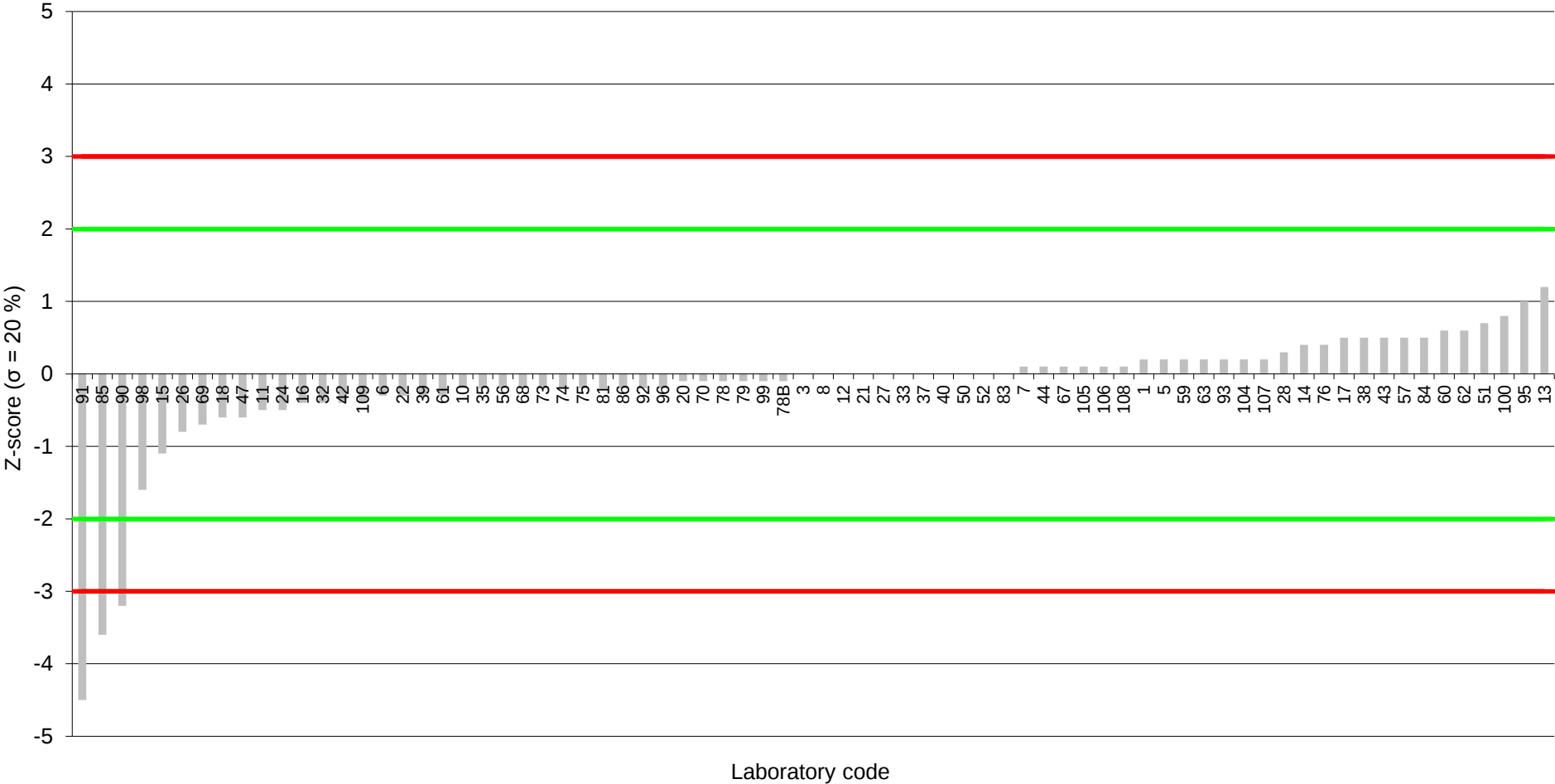
Olive oil (2601-OL)
PCB 123
Assigned value: 16.0 pg/g fat



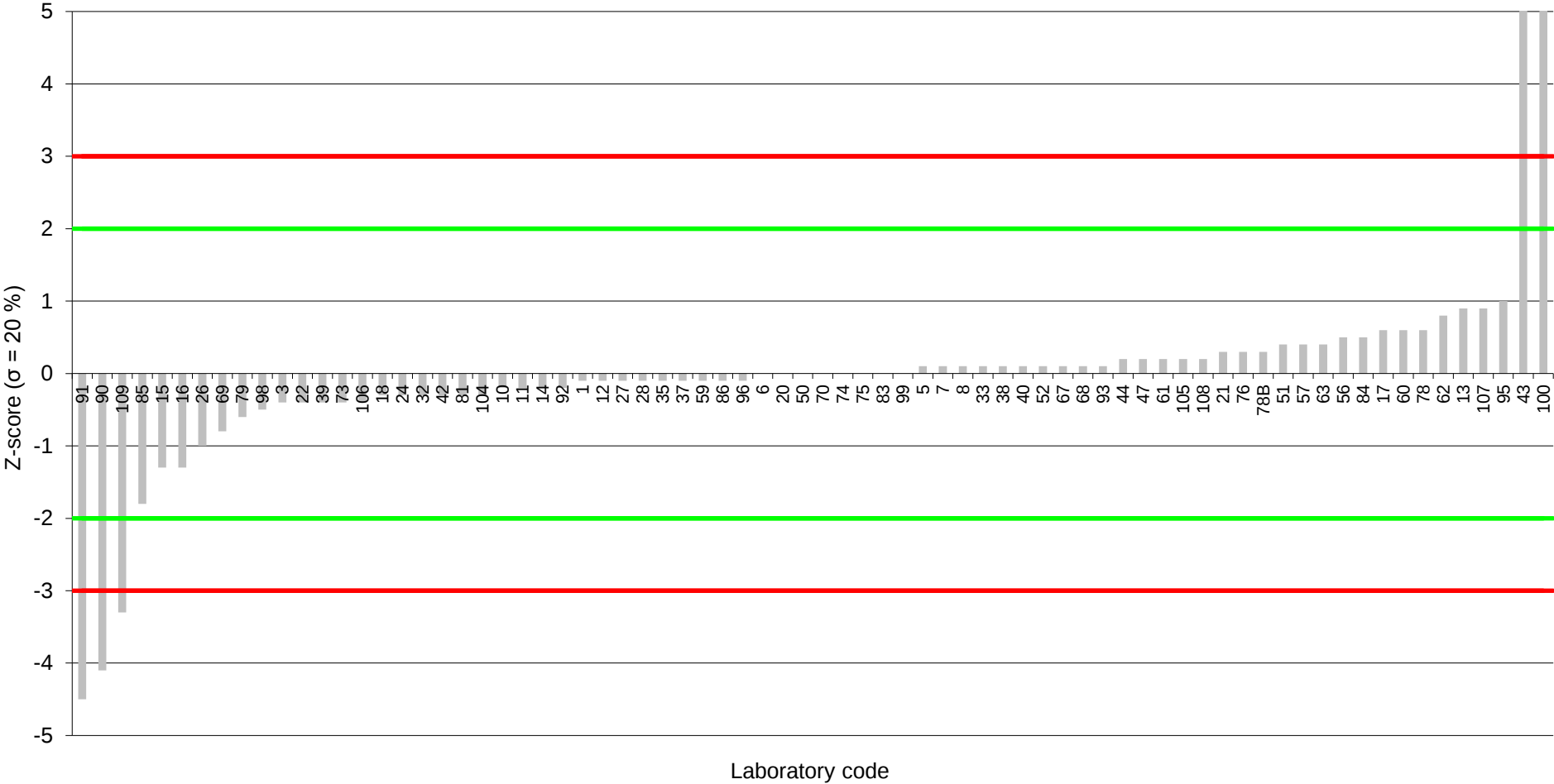
Olive oil (2601-OL)
PCB 156
Assigned value: 4340 pg/g fat



Olive oil (2601-OL)
PCB 157
Assigned value: 2210 pg/g fat



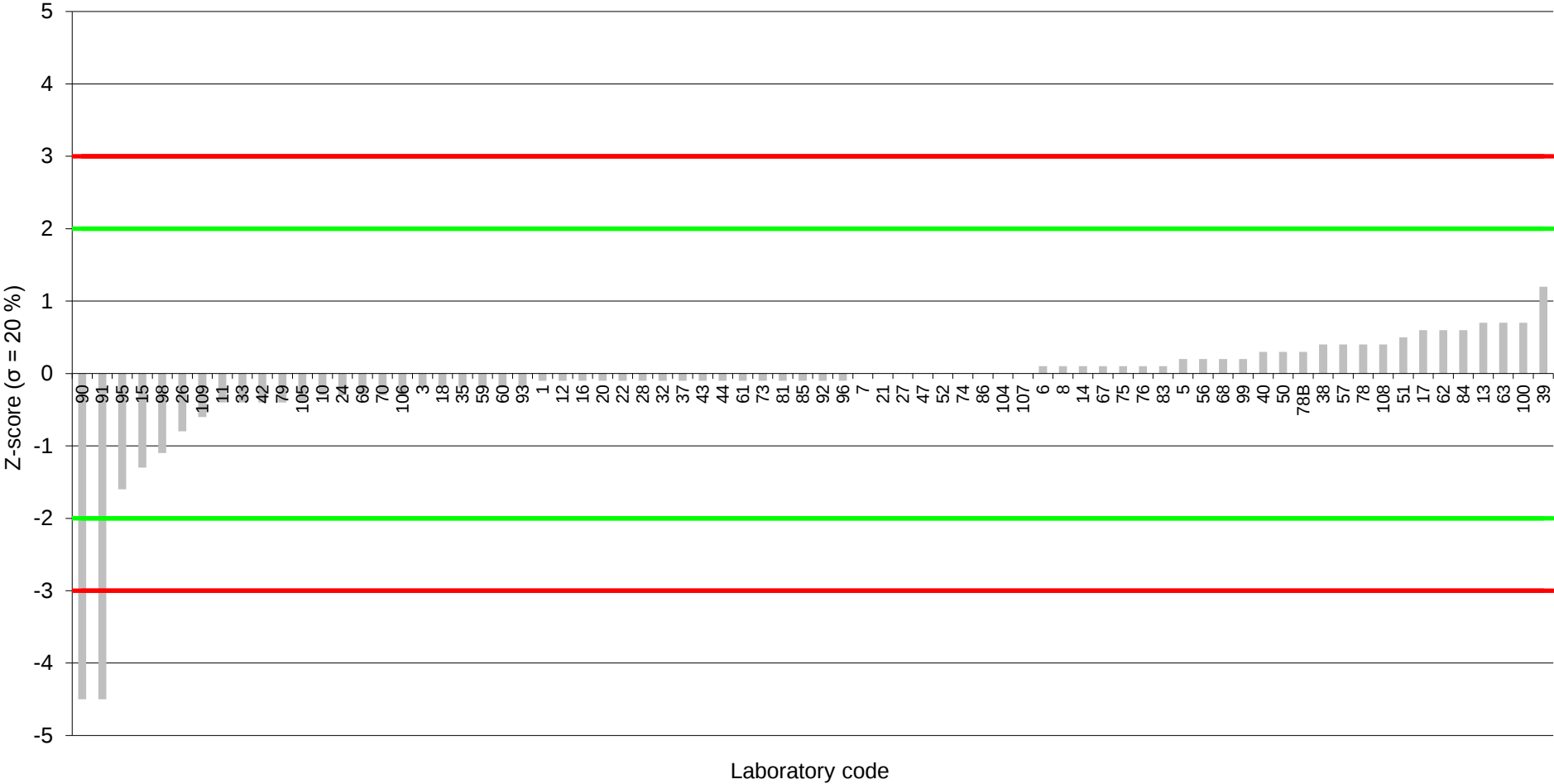
Olive oil (2601-OL)
PCB 167
Assigned value: 3380 pg/g fat



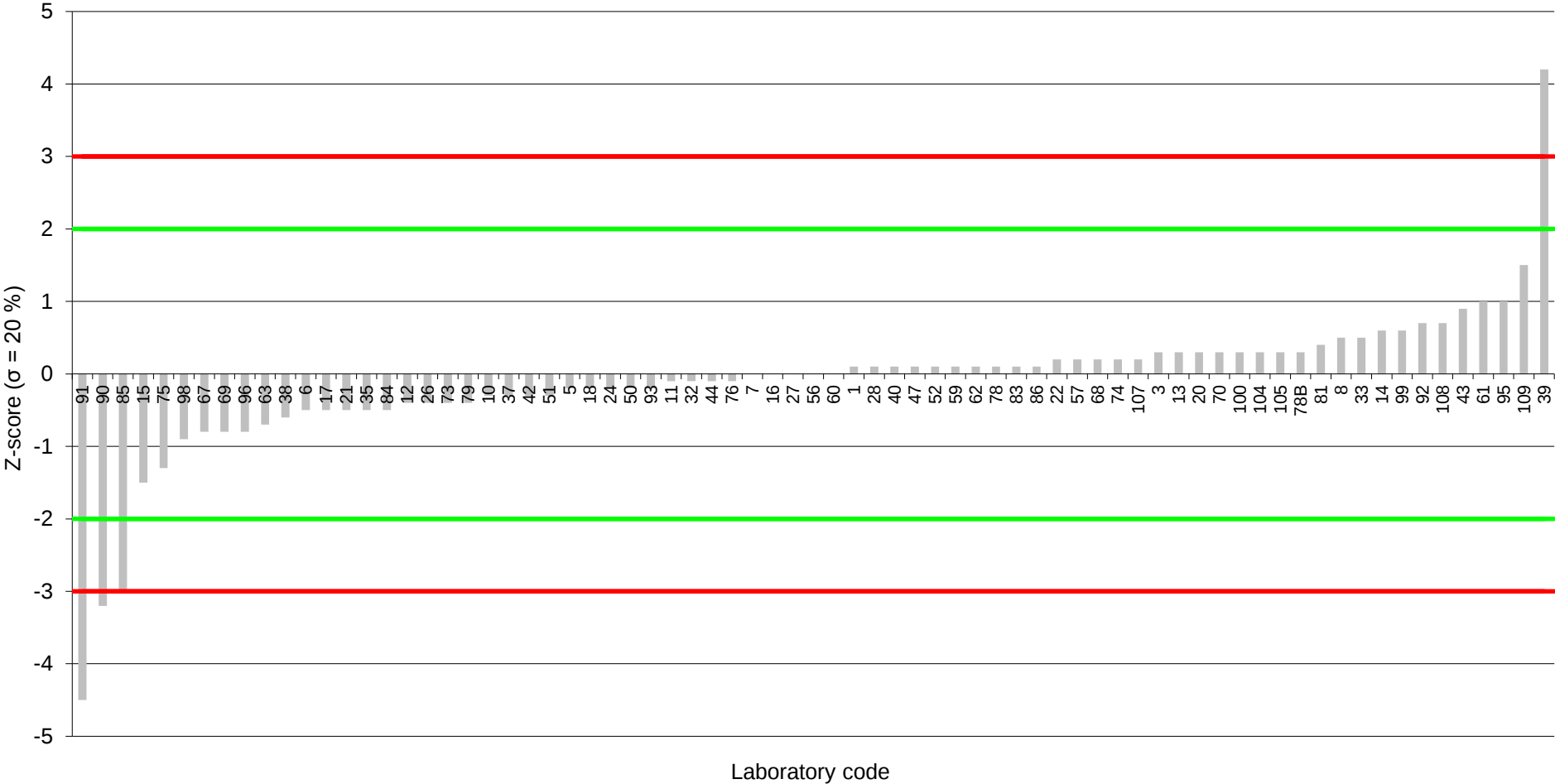
Olive oil (2601-OL)

PCB 189

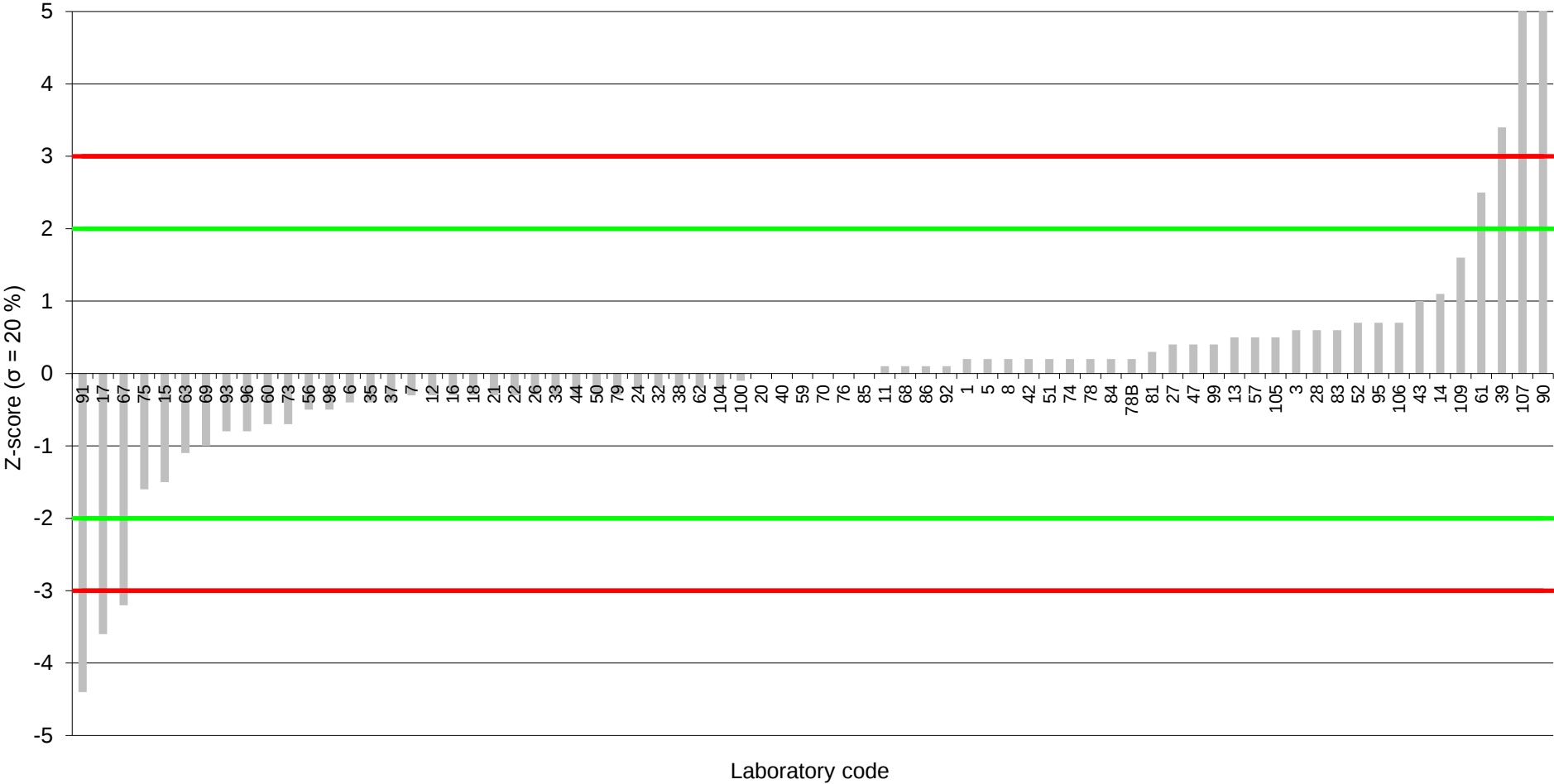
Assigned value: 2350 pg/g fat



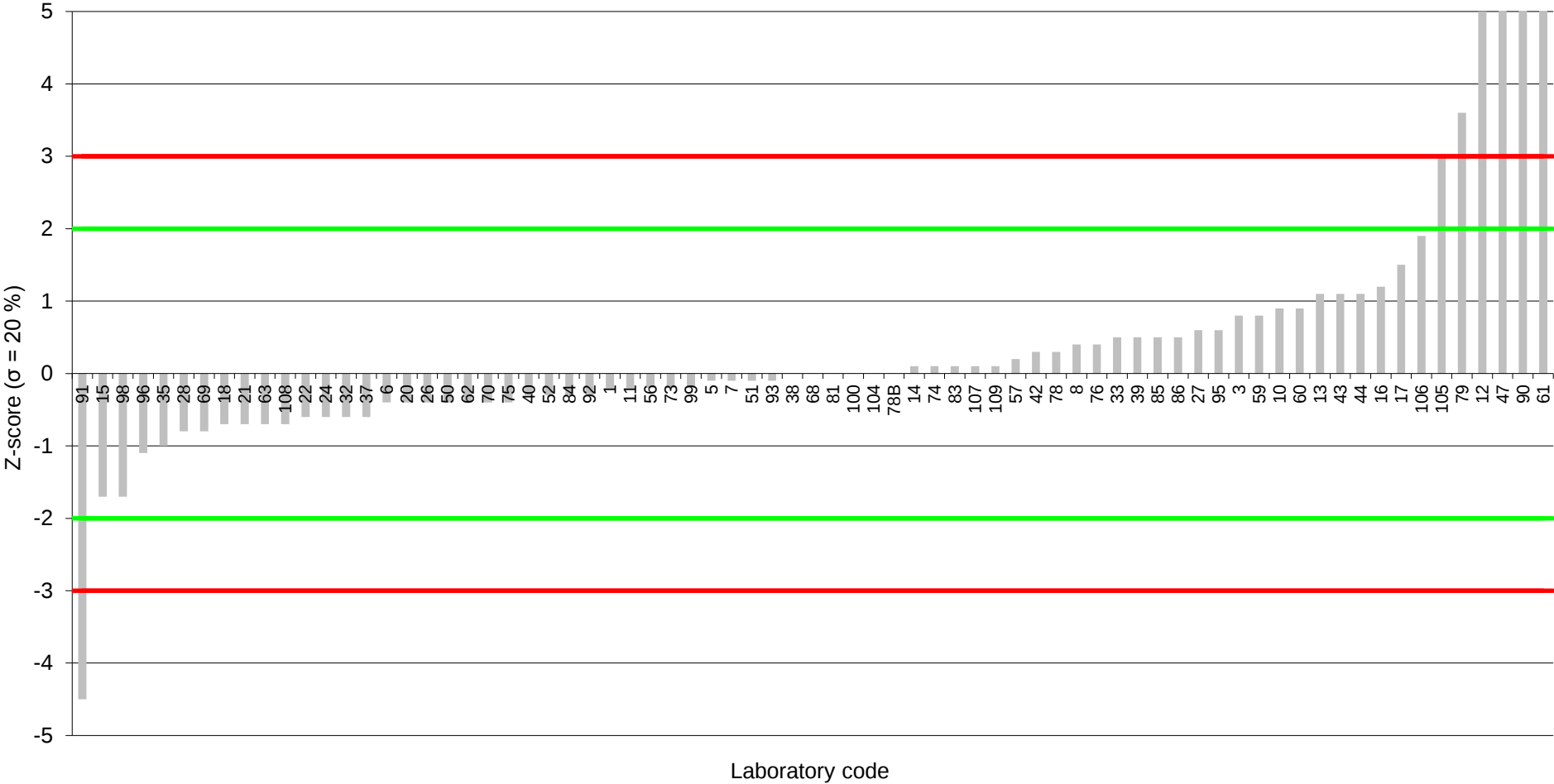
Olive oil (2601-OL)
PCB 77
Assigned value: 207 pg/g fat



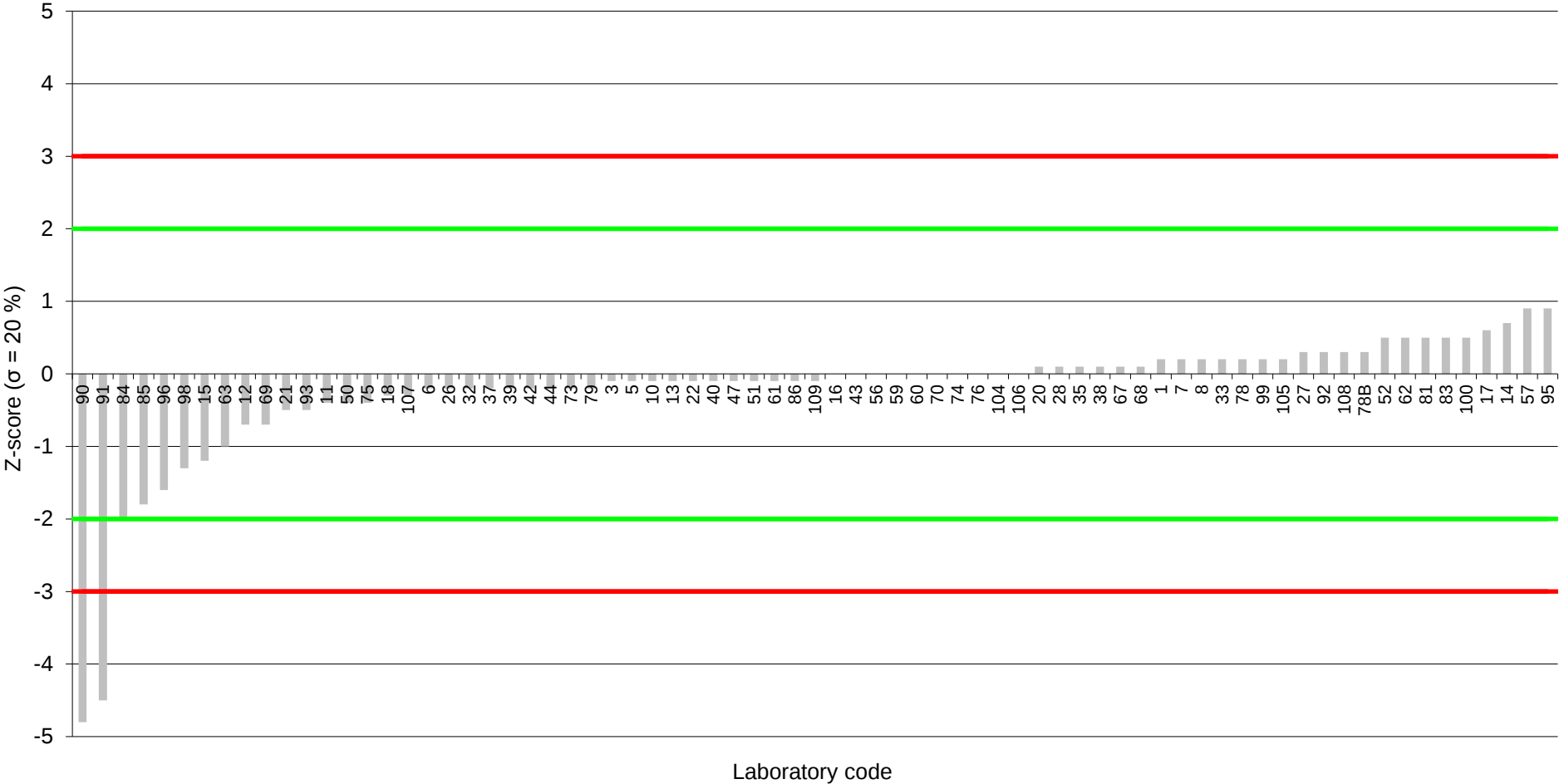
Olive oil (2601-OL)
PCB 81
Assigned value: 10.5 pg/g fat



Olive oil (2601-OL)
PCB 126
Assigned value: 4.98 pg/g fat



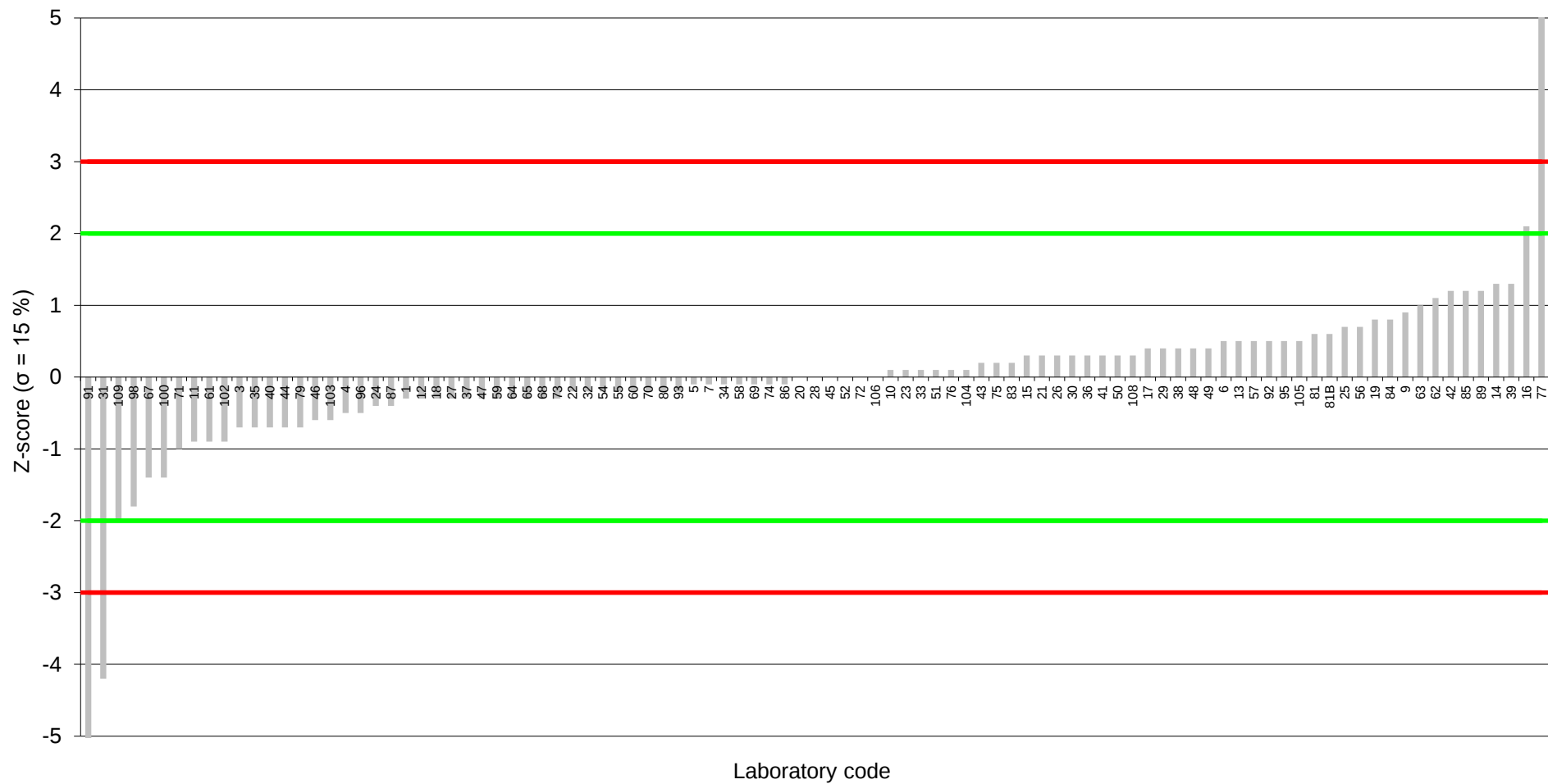
Olive oil (2601-OL)
PCB 169
Assigned value: 1220 pg/g fat



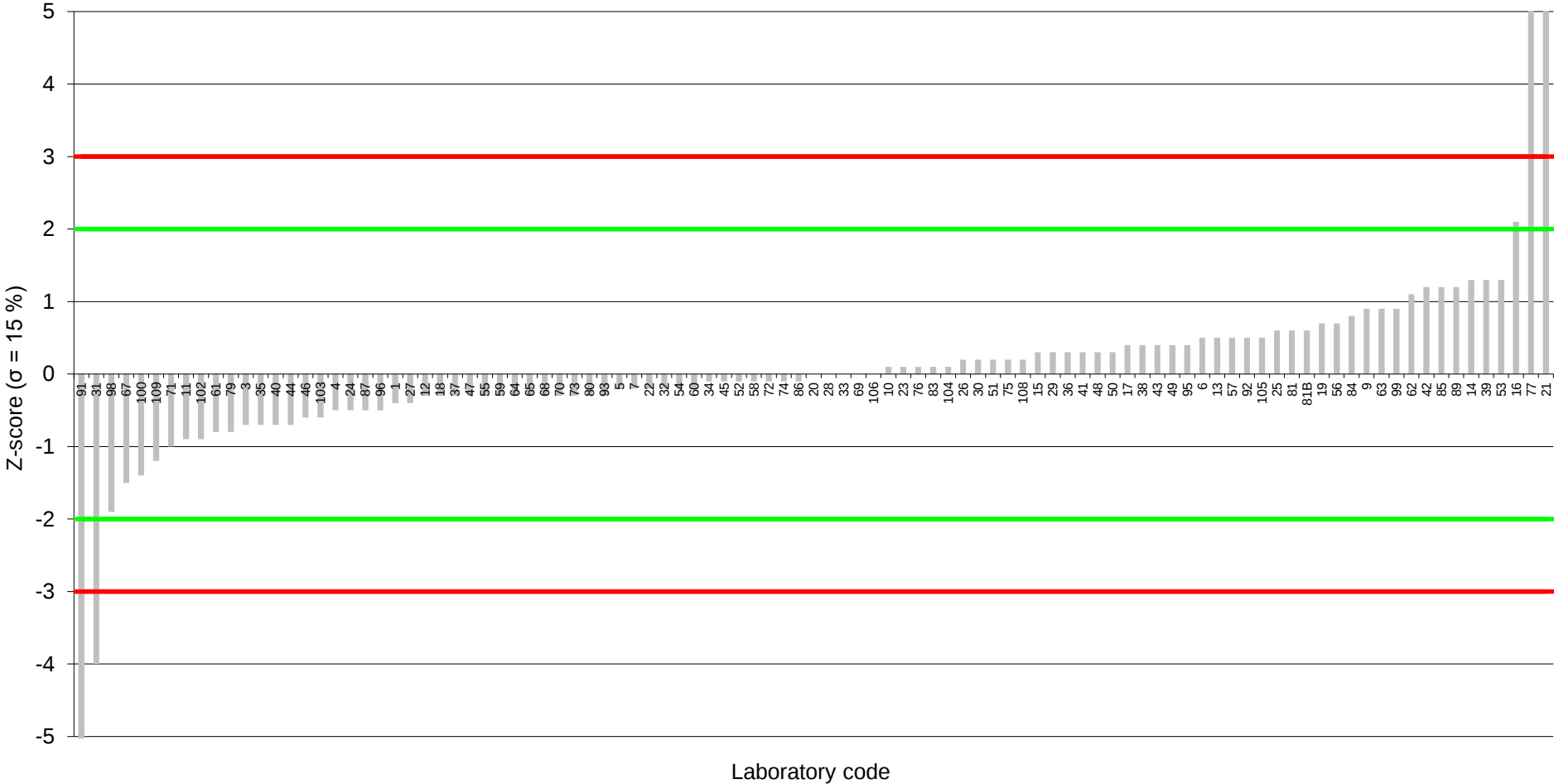
Olive oil (2601-OL)
Sum of 6 NDL-PCBs upper bound (reported)
Assigned value: 23.7 ng/g fat



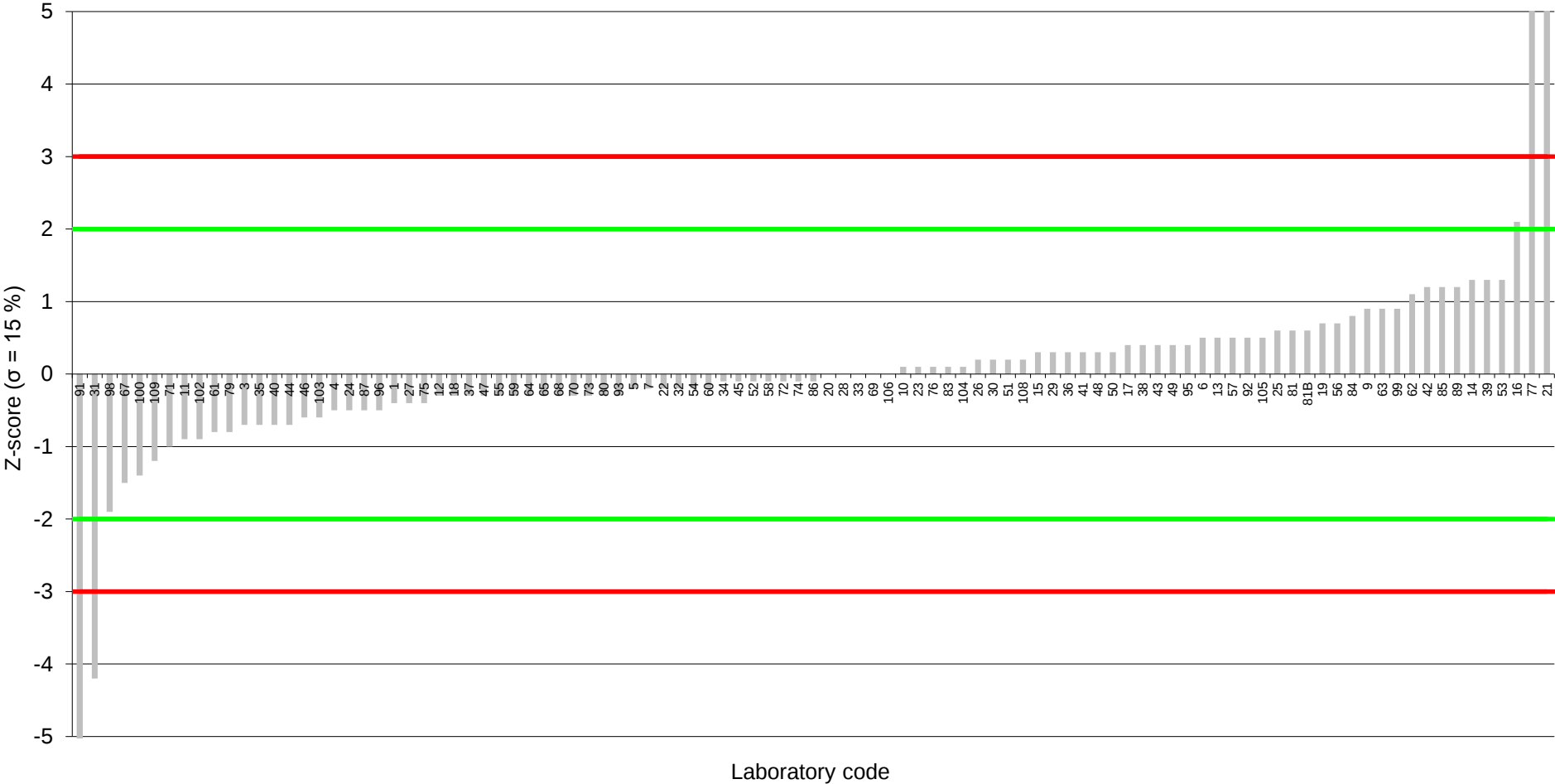
Olive oil (2601-OL)
Sum of 6 NDL-PCBs lower bound (reported)
Assigned value: 23.5 ng/g fat



Olive oil (2601-OL)
Sum of 6 NDL-PCBs upper bound (calculated)
Assigned value: 23.6 ng/g fat



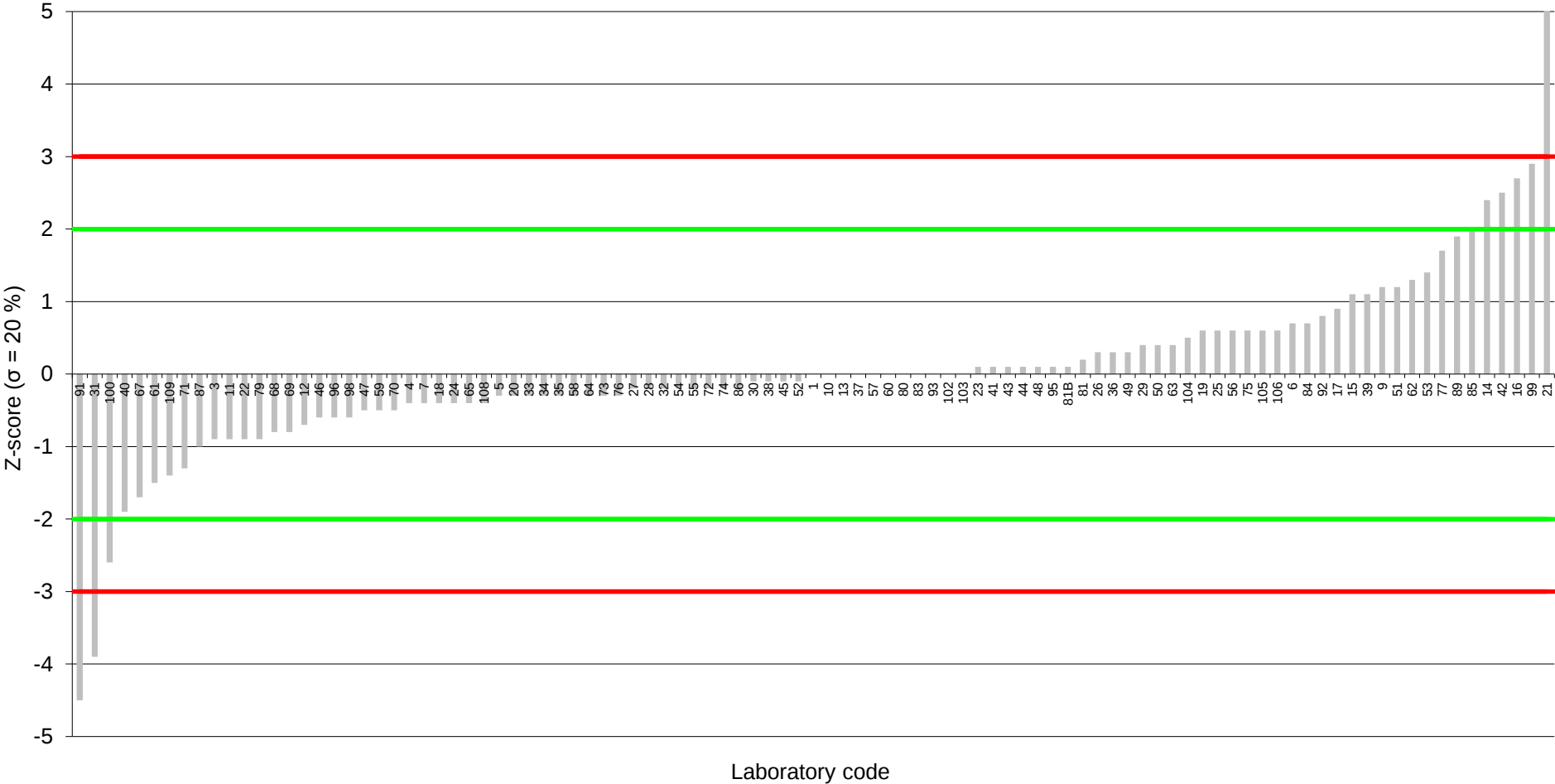
Olive oil (2601-OL)
Sum of 6 NDL-PCBs lower bound (calculated)
Assigned value: 23.6 ng/g fat



Olive oil (2601-OL)

PCB 28

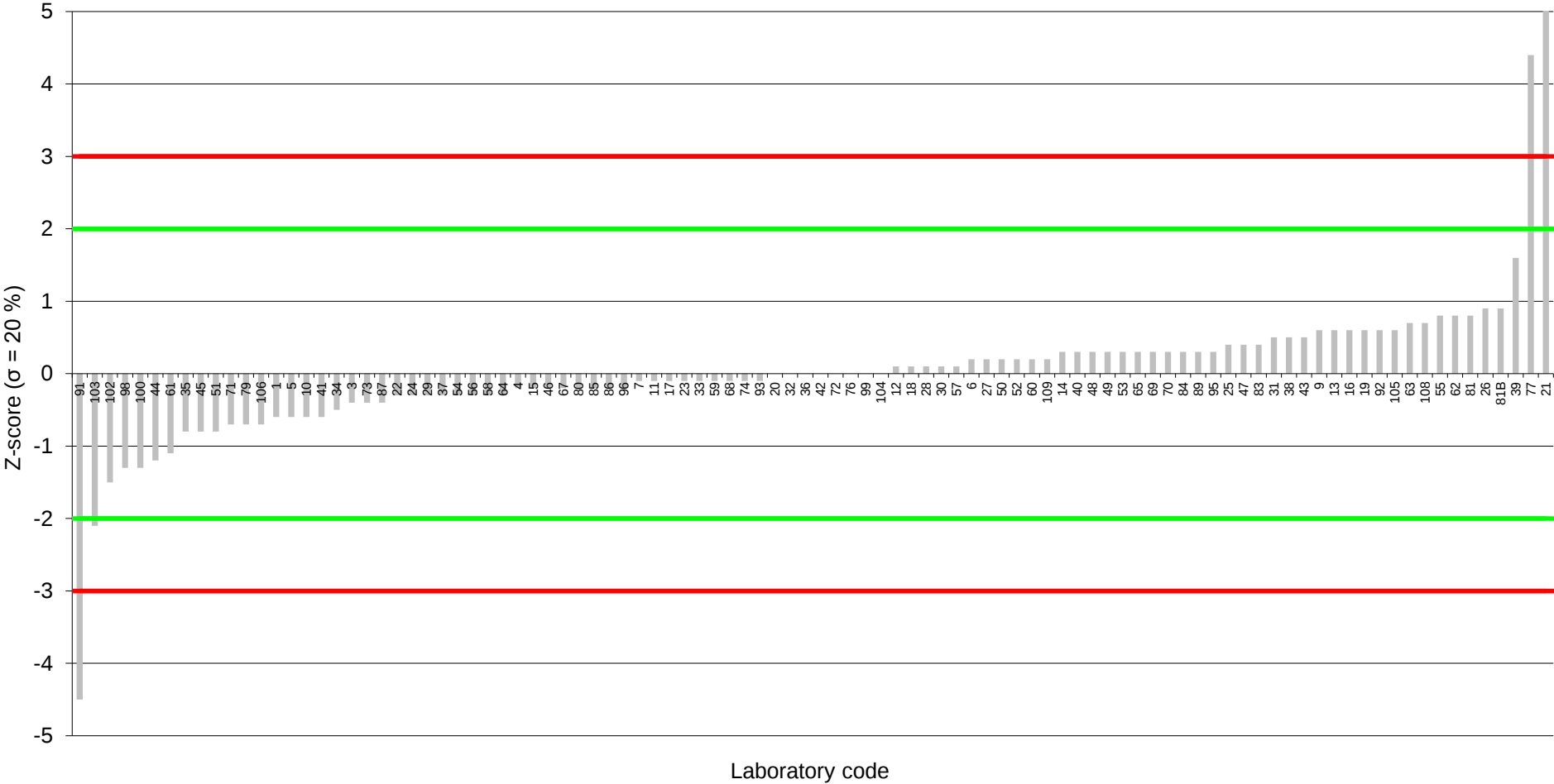
Assigned value: 8.20 ng/g fat



Olive oil (2601-OL)

PCB 52

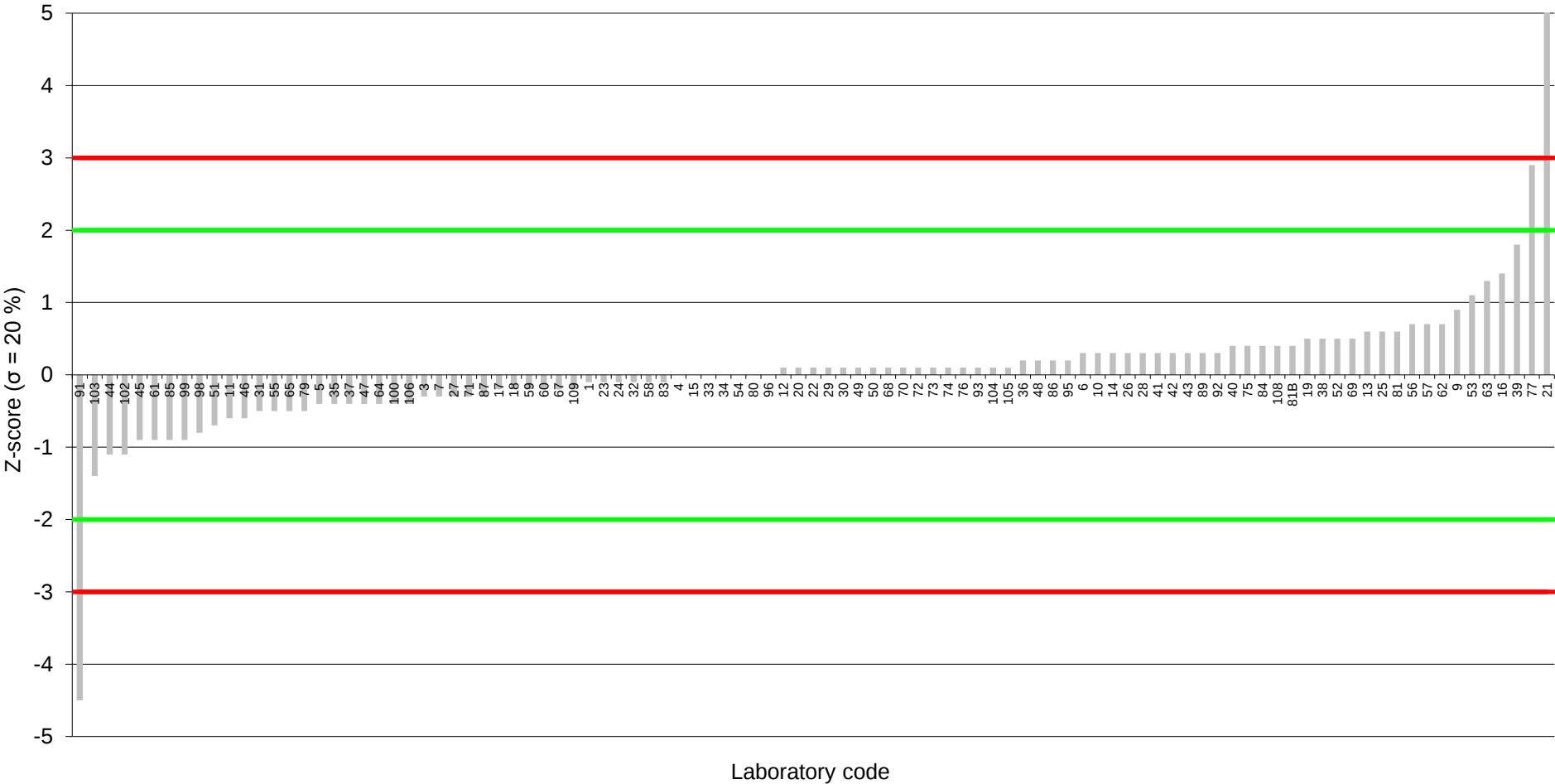
Assigned value: 1.90 ng/g fat



Olive oil (2601-OL)

PCB 101

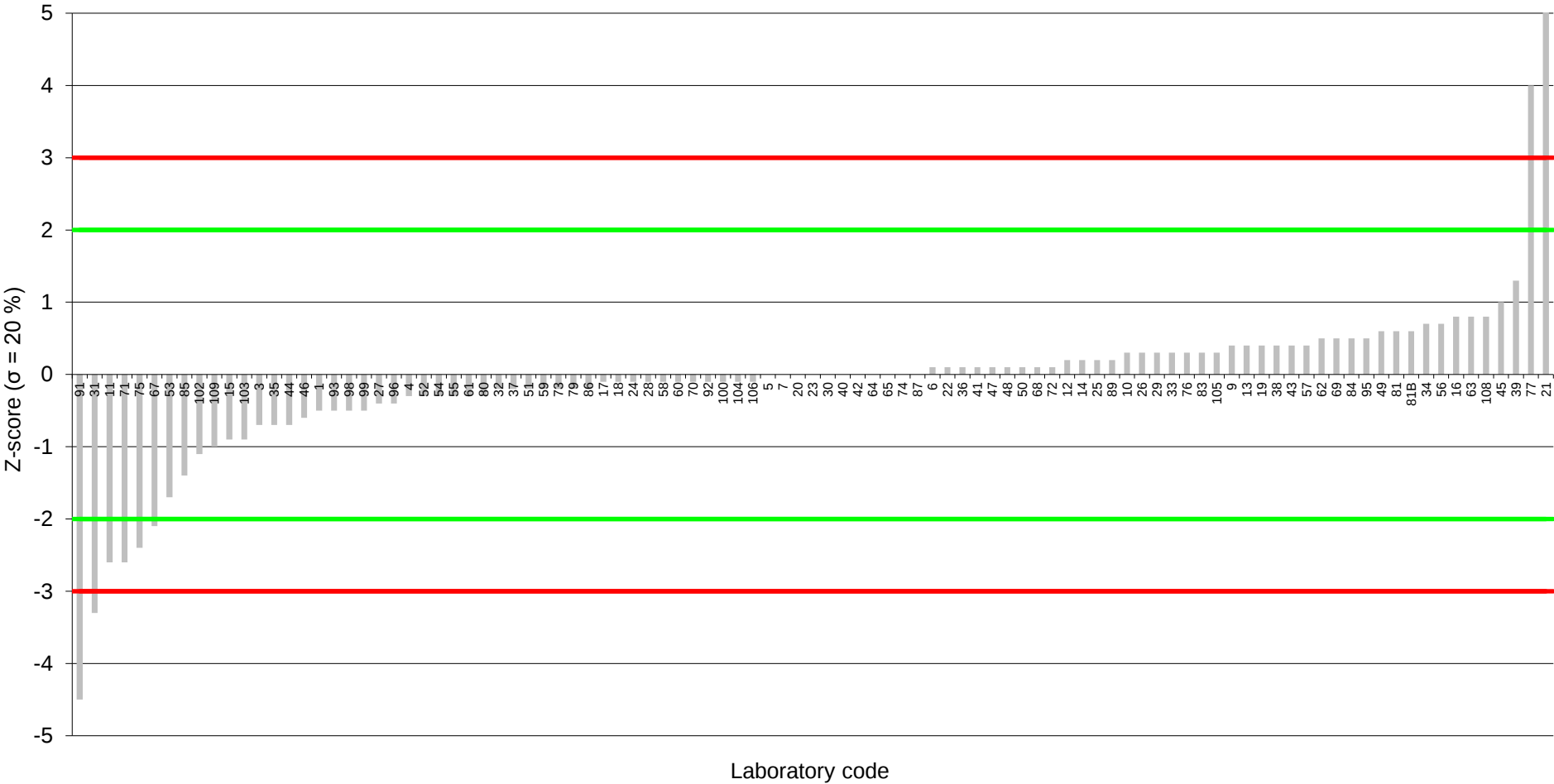
Assigned value: 2.56 ng/g fat



Olive oil (2601-OL)

PCB 138

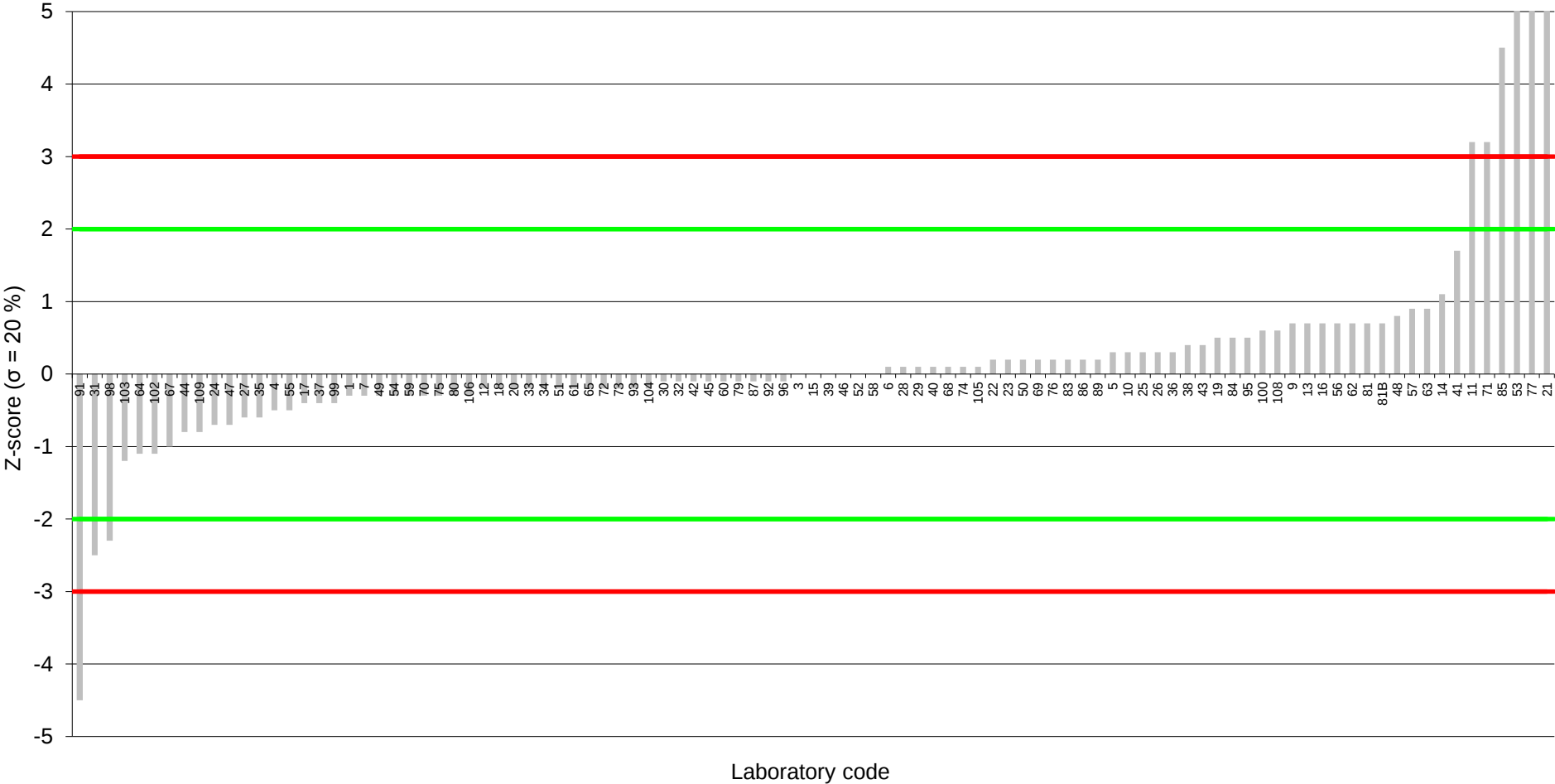
Assigned value: 4.39 ng/g fat



Olive oil (2601-OL)

PCB 153

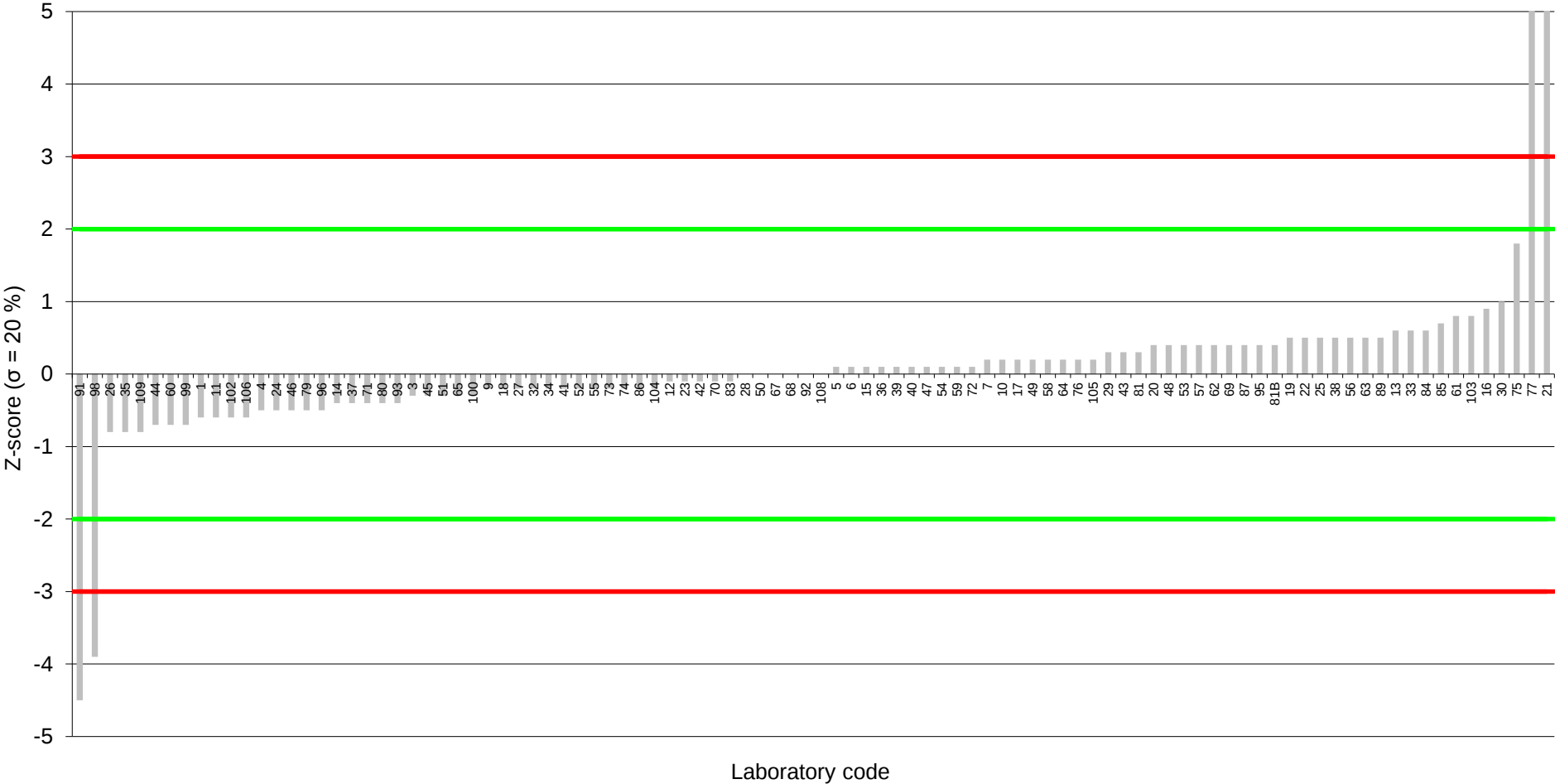
Assigned value: 2.31 ng/g fat



Olive oil (2601-OL)

PCB 180

Assigned value: 4.29 ng/g fat



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]
 EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food
 07 August 2026

Annex 5: Scoring system for PCDD/Fs and PCBs

Test sample - Olive oil (2601-OL)

Positive scoring system

The "positive scoring system" gives one assessment for the PT sample covering all relevant PCDD/F and PCB sum parameters and congeners. The criteria are applicable for sum parameter concentrations in the range (about 0.5 to 4 times) of the level of interest.

The total score for the positive scoring system is calculated according to the following general principles:

- Calculation of z-scores for sum parameters and evaluated individual congeners
- Calculation of the positive scores according to the following table:

Positive scoring system	z-score ≤ 2	2 < z-score < 3	z-score ≥ 3
Individual congeners	Positive score	Positive score	Positive score
Contribution to sum parameter* > 10 %	12	6	0
Contribution to sum parameter* 3 – 10 %	8	4	0
Contribution to sum parameter* < 3 %	6	3	0
Not evaluated congeners	0	0	0

*separately for the respective sum parameters WHO-PCDD/F-TEQ, WHO-PCB-TEQ and the sum of six indicator PCBs

- Calculation of maximum achievable scores (| z-score | ≤ 2) for PCDD/F and DL-PCB and indicator PCB congeners separately:
 $Maximum\ score = \Sigma max.\ score(> 10\ %) + \Sigma max.\ score(3-10\ %) + \Sigma max.\ score(< 3\ %)$
- Calculation of the participant's scores for PCDD/F and DL-PCB and indicator PCB congeners separately:
 $Participant's\ score = \Sigma score(> 10\ %) + \Sigma score(3-10\ %) + \Sigma score(< 3\ %)$
- Calculation of achieved scoring percentage for each participant:
 $Participant's\ scoring\ percentage = Participant's\ score / Maximum\ score \cdot 100$

Criteria for successful participation:

Sum parameters:	≤ 1 parameter with z-score > 2, no parameter with z-score ≥ 3
PCDD/F congeners:	≥ 75 % of maximum score
DL-PCB congeners:	≥ 75 % of maximum score
Indicator PCB congeners:	≥ 75 % of maximum score
Difference between reported and calculated results for sum parameters	≤ 10 %

Successful participation for PCDD/Fs and PCBs, if all above mentioned criteria for the reported analytes are met.



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]
EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)
Summary Scoring system

LC	Data set	Sample	Scoring system	WHO-PCDD/F-PCB-TEQ*	WHO-PCDD/F-TEQ	WHO-PCB-TEQ*	Sum Indicator PCBs	Sum Parameters	PCDD/F congeners	DL-PCB congeners*	NDL-PCB congeners	Calculation of sum parameters	Evaluation	Successful participation	Reason for not successful participation				
				z-score	z-score	z-score	z-score	(≤ 1 parameter with lz-scorel ≥ 2, no parameter with lz-scorel ≥ 3)	(≥ 75 % of max. score)	(≥ 75 % of max. score)	(≥ 75 % of max. score)	(deviation ≤ 10 %)			Sum parameters	PCDD/F congeners	DL-PCB congeners	NDL-PCB congeners	Calculation sum param.
1	A	2601-OL		0.5	5.4	0.5	-0.4	Failed	100%	100%	100%	yes		no	x				
2		2601-OL																	
3	A	2601-OL		-0.2	1.2	-0.2	-0.8	Passed	100%	100%	100%	yes		yes					
4	A	2601-OL					-0.5	Passed	100%	100%	100%	yes		yes					
5	A	2601-OL		0.1	0.7	0.1	-0.2	Passed	100%	100%	100%	yes		yes					
6	A	2601-OL		-0.3	-0.1	-0.4	0.5	Passed	100%	100%	100%	yes		yes					
7	A	2601-OL		0.5	-1.0	0.5	-0.2	Passed	100%	100%	100%	yes		yes					
8	A	2601-OL		0.4	-0.3	0.5		Passed	94%	100%		yes		yes					
9	A	2601-OL			-0.8		0.9	Passed	94%		100%	yes		yes					
10	A	2601-OL			-1.0	-0.1	0.1	Passed	93%	100%	100%	yes		yes					
11	A	2601-OL		-0.8	0.5	-0.8	-0.9	Passed	77%	96%	78%	yes		yes					
12	A	2601-OL		-1.2	-0.5	-1.1	-0.3	Passed	100%	92%	100%	yes		yes					
13	A	2601-OL		-0.1	-0.7	-0.1	0.5	Passed	96%	92%	100%	yes		yes					
14	A	2601-OL		1.4	0.9	1.5	1.2	Passed	100%	100%	91%	yes		yes					
15	A	2601-OL		-2.5	0.7	-2.5	0.3	Passed	100%	100%	100%	yes		yes					
16	A	2601-OL		0.1	0.2	0.1	2.0	Passed	100%	100%	91%	yes		yes					
17	A	2601-OL		1.1	-1.3	1.2	0.3	Passed	100%	88%	100%	yes		yes					
18	A	2601-OL				-0.7	-0.3	Passed		100%		yes		yes					
19	A	2601-OL					0.7	Passed			100%	yes		yes					
20	A	2601-OL		0.1	-0.4	0.1	0.0	Passed	100%	100%	100%	yes		yes					
21	A	2601-OL		-0.9	-0.3	-0.9	0.2	Passed	100%	100%	0%	yes		no				x	
22	A	2601-OL		-0.2	-0.1	-0.2	-0.3	Passed	100%	92%	100%	yes		yes					
23	A	2601-OL					0.0	Passed			100%	yes		yes					
24	A	2601-OL		-9.6	-0.3	-9.8	-0.5	Passed	100%	100%	100%	yes		yes					
25	A	2601-OL					0.6	Passed			100%	yes		yes					
26	A	2601-OL		-0.5	-6.2	-0.5	0.2	Failed	50%	100%	100%	yes		no	x	x			
27	A	2601-OL		0.7	0.1	0.7	-0.4	Passed	100%	100%	100%	yes		yes					
28	A	2601-OL			-0.3	0.2	-0.1	Passed	100%	100%	100%	yes		yes					
29	A	2601-OL					0.3	Passed			100%	yes		yes					
30	A	2601-OL					0.2	Passed			100%	yes		yes					
31	A	2601-OL					-4.1	Failed			46%	yes		no	x			x	
32	A	2601-OL		-0.4	-0.5	-0.3	-0.2	Passed	100%	100%	100%	yes		yes					
33	A	2601-OL		0.3	0.0	0.4	0.0	Passed	100%	100%	100%	yes		yes					
34	A	2601-OL					-0.1	Passed			100%	yes		yes					
35	A	2601-OL		0.1	0.6	0.1	-0.7	Passed	100%	100%	100%	yes		yes					
36	A	2601-OL					0.2	Passed			100%	yes		yes					
37	A	2601-OL		-0.5	-1.2	-0.5	-0.3	Passed	100%	100%	100%	yes		yes					
38	A	2601-OL		0.2	-0.4	0.1	0.4	Passed	100%	100%	100%	yes		yes					
39	A	2601-OL		-0.3	-0.4	-0.3	1.3	Passed	94%	85%	100%	yes		yes					
40	A	2601-OL		-0.3	-0.6	-0.3	-0.8	Passed	97%	100%	100%	yes		yes					
41	A	2601-OL					0.2	Passed			100%	yes		yes					
42	A	2601-OL				-0.4	1.1	Passed		100%	91%	yes		yes					
43	A	2601-OL		0.1	-1.8	0.1	0.1	Passed	100%	69%	100%	yes		yes					
44	A	2601-OL		-0.3	0.4	-0.3	-0.7	Passed	100%	100%	100%	yes		yes					
45	A	2601-OL					-0.1	Passed			100%	yes		yes					
46	A	2601-OL					-0.7	Passed			100%	yes		yes					
47	A	2601-OL		0.0	-1.8	0.1	-0.3	Passed	100%	92%	100%	yes		yes					
48	A	2601-OL					0.3	Passed			100%	yes		yes					
49	A	2601-OL					0.3	Passed			100%	yes		yes					
50	A	2601-OL		-0.7	-0.7	-0.7	0.3	Passed	100%	100%	100%	yes		yes					
51	A	2601-OL		-0.2	-2.8	-0.2	0.1	Passed	100%	100%	100%	yes		yes					
52	A	2601-OL		1.0	1.2	1.0	-0.1	Passed	100%	100%	100%	yes		yes					
53	A	2601-OL					1.4	Passed			88%	yes		yes					
54	A	2601-OL					-0.2	Passed			100%	yes		yes					
55	A	2601-OL					-0.3	Passed			100%	yes		yes					
56	A	2601-OL		0.1	-0.5	0.1	0.7	Passed	100%	100%	100%	yes		yes					
57	A	2601-OL		1.8	-0.6	1.8	0.4	Passed	85%	100%	100%	yes		yes					
58	A	2601-OL					-0.1	Passed			100%	yes		yes					
59	A	2601-OL		-0.1	1.6	-0.1	-0.3	Passed	80%	100%	100%	yes		yes					
60	A	2601-OL		0.1	-0.7	0.1	-0.2	Passed	100%	100%	100%	yes		yes					
61	A	2601-OL		0.5	0.4	0.5	-0.9	Passed	100%	81%	100%	yes		yes					
62	A	2601-OL		0.9	-1.3	1.0	1.1	Passed	94%	100%	100%	yes		yes					
63	A	2601-OL		-1.9	-0.7	-1.9	0.9	Passed	100%	100%	100%	yes		yes					
64	A	2601-OL					-0.3	Passed			100%	yes		yes					
65	A	2601-OL			-2.3		-0.3	Passed	94%		100%	yes		yes					
66		2601-OL																	
67	A	2601-OL		0.1	-0.8	0.1	-1.5	Passed	100%	79%	91%	yes		yes					
68	A	2601-OL		0.2	1.0	0.2	-0.3	Passed	90%	100%	100%	yes		yes					



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]
EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)
Summary Scoring system

LC	Data set	Sample	Scoring system	WHO-PCDD/F-PCB-TEQ*	WHO-PCDD/F-TEQ	WHO-PCB-TEQ*	Sum Indicator PCBs	Sum Parameters	PCDD/F congeners	DL-PCB congeners*	NDL-PCB congeners	Calculation of sum parameters	Evaluation	Successful participation	Reason for not successful participation				
				z-score	z-score	z-score	z-score	(≤ 1 parameter with Iz-scorel ≥ 2, no parameter with Iz-scorel ≥ 3)	(≥ 75 % of max. score)	(≥ 75 % of max. score)	(≥ 75 % of max. score)	(deviation ≤ 10 %)		Sum parameters	PCDD/F congeners	DL-PCB congeners	NDL-PCB congeners	Calculation sum param.	
69	A	2601-OL		-1.4	-0.3	-1.4	-0.2	Passed	97%	100%	100%	yes		yes					
70	A	2601-OL		-0.1	-0.7	-0.1	-0.3	Passed	97%	100%	100%	yes		yes					
71	A	2601-OL					-0.2	Passed			78%	no		no					x
72	A	2601-OL					-0.1	Passed			100%	yes		yes					
73	A	2601-OL		-0.4	-0.5	-0.4	-0.3	Passed	100%	100%	100%	yes		yes					
74	A	2601-OL		-0.1	-0.9	-0.1	-0.2	Passed	100%	100%	100%	yes		yes					
75	A	2601-OL		-0.8	0.6	-0.8	0.1	Passed	69%	81%	89%	yes		no		x			
76	A	2601-OL		0.0	0.5	0.0	0.0	Passed	100%	100%	100%	yes		yes					
77	A	2601-OL			0.4		7.9	Failed	88%		28%	yes		no	x			x	
78	A	2601-OL		0.3	-1.9	0.4		Passed	93%	100%		yes		yes					
79	A	2601-OL		-0.3	-0.4	-0.3	-0.8	Passed	91%	92%	100%	yes		yes					
80	A	2601-OL					-0.3	Passed			100%	yes		yes					
81	A	2601-OL		0.9	3.0	0.9	0.5	Passed	90%	100%	100%	yes		yes					
82	A	2601-OL																	
83	A	2601-OL		0.9	0.0	1.0	0.1	Passed	94%	100%	100%	yes		yes					
84	A	2601-OL		-3.9	1.0	-4.0	0.7	Passed	100%	100%	100%	yes		yes					
85	A	2601-OL		-3.6	0.1	-3.6	1.1	Passed	94%	85%	88%	yes		yes					
86	A	2601-OL		-0.2	-1.1	-0.2	-0.2	Passed	100%	100%	100%	yes		yes					
87	A	2601-OL					-0.5	Passed			100%	yes		yes					
88		2601-OL																	
89	A	2601-OL					1.1	Passed			100%	yes		yes					
90	A	2601-OL		-8.8	1.3	-9.0		Passed	78%	0%		yes		yes					
91	A	2601-OL		-8.8	2.8	-9.0	-6.0	Failed	68%	0%	0%	yes		no	x	x		x	
92	A	2601-OL		0.6	1.0	0.6	0.4	Passed	81%	85%	100%	yes		yes					
93	A	2601-OL		-0.9	0.2	-0.9	-0.3	Passed	65%	100%	100%	yes		no		x			
94		2601-OL																	
95	A	2601-OL		1.8	-0.7	1.9	0.4	Passed	97%	96%	100%	yes		yes					
96	A	2601-OL		-3.1	-1.8	-3.1	-0.5	Passed	100%	100%	100%	yes		yes					
97		2601-OL																	
98	A	2601-OL		-2.6	2.4	-2.6	-1.9	Passed	71%	100%	75%	yes		no		x			
99	A	2601-OL		0.4	0.6	0.4	0.8	Passed	94%	100%	91%	yes		yes					
100	A	2601-OL		0.9	2.4	0.9	-1.4	Passed	100%	92%	91%	yes		yes					
101	A	2601-OL																	
102	A	2601-OL					-0.9	Passed			100%	yes		yes					
103	A	2601-OL					-0.6	Passed			94%	yes		yes					
104	A	2601-OL		-0.1	-0.5	-0.1	0.0	Passed	80%	100%	100%	yes		yes					
105	A	2601-OL		0.5	-0.9	0.6	0.5	Passed	94%	96%	100%	yes		yes					
106	A	2601-OL		0.1	2.5	0.1	-0.1	Passed	100%	100%	100%	yes		yes					
107	A	2601-OL		-0.5	2.9	-0.6		Passed	72%	81%		yes		no		x			
108	A	2601-OL		0.6	1.4	0.6	0.2	Passed	93%	100%	100%	yes		yes					
109	A	2601-OL		-0.2	2.6	-0.3	-2.1	Failed	62%	92%	100%	yes		no	x	x			
Additional sets																			
24	B	2601-OL		-9.6	0.3			Passed	100%			yes		yes					
78	B	2601-OL		0.6	-2.1	0.7		Passed	100%	100%		yes		yes					
81	B	2601-OL					0.5	Passed			100%	yes		yes					
82	B	2601-OL																	

*Sum parameters outside the range of 0.5 to 4 times of the level of interest / no legal limits defined; results not included in overall assessment



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

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Annex 6: Test for sufficient homogeneity for PCDD/Fs, PCBs

Test sample - Olive oil (2601-OL)



EURL Proficiency Test on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

Sum parameters - Homogeneity test - Data

Analyte	Result pg/g fat	Mean (n = 10, duplicate analysis)	Median (n = 10, duplicate analysis)	Relative standard deviation [%]
WHO-PCDD/F-PCB-TEQ upper bound		39.4	39.4	2%
WHO-PCDD/F-PCB-TEQ middle bound		39.4	39.4	2%
WHO-PCDD/F-PCB-TEQ lower bound		39.4	39.4	2%



EURL Proficiency Test on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil [EURL-PT-DPB_2601-OL]

EURL for Halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

PCDD/F - Homogeneity test - Data

Analyte	Result pg/g fat	Mean (n = 10, duplicate analysis)	Median (n = 10, duplicate analysis)	Relative standard deviation [%]
WHO-PCDD/F-TEQ upper bound		0.721	0.710	5%
WHO-PCDD/F-TEQ middle bound		0.721	0.710	5%
WHO-PCDD/F-TEQ lower bound		0.721	0.710	5%
2,3,7,8-TCDD		0.0392	0.0365	17%
1,2,3,7,8-PeCDD		0.0930	0.0928	16%
1,2,3,4,7,8-HxCDD		0.0689	0.0649	23%
1,2,3,6,7,8-HxCDD		0.169	0.172	12%
1,2,3,7,8,9-HxCDD		0.0712	0.0683	20%
1,2,3,4,6,7,8-HpCDD		0.470	0.460	11%
1,2,3,4,6,7,8,9-OCDD		1.10	1.10	16%
2,3,7,8-TCDF		1.80	1.78	6%
1,2,3,7,8-PeCDF		0.430	0.430	4%
2,3,4,7,8-PeCDF		0.967	0.959	4%
1,2,3,4,7,8-HxCDF		0.313	0.313	6%
1,2,3,6,7,8-HxCDF		0.165	0.164	8%
2,3,4,6,7,8-HxCDF		0.162	0.167	9%
1,2,3,7,8,9-HxCDF		0.0300	0.0279	31%
1,2,3,4,6,7,8-HpCDF		0.226	0.225	9%
1,2,3,4,7,8,9-HpCDF		0.0261	0.0245	35%
1,2,3,4,6,7,8,9-OCDF		0.293	0.271	21%



EURL Proficiency Test on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil [EURL-PT-DPB_2601-OL]

EURL for Halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

DL-PCB - Homogeneity test - Data

Analyte	Result pg/g fat	Mean (n = 10, duplicate analysis)	Median (n = 10, duplicate analysis)	Relative standard deviation [%]
WHO-PCB-TEQ upper bound		38.7	38.7	2%
WHO-PCB-TEQ middle bound		38.7	38.7	2%
WHO-PCB-TEQ lower bound		38.7	38.7	2%
PCB 105		298	298	2%
PCB 114		25.7	25.9	9%
PCB 118		399	399	2%
PCB 123		14.6	14.7	14%
PCB 156		4340	4360	2%
PCB 157		2260	2260	3%
PCB 167		3250	3260	2%
PCB 189		2360	2350	2%
PCB 77		210	210	2%
PCB 81		12.0	11.7	8%
PCB 126		6.02	5.78	14%
PCB 169		1260	1260	2%



EURL Proficiency Test on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil [EURL-PT-DPB_2601-OL]

EURL for Halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

NDL-PCB - Homogeneity test - Data

Analyte	Result ng/g fat	Mean (n = 10, duplicate analysis)	Median (n = 10, duplicate analysis)	Relative standard deviation [%]
Sum Indicator PCBs upper bound		21.5	21.5	1%
Sum Indicator PCBs middle bound		21.5	21.5	1%
Sum Indicator PCBs lower bound		21.5	21.5	1%
PCB 28		7.36	7.34	3%
PCB 52		1.98	1.98	2%
PCB 101		2.46	2.47	3%
PCB 138		3.85	3.85	3%
PCB 153		1.94	1.94	2%
PCB 180		3.91	3.93	2%



EURL Proficiency Test on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil [EURL-PT-DPB_2601-OL]

EURL for Halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

Selected congeners - Homogeneity test - Data

Sample	Replicate	Result pg/g / ng/g fat	2,3,7,8-TCDF	PCB 118	PCB 153	
35	1		1.91	395	1.91	
	2		1.75	386	1.98	
39	1		1.68	392	1.90	
	2		1.84	404	1.97	
56	1		1.79	390	1.97	
	2		1.75	396	1.98	
57	1		1.73	397	1.92	
	2		1.68	400	1.92	
110	1		1.67	398	1.91	
	2		1.71	402	1.95	
114	1		1.76	392	1.92	
	2		1.88	393	1.96	
141	1		1.94	402	1.94	
	2		1.88	409	1.95	
145	1		1.70	385	1.93	
	2		1.77	410	1.92	
163	1		1.83	407	1.96	
	2		1.91	404	2.01	
169	1		1.92	410	1.93	
	2		1.99	399	1.95	
Cochran's C-test						
C			0.296	0.563	0.433	
C _{critical} (α = 0.05, m = 2, n = 10)			0.602	0.602	0.602	
C _{critical} (α = 0.01, m = 2, n = 10)			0.718	0.718	0.718	
C < C _{critical}			yes	yes	yes	
Outliers			no evidence for analytical outliers	no evidence for analytical outliers	no evidence for analytical outliers	
Homogeneity test						
General average $\bar{x}$			1.80	398.52	2	
Standard deviation of sample averages s_x			0.088	5.393	0.02	
Within-sample standard deviation s_w			0.069	7.227	0.03	
Between-sample standard deviation s_s			0.073	1.72	0.00	
Standard deviation for proficiency assessment σ_{PT}			0.361	79.703	0.4	
s_s / σ_{PT}			0.20	0.0216	0.000	
Test for homogeneity ($s_s \leq 0.3 \sigma_{PT}$)			passed	passed	passed	



EURL Proficiency Test on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)

Selected congeners - Stability test - Data

Sample	Replicate	Result pg/g / ng/g fat	2,3,7,8-TCDF	PCB 118	PCB 153
35	1		1.851	420	2.00
	2		1.671	430	2.04
110	1		1.655	403	2.00
	2		1.645	414	2.04
141	1		1.824	401	1.95
	2		1.757	383	1.93
Stability test					
General average (stability test) $\bar{y}$			1.73	409	1.99
General average (homogeneity test) $\bar{x}$			1.80	399	1.94
Standard deviation for proficiency assessment σ_{PT}			0.36	80	0.39
$ \bar{y} - \bar{x} $			0.07	10	0.05
Test for stability ($ \bar{y} - \bar{x} \leq 0.3 \sigma_{PT}$)			passed	passed	passed



EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]

EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

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Annex 7: Participants' methods for PCDD/Fs and PCBs

Test sample - Olive oil (2601-OL)

LC	Data set	Sample	Accreditation according to ISO/IEC 17025	Weighed sample [g]	Use of isotope-labelled internal standards for PCDD/F congeners (yes/no)	Other internal standards PCDD/Fs
1	A	2601-OL	yes	2.5	yes	
2		2601-OL				
3	A	2601-OL	yes	3	yes	
4		2601-OL				
5	A	2601-OL	yes	5	yes	
6	A	2601-OL	yes	6	yes	1,2,3,4-Tetrachlorodibenzo-p-dioxin (13C6,99%) / 1,2,3,4,6,9-Hexachlorodibenzofuran (13C12, 98,7%)
7	A	2601-OL	yes	5.0	yes	
8	A	2601-OL	yes	3	yes	13C-1,2,3,4-Cl4DD, 13C- 1,2,3,4,6-Cl5DF, 13C- 1,2,3,4,6,9-Cl6DF, 13C- 1,2,3,4,6,8,9-Cl7DF
9	A	2601-OL	yes	10	yes	
10	A	2601-OL	yes	6	yes	
11	A	2601-OL	yes	3	yes	
12	A	2601-OL	yes	5	yes	
13		2601-OL				
14	A	2601-OL	yes	5	yes	
15		2601-OL				
16	A	2601-OL	yes	6	yes	
17	A	2601-OL	yes	6.015	yes	
18	A	2601-OL	yes	2.5	yes	
19		2601-OL				
20	A	2601-OL	yes	1.3	yes	
21	A	2601-OL	yes	3.604	yes	
22	A	2601-OL	yes	2	yes	
23		2601-OL				
24	A	2601-OL	yes	7.5	yes	
25		2601-OL				
26	A	2601-OL	yes	5.02	yes	All PCDD/Fs
27	A	2601-OL	yes	2.00	yes	
28	A	2601-OL	yes	7.05	yes	
29		2601-OL				
30		2601-OL				
31		2601-OL				
32		2601-OL				
33		2601-OL				
34		2601-OL				
35	A	2601-OL	yes	2	yes	
36		2601-OL				
37	A	2601-OL	yes	2.8	yes	
38	A	2601-OL	yes	8	yes	
39	A	2601-OL	yes	5.02	yes	
40	A	2601-OL	yes	10	yes	
41		2601-OL				
42		2601-OL				
43	A	2601-OL		4		
44	A	2601-OL	yes	5	yes	
45		2601-OL				
46		2601-OL				
47	A	2601-OL	yes	8	yes	
48		2601-OL				
49		2601-OL				
50	A	2601-OL	yes	4.5	yes	
51	A	2601-OL	yes	10	yes	1,2,3,4-TCDD, isotope-labelled
52	A	2601-OL	yes	2	yes	
53		2601-OL				
54		2601-OL				
55		2601-OL				
56	A	2601-OL	yes	4	yes	
57	A	2601-OL	yes	1.6612	yes	
58		2601-OL				
59	A	2601-OL	yes	2	yes	
60	A	2601-OL	yes	8.05	yes	
61	A	2601-OL	yes	4	yes	
62	A	2601-OL	yes	5.03	yes	NA
63	A	2601-OL	yes	4	yes	
64		2601-OL				
65	A	2601-OL	yes	3.8	yes	DF-LCS-C (Wellington Laboratories)
66		2601-OL				
67	A	2601-OL	yes	3.882	yes	
68	A	2601-OL	yes	2.01	yes	
69	A	2601-OL	yes	4.695	yes	
70	A	2601-OL	yes	3.1246	yes	
71		2601-OL				
72		2601-OL				

Olive oil (2601-OL)
Physico-chemical Methods PCDD/Fs - Accreditation, weighed sample, internal standards

LC	Data set	Sample	Accreditation according to ISO/IEC 17025	Weighed sample [g]	Use of isotope-labelled internal standards for PCDD/F congeners (yes/no)	Other internal standards	PCDD/Fs
73	A	2601-OL	yes	5	yes		
74	A	2601-OL	yes	10	yes		
75	A	2601-OL	yes	8	yes		
76	A	2601-OL	yes	5	yes		
77	A	2601-OL	yes	4	yes		
78	A	2601-OL	yes	6.00	yes		
79	A	2601-OL	yes	1.5	yes		
80		2601-OL					
81	A	2601-OL	yes	1.001	yes		
82		2601-OL					
83	A	2601-OL	yes	2.54	yes	all 13C-: CB70, CB111, CB138, CB178, 1378-TCDD, 12478-PeCDD, 123468-HxCDD, 1234679-HpCDD	
84		2601-OL					
85		2601-OL					
86	A	2601-OL	yes	10.2	yes		
87		2601-OL					
88		2601-OL					
89		2601-OL					
90	A	2601-OL	yes	5	yes		
91		2601-OL					
92	A	2601-OL	yes	6.02	yes		
93	A	2601-OL	yes	7.76	yes		
94		2601-OL					
95	A	2601-OL	yes	8	yes		
96	A	2601-OL	yes	3.01	yes		
97		2601-OL					
98	A	2601-OL	yes	3.01	yes		
99	A	2601-OL	yes	5	yes		
100	A	2601-OL	yes	5	yes		
101		2601-OL					
102		2601-OL					
103		2601-OL					
104	A	2601-OL	yes	1.021	yes		
105	A	2601-OL	yes	5.0777	yes		
106	A	2601-OL	yes	10	yes		
107	A	2601-OL	no	10.08	yes		
108	A	2601-OL	yes	5	yes		
109	A	2601-OL	yes	5	yes		
Additional Sets							
78	B	2601-OL	yes	6.10	yes		N/A

LC	Data set	Sample	Accreditation according to ISO/IEC 17025	Weighed sample [g]	Use of isotope-labelled internal standards for DL-PCB congeners (yes/no)	Other internal standards	DL-PCBs
1	A	2601-OL	yes	2.5	yes		
2		2601-OL					
3	A	2601-OL	yes	3	yes		
4		2601-OL					
5	A	2601-OL	yes	5	yes		
6	A	2601-OL	yes	6	yes	1,2,3,4-Tetrachlorodibenzo-p-dioxin (13C6,99%) / 1,2,3,4,6,9-Hexachlorodibenzofuran (13C12, 98,7%)	
7	A	2601-OL	yes	5.0	yes		
8	A	2601-OL	yes	3	yes		
9		2601-OL					
10	A	2601-OL	yes	6	yes		
11	A	2601-OL	yes	3	yes		
12	A	2601-OL	yes	5	yes		
13		2601-OL					
14	A	2601-OL	yes	5	yes		
15		2601-OL					
16	A	2601-OL	yes	6	yes		
17	A	2601-OL	yes	6.015	yes		
18	A	2601-OL	yes	2.5	yes		
19		2601-OL					
20	A	2601-OL	yes	1.3	yes		
21	A	2601-OL	yes	3.604	yes		
22	A	2601-OL	yes	2	yes		
23		2601-OL					
24	A	2601-OL	yes	7.5	yes		
25		2601-OL					
26	A	2601-OL	yes	5.02	yes	All DL-PCB	
27	A	2601-OL	yes	2.00	yes		
28	A	2601-OL	yes	7.05	yes		
29		2601-OL					
30		2601-OL					
31		2601-OL					
32		2601-OL					
33		2601-OL					
34		2601-OL					
35	A	2601-OL	yes		yes		
36		2601-OL					
37	A	2601-OL	yes	2.8	yes		
38	A	2601-OL	yes	8	yes		
39	A	2601-OL	yes	5.02	yes		
40	A	2601-OL	yes	1	yes		
41		2601-OL					
42	A	2601-OL	yes	4	yes		
43	A	2601-OL	yes	4	yes		
44	A	2601-OL	yes	5	yes		
45		2601-OL					
46		2601-OL					
47	A	2601-OL	yes	8	yes		
48		2601-OL					
49		2601-OL					
50	A	2601-OL	yes	4.5	yes	PCB 80, isotope-labelled	
51	A	2601-OL	yes	10	yes		
52	A	2601-OL	yes	2	yes		
53		2601-OL					
54		2601-OL					
55		2601-OL					
56	A	2601-OL	yes	0.5	yes		
57	A	2601-OL	yes	1.6612	yes		
58		2601-OL					
59	A	2601-OL	yes	2	yes		
60	A	2601-OL	yes	8.05	yes		
61		2601-OL					
62	A	2601-OL	yes	5.03	yes	NA	
63	A	2601-OL	yes	4	yes		
64		2601-OL					
65		2601-OL					
66		2601-OL					
67	A	2601-OL	yes	3.882	yes		
68	A	2601-OL	yes	2.01	yes		
69	A	2601-OL	yes	4.695	yes		
70	A	2601-OL	yes	3.1246	yes		
71		2601-OL					
72		2601-OL					

Olive oil (2601-OL)
Physico-chemical Methods DL-PCBs - Accreditation, weighed sample, internal standards

LC	Data set	Sample	Accreditation according to ISO/IEC 17025	Weighed sample [g]	Use of isotope-labelled internal standards for DL-PCB congeners (yes/no)	Other internal standards
						DL-PCBs
73	A	2601-OL	yes	5	yes	
74	A	2601-OL	yes	10	yes	
75	A	2601-OL	yes	8	yes	
76	A	2601-OL	yes	1	yes	
77		2601-OL				
78	A	2601-OL	yes	6.00	yes	
79	A	2601-OL	yes	1.5	yes	
80		2601-OL				
81	A	2601-OL	yes	1.001	yes	
82		2601-OL				
83	A	2601-OL	yes	2.54	yes	all 13C-: CB60, CB70, CB111, CB127, CB159, CB170 (for noPCBs see PCDD/Fs)
84		2601-OL				
85		2601-OL				
86	A	2601-OL	yes	10.2	yes	
87		2601-OL				
88		2601-OL				
89		2601-OL				
90	A	2601-OL	yes	5	yes	
91		2601-OL				
92	A	2601-OL	yes	6.02	yes	
93	A	2601-OL	yes	7.76	yes	
94		2601-OL				
95	A	2601-OL	yes	8	yes	
96	A	2601-OL	yes	0.21	yes	
97		2601-OL				
98	A	2601-OL	yes	3.01	yes	
99	A	2601-OL	yes	5	yes	
100	A	2601-OL	yes	5	yes	
101		2601-OL				
102		2601-OL				
103		2601-OL				
104	A	2601-OL	yes	1.021	yes	
105	A	2601-OL	yes	1.0018	yes	
106	A	2601-OL	yes		yes	
107	A	2601-OL	no	4.01	yes	
108	A	2601-OL	yes	5	yes	
109	A	2601-OL	yes	5	yes	
Additional sets						
78	B	2601-OL	yes	6.10	yes	

LC	Data set	Sample	Accreditation according to ISO/IEC 17025	Weighed sample [g]	Use of isotope-labelled internal standards for NDL-PCB congeners (yes/no)	Other internal standards	NDL-PCBs
1	A	2601-OL	yes	2.5	yes		
2		2601-OL					
3	A	2601-OL	yes	3	yes		
4	A	2601-OL	yes	2	yes		
5	A	2601-OL	yes		yes		
6	A	2601-OL	yes	6	yes		2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB170, 13C12,99%)
7	A	2601-OL	yes	5.0	yes		
8		2601-OL					
9	A	2601-OL		2.5	yes		
10	A	2601-OL	yes	6	yes		
11	A	2601-OL	yes	3	yes		
12	A	2601-OL	yes	5	yes		
13		2601-OL					
14	A	2601-OL	yes	5	yes		
15		2601-OL					
16	A	2601-OL	yes	6	yes		
17	A	2601-OL	yes	6.015	yes		
18	A	2601-OL	yes	2.5	yes		
19		2601-OL					
20	A	2601-OL	yes	1.3	yes		
21	A	2601-OL	yes	3.604	yes		
22	A	2601-OL	yes	2	yes		
23	A	2601-OL	yes	1	yes		
24	A	2601-OL	yes	7.5	yes		
25		2601-OL					
26	A	2601-OL	yes	5.02	yes		All NDL-PCB
27	A	2601-OL	yes	2.0	yes		
28	A	2601-OL	yes	7.05	yes		
29	A	2601-OL	yes	2	no		PCB 171 (to check the extraction, not used for quantification)
30	A	2601-OL	no	1.03	yes		
31	A	2601-OL	no	1	yes		
32		2601-OL					
33		2601-OL					
34	A	2601-OL	yes	2	yes		PCB 198
35	A	2601-OL	yes	2	yes		
36	A	2601-OL	yes	2	yes		
37	A	2601-OL		2.8	yes		
38	A	2601-OL	yes	8	yes		
39	A	2601-OL	yes	0.52	yes		
40	A	2601-OL	yes	1	yes		
41	A	2601-OL	yes	0.5	no		PCB 209 50 ng/ml
42	A	2601-OL	yes	4	yes		
43		2601-OL					
44	A	2601-OL	yes	1	no		TCMX, PCB-209, trans-nonachlor
45	A	2601-OL	yes	1.5	yes		
46	A	2601-OL	yes	1.2	yes		PCB 79, 31, 126 13C
47	A	2601-OL	yes	2	yes		
48	A	2601-OL	yes	0.5	yes		
49	A	2601-OL	yes	1.0	no		
50	A	2601-OL	yes	4.5	yes		
51	A	2601-OL	yes	1	yes		
52	A	2601-OL	yes	2	yes		
53		2601-OL					
54	A	2601-OL	yes	1	yes		C13PCB111
55	A	2601-OL	no	2.5	no		PCB 207
56	A	2601-OL	yes	0.5	yes		
57	A	2601-OL	yes	1.6612	yes		
58	A	2601-OL	yes	1	yes		
59	A	2601-OL	yes	2	yes		
60	A	2601-OL	yes	8.05	yes		
61	A	2601-OL	yes	2	no		PCB-155 and PCB-54
62	A	2601-OL	yes	5.03	yes		NA
63	A	2601-OL	yes	4	yes		
64	A	2601-OL	yes	1	yes		
65	A	2601-OL	yes	3.003	yes		EC-4058 (CIL)
66		2601-OL					
67	A	2601-OL	yes	3.882	yes		
68	A	2601-OL	yes	2.01	yes		
69	A	2601-OL	yes	4.695	yes		
70	A	2601-OL	yes	3.1246	yes		
71	A	2601-OL	no	1	yes		
72	A	2601-OL	yes	0.1	yes		

LC	Data set	Sample	Accreditation according to ISO/IEC 17025	Weighed sample [g]	Use of isotope-labelled internal standards for NDL-PCB congeners (yes/no)	Other internal standards
						NDL-PCBs
73	A	2601-OL	yes	5	yes	
74	A	2601-OL	yes	10	yes	
75	A	2601-OL	yes	0.5	yes	
76	A	2601-OL	yes	1	yes	
77	A	2601-OL	no	4	yes	
78		2601-OL				
79	A	2601-OL	yes	1.5	yes	
80	A	2601-OL	yes	1	yes	
81	A	2601-OL	yes	1.001	yes	
82		2601-OL				
83	A	2601-OL	yes	2.54	yes	all 13C-: CB60, CB70, CB111, CB127, CB159, CB170
84		2601-OL				
85		2601-OL				
86	A	2601-OL	yes	10.2	yes	
87		2601-OL				
88		2601-OL				
89	A	2601-OL	yes	1	yes	
90		2601-OL				
91		2601-OL				
92	A	2601-OL	yes	6.02	yes	
93	A	2601-OL	yes	7.76	yes	
94		2601-OL				
95	A	2601-OL	yes	8	yes	
96	A	2601-OL	yes	0.21	yes	
97		2601-OL				
98	A	2601-OL	yes	3.01	yes	
99	A	2601-OL	yes	5	yes	
100	A	2601-OL	yes	5	yes	
101		2601-OL				
102	A	2601-OL	yes	1	no	PCB 65, PCB 166
103	A	2601-OL	yes	1	no	PCB 209
104	A	2601-OL	yes	1.021	yes	
105	A	2601-OL	yes	1.0018	yes	
106	A	2601-OL	no	10	yes	
107		2601-OL				
108		2601-OL				
109	A	2601-OL	yes	5	yes	
Additional sets						
81	B	2601-OL	yes	1.016	yes	

LC	Data set	Sample	Extraction						
			Sample preparation/pre-treatment	Extraction technique	Extraction solvent	Extraction time [h]	Extraction temperature [°C]	Extraction pressure [MPa]	
1	A	2601-OL	none	none					
2		2601-OL							
3	A	2601-OL	no	High-fat food products – plant and animal fats and oils – are naturally homogeneous and do not require extraction or sample preparation. We perform a sodium sulfate filtration to determine the fat content.					
4		2601-OL							
5	A	2601-OL		Cold extraction	n-Hexan				
6	A	2601-OL							
7	A	2601-OL							
8	A	2601-OL		dissolved in n-hexane	n-hexane		room temperature		
9	A	2601-OL		saponification and LLE	hexane	1	room	room	
10	A	2601-OL							
11	A	2601-OL		Cold extraction	n-Hexan	0,5	RT	atm	
12	A	2601-OL		Column extraction					
13	A	2601-OL							
14	A	2601-OL	homogenization	Column extraction	n-hexane	1	room temp.	atm. pressure	
15		2601-OL							
16	A	2601-OL		no extraction					
17	A	2601-OL	ACID ATTACK						
18	A	2601-OL							
19		2601-OL							
20	A	2601-OL		Cold extraction	cyclohexane/dichloromethane (50/50)				
21	A	2601-OL	No	ASE , Pressurized liquid extraction	Toluene / Ethanol (90/10)	1	100	10,34	
22	A	2601-OL	drying	Pressurized liquid extraction	Toluene / Acetone (70/30)	0.25	120	10	
23		2601-OL							
24	A	2601-OL	dilution in n-hexane						
25		2601-OL							
26	A	2601-OL	None						
27	A	2601-OL		no extraction needed					
28	A	2601-OL							
29		2601-OL							
30		2601-OL							
31		2601-OL							
32		2601-OL							
33		2601-OL							
34		2601-OL							
35	A	2601-OL							
36		2601-OL							
37	A	2601-OL		Pressurized liquid extraction	pentane/acetone 88/12	0,5	80	1500	
38	A	2601-OL							
39	A	2601-OL							
40	A	2601-OL		Extraction on carbon column , Column extraction	toluene	10	boiling temp.		
41		2601-OL							
42		2601-OL							
43	A	2601-OL		no extraction used					
44	A	2601-OL	thorough homogenization	no extraction					
45		2601-OL							
46		2601-OL							
47	A	2601-OL							
48		2601-OL							
49		2601-OL							
50	A	2601-OL		no extraction					
51	A	2601-OL							
52	A	2601-OL	none	Dissolved in Hexane	Hexane 100%	N/A	N/A	N/A	
53		2601-OL							
54		2601-OL							
55		2601-OL							
56	A	2601-OL							
57	A	2601-OL	The oil was treated with an acid column						
58		2601-OL							
59	A	2601-OL	none	none					
60	A	2601-OL							
61	A	2601-OL		Sonication	n-hexane	0.5	room temperature		
62	A	2601-OL	Dissolve	None used	Hexane	0	20	air	
63	A	2601-OL		None					
64		2601-OL							
65	A	2601-OL	homogenization	-					
66		2601-OL							
67	A	2601-OL	None	Column extraction					
68	A	2601-OL							
69	A	2601-OL							
70	A	2601-OL		solvent extraction (n-Hexane)					
71		2601-OL							
72		2601-OL							

LC	Data set	Sample	Extraction						
			Sample preparation/pre-treatment	Extraction technique	Extraction solvent	Extraction time [h]	Extraction temperature [°C]	Extraction pressure [MPa]	
73	A	2601-OL	None	No extraction needed for oil samples					
74	A	2601-OL		Cold extraction	hexane				
75	A	2601-OL							
76	A	2601-OL			n-Hexan				
77	A	2601-OL		MIURA	TOLUEN/HEXAN	1.5			
78	A	2601-OL	None	Diluted in Hexane	Hexane				
79	A	2601-OL		Pressurized liquid extraction	Toluene	0.5	135	1500	
80		2601-OL							
81	A	2601-OL	séchage	Pressurized liquid extraction	Toluène /Acétone (70/30)	0.4 h	120	10	
82		2601-OL	no	No extraction for oils					
83	A	2601-OL							
84		2601-OL							
85		2601-OL		Cold elution	Hexan		Room temperature		
86	A	2601-OL							
87		2601-OL							
88		2601-OL							
89		2601-OL							
90	A	2601-OL	no	Liquid/liquid extraction	hexane				
91		2601-OL							
92	A	2601-OL							
93	A	2601-OL							
94		2601-OL							
95	A	2601-OL	-	Cold extraction	Petrolether 40-60°C	0,5	30	-	
96	A	2601-OL	vortex mix	Automated acid hydrolysis with abbreviated Soxhlet - Hydrotherm™/ Soxtherm™	2 M Sulfuric Acid - Hydrotherm, Hexane - Soxtherm	6	100 - Hydrotherm 140 - Soxtherm		
97		2601-OL		Pressurized liquid extraction	toluene	0.45	135	15	
98	A	2601-OL							
99	A	2601-OL							
100	A	2601-OL							
101		2601-OL							
102		2601-OL		Twisselmann	hexane	8	68	0,101	
103		2601-OL							
104	A	2601-OL							
105	A	2601-OL							
106	A	2601-OL							
107	A	2601-OL	drying for lipid determination	Soxhlet	DCM: hexane=1:1	24	80	0.101325	
108	A	2601-OL		L-L	hexane	0.5	25	-	
109	A	2601-OL							
Additional Sets									
78	B	2601-OL	None	Diluted in Hexane	Hexane				

LC	Data set	Sample	Extraction						
			Sample preparation/pre-treatment	Extraction technique	Extraction solvent	Extraction time [h]	Extraction temperature [°C]	Extraction pressure [MPa]	
1	A	2601-OL	none	none					
2		2601-OL							
3	A	2601-OL		High-fat food products – plant and animal fats and oils – are naturally homogeneous and do not require extraction or sample preparation. We perform a sodium sulfate filtration to determine the fat content.					
4		2601-OL							
5	A	2601-OL		Cold extraction	n-Hexan				
6	A	2601-OL							
7	A	2601-OL							
8	A	2601-OL		dissolved in n-hexane	n-hexane		room temperature		
9		2601-OL							
10	A	2601-OL							
11	A	2601-OL		Cold extraction	n-Hexan	0,5	RT	atm	
12	A	2601-OL		Column extraction					
13		2601-OL							
14	A	2601-OL	homogenization	Column extraction	n-hexane	1	room temp.	atm. pressure	
15		2601-OL							
16	A	2601-OL							
17	A	2601-OL	ACID ATTACK						
18	A	2601-OL							
19		2601-OL							
20	A	2601-OL		Cold extraction					
21	A	2601-OL	No	ASE , Pressurized liquid extraction	Toluene / Ethanol (90/10)	1	100	10,34	
22	A	2601-OL	drying	Pressurized liquid extraction	Toluene / Acetone (70/30)	0.25	120	10	
23		2601-OL							
24	A	2601-OL	dilution in n-hexane						
25		2601-OL							
26	A	2601-OL							
27	A	2601-OL		no extraction needed					
28	A	2601-OL							
29		2601-OL							
30		2601-OL							
31		2601-OL							
32		2601-OL							
33		2601-OL							
34		2601-OL							
35	A	2601-OL							
36		2601-OL							
37	A	2601-OL		Pressurized liquid extraction	pentane/acetone 88/12	0,5	80	1500	
38	A	2601-OL							
39	A	2601-OL							
40	A	2601-OL		SPM	Hx	24	room temp		
41		2601-OL							
42	A	2601-OL	n/a	no extraction					
43	A	2601-OL		no extraction used					
44	A	2601-OL	thorough homogenization	no extraction					
45		2601-OL							
46		2601-OL							
47	A	2601-OL							
48		2601-OL							
49		2601-OL							
50	A	2601-OL		no extraction					
51	A	2601-OL							
52	A	2601-OL	none	Dissolved in Hexane	Hexane 100%	N/A	N/A	N/A	
53		2601-OL							
54		2601-OL							
55		2601-OL							
56	A	2601-OL							
57	A	2601-OL	The oil was treated with an acid column						
58		2601-OL							
59	A	2601-OL	none	none					
60	A	2601-OL							
61		2601-OL							
62	A	2601-OL	Dissolve	None used	Hexane	0	20	air	
63	A	2601-OL		None					
64		2601-OL							
65		2601-OL							
66		2601-OL							
67	A	2601-OL		Column extraction					
68	A	2601-OL							
69	A	2601-OL							
70	A	2601-OL		solvent extraction (n-Hexane)					
71		2601-OL							
72		2601-OL							

LC	Data set	Sample	Extraction					
			Sample preparation/pre-treatment	Extraction technique	Extraction solvent	Extraction time [h]	Extraction temperature [°C]	Extraction pressure [MPa]
73	A	2601-OL		No extraction needed for oil samples				
74	A	2601-OL		Cold extraction	hexane			
75	A	2601-OL			n-Hexan			
76	A	2601-OL						
77		2601-OL	None	Diluted in Hexane	Hexane			
78	A	2601-OL		Pressurized liquid extraction	Toluene	0.5	135	1500
79	A	2601-OL						
80		2601-OL						
81	A	2601-OL	séchage	Pressurized liquid extraction	Toluène /Acétone (70/30)	0.4 h	120	10
82		2601-OL	no	No extraction for oils				
83	A	2601-OL						
84		2601-OL						
85		2601-OL						
86	A	2601-OL		Cold elution	Hexan		Room temperature	
87		2601-OL						
88		2601-OL						
89		2601-OL						
90	A	2601-OL						
91		2601-OL						
92	A	2601-OL		Liquid/liquid extraction	hexane			
93	A	2601-OL						
94		2601-OL	-					
95	A	2601-OL		Cold extraction	Petrolether 40-60°C	0,5	30	-
96	A	2601-OL		Automated acid hydrolysis with abbreviated Soxhlet - Hydrotherm™/ Soxtherm™	2 M Sulfuric Acid - Hydrotherm, Hexane - Soxtherm	6	100 - Hdyrotherm, 140 - Soxtherm	
97		2601-OL						
98	A	2601-OL	Vortex mix	Pressurized liquid extraction	toluene	0.45	135	15
99	A	2601-OL						
100	A	2601-OL		Twisselmann	Hexane	8	68	0,101
101		2601-OL						
102		2601-OL						
103		2601-OL						
104	A	2601-OL		Pressurized liquid extraction	hexane	2 cycles a 5 min	100	10
105	A	2601-OL						
106	A	2601-OL						
107	A	2601-OL		Soxhlet	DCM: hexane=1:1	24	80	0.101325
108	A	2601-OL		L-L	hexane	0.5	25	-
109	A	2601-OL						
Additional sets								
78	B	2601-OL	None	Diluted in Hexane	Hexane			

LC	Data set	Sample	Extraction					
			Sample preparation/pre-treatment	Extraction technique	Extraction solvent	Extraction time [h]	Extraction temperature [°C]	Extraction pressure [MPa]
1	A	2601-OL	none	none				
2		2601-OL						
3	A	2601-OL		High-fat food products – plant and animal fats and oils – are naturally homogeneous and do not require extraction or sample preparation. We perform a sodium sulfate filtration to determine the fat content.				
4	A	2601-OL			Ultra Turrax			
5	A	2601-OL			Cold extraction	n-Hexan		
6	A	2601-OL						
7	A	2601-OL						
8		2601-OL						
9	A	2601-OL			direct clean up on multilayer silica column, elution with DCM:hex 1:1			
10	A	2601-OL						
11	A	2601-OL		Cold extraction	n-Hexan	0,5	RT	atm
12	A	2601-OL		Column extraction				
13		2601-OL						
14	A	2601-OL	homogenization	Column extraction	n-hexane	1	room temp.	atm. pressure
15		2601-OL						
16	A	2601-OL						
17	A	2601-OL	ACID ATTACK					
18	A	2601-OL						
19		2601-OL						
20	A	2601-OL		Cold extraction				
21	A	2601-OL	No drying	ASE , Pressurized liquid extraction	Toluene / Ethanol (90/10)	1	100	10,34
22	A	2601-OL		Pressurized liquid extraction	Toluene / Acetone (70/30)	0.25	120	10
23	A	2601-OL						
24	A	2601-OL	dilution in n-hexane					
25		2601-OL						
26	A	2601-OL						
27	A	2601-OL		no extraction needed				
28	A	2601-OL						
29	A	2601-OL	no freeze drying	Cold extraction	n-Hexan	0,2	roomtemperature	atmospheric
30	A	2601-OL		Pressurized liquid extraction	toluene/acetone 70/30	Approximately 1 hour	120	10
31	A	2601-OL		no extraction, oil dissolve in hexane an then directly put an a silica column				
32		2601-OL						
33		2601-OL						
34	A	2601-OL		Column extraction	Cyclohexan/ Essigsäureethylester (1/1)	0,5	room temperature	
35	A	2601-OL						
36	A	2601-OL		Cold extraction				
37	A	2601-OL		Pressurized liquid extraction	pentane/acetone 88/12	0,5	80	1500
38	A	2601-OL						
39	A	2601-OL						
40	A	2601-OL		SPM	Hx	24	room temp	
41	A	2601-OL		10 ml Hexane overnight	Hexane + Sulfuric acid 95% + Envi Carb	The mixture was centrifugated for 20 min. at 2500 rpm	15 °C	
42	A	2601-OL	n/a	no extraction				
43		2601-OL						
44	A	2601-OL	thorough homogenization	no extraction				
45	A	2601-OL	none	Sample was diluted directly in GPC solvent (ethyl acetate/cyclohexane 1/1, v/v)				
46	A	2601-OL	N/A					
47	A	2601-OL						
48	A	2601-OL		Ultra Turrax				
49	A	2601-OL	homogenization					
50	A	2601-OL		no extraction				
51	A	2601-OL		Ultra Turrax	ethylacetate/cyclohexane (50/50)	2 min	20 °C (room temperature)	
52	A	2601-OL	none	Dissolved in Hexane	Hexane 100%	N/A	N/A	N/A
53		2601-OL						
54	A	2601-OL						
55	A	2601-OL						
56	A	2601-OL						
57	A	2601-OL	The oil was treated with an acid column					
58	A	2601-OL						
59	A	2601-OL	none	none				
60	A	2601-OL						
61	A	2601-OL		Sonication	n-hexane	0.5	room temperature	
62	A	2601-OL	Dissolve	None used	Hexane	0	20	air
63	A	2601-OL		None				
64	A	2601-OL		mechanical shake (Spex shaker)	Ethyl acetate/Cyclohexane(1:1)	0.2	room temperature	
65	A	2601-OL	homogenization	-				
66		2601-OL						
67	A	2601-OL		Column extraction				
68	A	2601-OL						
69	A	2601-OL						
70	A	2601-OL		solvent extraction (n-Hexane)				
71	A	2601-OL		QuEChERS	Acetonitrile	0,5	40	
72	A	2601-OL		Column extraction				

LC	Data set	Sample	Extraction					
			Sample preparation/pre-treatment	Extraction technique	Extraction solvent	Extraction time [h]	Extraction temperature [°C]	Extraction pressure [MPa]
73	A	2601-OL		No extraction needed for oil samples				
74	A	2601-OL		Cold extraction	hexane			
75	A	2601-OL						
76	A	2601-OL			n-Hexan			
77	A	2601-OL		MIURA	TOLUEN/HEXAN	1.5		
78		2601-OL						
79	A	2601-OL	séchage	Pressurized liquid extraction	Toluene	0.5	135	1500
80	A	2601-OL		Ultra Turrax				
81	A	2601-OL		Pressurized liquid extraction	Toluène /Acétone (70/30)	0.4 h	120	10
82		2601-OL	no					
83	A	2601-OL		No extraction for oils				
84		2601-OL						
85		2601-OL						
86	A	2601-OL		Cold elution	Hexan		Room temperature	
87		2601-OL						
88		2601-OL						
89	A	2601-OL		Cold extraction	dichloromethane/cyclohexane	0.05	Ambient	Ambient
90		2601-OL						
91		2601-OL						
92	A	2601-OL		Liquid/liquid extraction	hexane			
93	A	2601-OL						
94		2601-OL	-					
95	A	2601-OL		Cold extraction	Petroleumbenzin 40-60°C	0,5	30	-
96	A	2601-OL		Vortex mixing	Automated acid hydrolysis with abbreviated Soxhlet - Hydrotherm™/ Soxtherm™	2 M Sulfuric Acid - Hydrotherm, Hexane - Soxtherm	6	100 - Hydrotherm, 140 - Soxtherm
97		2601-OL						
98	A	2601-OL		Pressurized liquid extraction	toluene	0.45	135	15
99	A	2601-OL						
100	A	2601-OL		Twisselmann	hexane	8	68	0,101
101		2601-OL						
102	A	2601-OL		Dissolution in hexane	Adsorption chromatography on silica , Column extraction	/	/	/
103	A	2601-OL		Soxhlet	hexane	1	23	
104	A	2601-OL		Pressurized liquid extraction	hexane	2 cycles a 5 min	100	10
105	A	2601-OL						
106	A	2601-OL						
107		2601-OL						
108		2601-OL						
109	A	2601-OL						
Additional sets								
81	B	2601-OL		séchage	Pressurized liquid extraction	Toluène /Acétone (70/30)	0.5 h	120

Olive oil (2601-OL)
Bioanalytical screening methods PCDD/Fs and DL-PCBs - Accreditation, weighed sample, extraction

LC	Data set	Sample	Accreditation	Weighed sample [g]	Extraction					
			according to ISO/IEC 17025		Sample preparation/pre-treatment	Extraction technique	Extraction solvent	Extraction time [h]	Extraction temperature [°C]	Extraction pressure [MPa]
1	A	2601-OL	yes	2	no	Column extraction	hexane/diethylether (97/3)	n.a.	n.a.	n.a.
2		2601-OL								
3	A	2601-OL		4	drying (dissolving in n-hexane and drying on sodium sulphate)					
4		2601-OL								
5		2601-OL								
6		2601-OL								
7		2601-OL								
8		2601-OL								
9		2601-OL								
10		2601-OL								
11		2601-OL								
12		2601-OL								
13		2601-OL								
14		2601-OL								
15		2601-OL								
16		2601-OL								
17		2601-OL								
18		2601-OL								
19		2601-OL								
20		2601-OL								
21		2601-OL								
22		2601-OL								
23		2601-OL								
24		2601-OL								
25		2601-OL								
26		2601-OL								
27		2601-OL								
28		2601-OL								
29		2601-OL								
30		2601-OL								
31		2601-OL								
32		2601-OL								
33		2601-OL								
34		2601-OL								
35		2601-OL								
36		2601-OL								
37		2601-OL								
38		2601-OL								
39		2601-OL								
40		2601-OL								
41		2601-OL								
42		2601-OL								
43	A	2601-OL	yes	4	none	no extraction was used				
44		2601-OL								
45		2601-OL	yes	6.05	homogenization	ultrasonic extraction	hexan	0,5		
46		2601-OL								
47		2601-OL								
48		2601-OL								
49	A	2601-OL								
50		2601-OL								
51		2601-OL								
52		2601-OL								
53		2601-OL								
54		2601-OL								
55		2601-OL								
56		2601-OL								
57		2601-OL								
58		2601-OL								
59		2601-OL								
60		2601-OL								
61		2601-OL								
62		2601-OL								
63		2601-OL								
64		2601-OL								
65		2601-OL								
66		2601-OL								
67		2601-OL								
68		2601-OL								
69		2601-OL								
70		2601-OL								
71		2601-OL								
72		2601-OL								

Olive oil (2601-OL)
Bioanalytical screening methods PCDD/Fs and DL-PCBs - Accreditation, weighed sample, extraction

LC	Data set	Sample	Accreditation	Weighed sample [g]		Extraction						
			according to ISO/IEC 17025				Sample preparation/pre-treatment	Extraction technique	Extraction solvent	Extraction time [h]	Extraction temperature [°C]	Extraction pressure [MPa]
73		2601-OL										
74		2601-OL										
75		2601-OL										
76		2601-OL										
77		2601-OL										
78		2601-OL										
79		2601-OL										
80		2601-OL										
81		2601-OL										
82	A	2601-OL	yes	3		no						
83		2601-OL										
84		2601-OL										
85		2601-OL										
86		2601-OL										
87		2601-OL										
88		2601-OL										
89		2601-OL										
90		2601-OL										
91		2601-OL										
92		2601-OL										
93		2601-OL										
94		2601-OL										
95		2601-OL										
96		2601-OL										
97		2601-OL										
98		2601-OL										
99		2601-OL										
100		2601-OL										
101		2601-OL										
102		2601-OL										
103		2601-OL										
104		2601-OL										
105		2601-OL										
106	A	2601-OL	no	1.1								
107		2601-OL										
108		2601-OL										
109		2601-OL										
Additional sets												
82	B	2601-OL	yes	3		no						

LC	Data set	Sample	Clean-up										Final volume [µl]: PCDD/F
			Gelchromatography	Silica/sulfuric acid column	Florisil column	Alumina column	Carbon column	Fully automated system - DexTech	Fully automated system - Miura	Fully automated system - PowerPrep	Semi-automated system	Other columns / clean-up method	
1	A	2601-OL	no	yes	no	yes	yes	yes	no	no	no		500
2		2601-OL											
3	A	2601-OL	no	yes	yes	no	yes	no	no	no	no		15
4		2601-OL											
5	A	2601-OL	no	yes	no	yes	no	no	no	no	no		20
6	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		20
7	A	2601-OL	no	no	no	no	no	no	no	yes	no	liquid-liquid partitioning process with sulphuric acid	20
8	A	2601-OL	no	no	no	no	no	yes	no	no	no		10
9	A	2601-OL	yes	yes	no	no	yes	no	no	no	no		10
10	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		20
11	A	2601-OL	no	no	no	no	no	no	yes	no	no		50
12	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		20
13		2601-OL											
14	A	2601-OL	no	no	no	no	no	no	no	yes	no	Power-Prep FMS with PBDE Free disp. columns: silica, alumina, carbon	10
15		2601-OL											
16	A	2601-OL	no	yes	no	no	yes	no	no	no	no		20
17	A	2601-OL	no		no	no	no	yes	no	no	no		50
18	A	2601-OL	no	no	no	no	no	no	yes	no	no		12
19		2601-OL											
20	A	2601-OL	no	yes	yes	yes	yes	no	yes	no	no		15
21	A	2601-OL	no	yes	no	yes	yes	no	no	no	no	EZ Prep	10
22	A	2601-OL	no	no	no	no	no	no	yes	no	no		10
23		2601-OL											
24	A	2601-OL	no	yes	no	yes	yes	no	yes	no	no	Silica/AgNO3	50
25		2601-OL											
26	A	2601-OL	no	yes	no	no	no	no	no	yes	no		25
27	A	2601-OL	yes	yes	yes	no	yes	yes	no	no	no		20
28	A	2601-OL	no	yes	no	no	no	no	no	no	no		20
29		2601-OL											
30		2601-OL											
31		2601-OL											
32		2601-OL											
33		2601-OL											
34		2601-OL											
35	A	2601-OL	no	no	no	no	no	yes	no	no	no		30
36		2601-OL											
37	A	2601-OL	no	yes	no	yes	yes	no	yes	no	no	Silver nitrate column	20
38	A	2601-OL	no	no	no	no	no	no	yes	no	no	acidic treatment	25
39	A	2601-OL	no	yes	no	no	no	no	no	yes	no		10
40	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		20
41		2601-OL											
42		2601-OL											
43	A	2601-OL	no	no	no	no	no	no	yes	no	no		20
44	A	2601-OL	no	yes	no	yes	yes	no	no	no	no	basic silica, silver nitrate silica	10
45		2601-OL											
46		2601-OL											
47	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		10
48		2601-OL											
49		2601-OL											
50	A	2601-OL	no	no	no	no	no	yes	no	no	no		40
51	A	2601-OL	yes	yes	no	yes	yes	no	no	no	no		30
52	A	2601-OL	no	no	no	no	no	no	yes	no	no		
53		2601-OL											
54		2601-OL											
55		2601-OL											
56	A	2601-OL	no	no	no	no	no	yes	no	no	yes		
57	A	2601-OL	no	no	no	no	no	no	no	yes	no		20
58		2601-OL											
59	A	2601-OL	no	no	no	no	no	yes	no	no	no		30
60	A	2601-OL	yes	yes	no	no	yes	no	no	no	no		10
61	A	2601-OL	no	no	no	no	no	yes	no	no	no		20
62	A	2601-OL	no	yes	no	yes	no	no	no	no	no		10
63	A	2601-OL	no	no	no	no	no	yes	no	no	no		9
64		2601-OL											
65	A	2601-OL	no	yes	no	yes	no	no	no	no	no	-	10
66		2601-OL											
67	A	2601-OL	no	yes	no	yes	yes	yes	no	no	no		30
68	A	2601-OL	no	no	no	no	no	no	yes	no	no		40
69	A	2601-OL	no	no	no	no	no	no	no	yes	no		20
70	A	2601-OL	no	no	no	no	no	yes	no	no	no		20
71		2601-OL											
72		2601-OL											

LC	Data set	Sample	Clean-up										Final volume [µl]: PCDD/F
			Gelchromatography	Silica/sulfuric acid column	Florisil column	Alumina column	Carbon column	Fully automated system - DexTech	Fully automated system - Miura	Fully automated system - PowerPrep	Semi-automated system	Other columns / clean-up method	
73	A	2601-OL	no	no	no	no	no	yes	no	no	no		20
74	A	2601-OL	no	yes	no	yes	no	no	no	no	no		50
75	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		50
76	A	2601-OL	no	yes	yes	yes	no	no	no	no	no		20
77	A	2601-OL	no	no	no	no	no	no	yes	no	no		
78	A	2601-OL	no	no	no	no	no	no	no	yes	no	Acidified Silica - Alumina - Carbon	10
79	A	2601-OL	no	yes	no	yes	yes	no	no	yes	no		10
80		2601-OL											
81	A	2601-OL	no	no	no	no	no	no	yes	no	no		10
82		2601-OL											
83	A	2601-OL	no	no	no	no	no	no	yes	no	no		500
84		2601-OL											
85		2601-OL											
86	A	2601-OL	no	yes	no	yes	no	no	no	no	no		50
87		2601-OL											
88		2601-OL											
89		2601-OL											
90	A	2601-OL	no	yes	yes	yes	no	no	no	no	no		25
91		2601-OL											
92	A	2601-OL	no	no	no	no	no	yes	no	no	no		20
93	A	2601-OL	no	yes	no	no	no	no	no	no	no	basic set of "power-prep system" columns	19
94		2601-OL											
95	A	2601-OL	yes	yes	no	no	yes	no	no	no	yes		20
96	A	2601-OL	no	no	no	no	no	no	yes	no	no		10
97		2601-OL											
98	A	2601-OL	no	yes	yes	yes	yes	no	no	no	yes		10
99	A	2601-OL	no	yes	no	yes	no	no	no	no	no		20
100	A	2601-OL	no	no	no	no	no	no	yes	no	no		50
101		2601-OL											
102		2601-OL											
103		2601-OL											
104	A	2601-OL	no	yes	no	yes	yes	no	yes	no	no	silver nitrate column	15
105	A	2601-OL	no	yes	no	yes	no	no	no	no	no		25
106	A	2601-OL	no	no	no	no	no	yes	no	no	no		20
107	A	2601-OL	no	yes	no	no	yes	no	no	no	no		20
108	A	2601-OL	no	yes	yes	no	no	no	no	no	no		50
109	A	2601-OL	no	no	no	no	no	yes	no	no	no		20
Additional Sets													
78	B	2601-OL	no	no	no	no	no	no	no	yes	no	Acidified Silica - Alumina - Carbon	10

LC	Data set	Sample	Clean-up										Other columns / clean-up method	Final volume [µl]: PCDD/F
			Gelchromatography	Silica/sulfuric acid column	Florisil column	Alumina column	Carbon column	Fully automated system - DexTech	Fully automated system - Miura	Fully automated system - PowerPrep	Semi-automated system			
1	A	2601-OL	no	yes	no	yes	yes	no	no	no		500		
2		2601-OL												
3	A	2601-OL	no	yes	no	no	no	no	no	no		50		
4		2601-OL												
5	A	2601-OL	no	yes	no	yes	no	no	no	no				
6	A	2601-OL	no	yes	no	yes	yes	no	no	no		20		
7	A	2601-OL	no	no	no	no	no	no	yes	no	liquid-liquid partitioning process with sulphuric acid	40		
8	A	2601-OL	no	no	no	no	no	no	no	no		80		
9		2601-OL												
10	A	2601-OL	no	yes	no	yes	yes	no	no	no		20		
11	A	2601-OL	no	no	no	no	no	yes	no	no		50		
12	A	2601-OL	no	yes	no	yes	yes	no	no	no		20		
13		2601-OL												
14	A	2601-OL	no	no	no	no	no	no	yes	no	Power-Prep FMS with PBDE Free disp. columns: silica, alumina, carbon	20		
15		2601-OL												
16	A	2601-OL	yes	no	no	yes	no	no	no			30		
17	A	2601-OL	no	no	no	no	no	yes	no	no		250		
18	A	2601-OL	no	no	no	no	no	yes	no	no		50		
19		2601-OL												
20	A	2601-OL	no	yes	yes	yes	yes	no	yes	no		25		
21	A	2601-OL	no	yes	no	yes	yes	no	no	no	EZ Prep	200		
22	A	2601-OL	no	no	no	no	no	yes	no	no		50		
23		2601-OL												
24	A	2601-OL	no	yes	no	yes	yes	no	yes	no	Silica/AgNO2	100		
25		2601-OL												
26	A	2601-OL	no	yes	no	no	no	no	yes	no		25		
27	A	2601-OL	yes	yes	yes	no	yes	no	no	no		60		
28	A	2601-OL	no	yes	no	no	no	no	no	no		50		
29		2601-OL												
30		2601-OL												
31		2601-OL												
32		2601-OL												
33		2601-OL												
34		2601-OL												
35	A	2601-OL	no	no	no	no	no	no	no			30		
36		2601-OL												
37	A	2601-OL	no	yes	no	yes	yes	no	yes	no	Silver nitrate column	1000		
38	A	2601-OL	no	no	no	no	no	yes	yes	no	acidic treatment	50		
39	A	2601-OL	no	yes	no	no	no	no	yes	no		20		
40	A	2601-OL	no	yes	no	yes	no	no	no	no		50		
41		2601-OL												
42	A	2601-OL	no	yes	no	yes	yes	no	no	no		100		
43	A	2601-OL	no	no	no	no	no	yes	no	no		20		
44	A	2601-OL	no	yes	no	yes	yes	no	no	no	basic silica, silver nitrate silica	10		
45		2601-OL												
46		2601-OL												
47	A	2601-OL	no	yes	no	yes	no	no	no	no		10		
48		2601-OL												
49		2601-OL												
50	A	2601-OL	no	no	no	no	no	yes	no	no		200		
51	A	2601-OL	yes	yes	no	yes	no	no	no	no		30		
52	A	2601-OL	no	no	no	no	no	no	yes	no		25		
53		2601-OL												
54		2601-OL												
55		2601-OL												
56	A	2601-OL	no	no	no	no	yes	no	no	yes		500		
57	A	2601-OL	no	no	no	no	no	no	no	yes	no	20		
58		2601-OL												
59	A	2601-OL	no	no	no	no	no	yes	no	no		30		
60	A	2601-OL	yes	yes	no	no	yes	no	no	no		10		
61		2601-OL												
62	A	2601-OL	no	yes	no	yes	no	no	no	no		50		
63	A	2601-OL	no	no	no	no	no	yes	no	no		100		
64		2601-OL												
65		2601-OL												
66		2601-OL												
67	A	2601-OL	no	yes	no	yes	yes	no	no	no		500		
68	A	2601-OL	no	no	no	no	no	yes	no	no		40		
69	A	2601-OL	no	no	no	no	no	no	yes	no		20		
70	A	2601-OL	no	no	no	no	no	yes	no	no		20		
71		2601-OL												
72		2601-OL												

LC	Data set	Sample	Clean-up										Other columns / clean-up method	Final volume [µl]: PCDD/F
			Gelchromatography	Silica/sulfuric acid column	Florisil column	Alumina column	Carbon column	Fully automated system - DexTech	Fully automated system - Miura	Fully automated system - PowerPrep	Semi-automated system			
73	A	2601-OL	no	no	no	no	no	yes	no	no	no		20	
74	A	2601-OL	no	yes	no	yes	no	no	no	no	no		50	
75	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		50	
76	A	2601-OL	no	yes	yes	yes	no	no	no	no	no		20	
77		2601-OL												
78	A	2601-OL	no	no	no	no	no	no	no	yes	no	Acidified Silica - Alumina - Carbon	30	
79	A	2601-OL	no	yes	no	yes	yes	no	no	yes	no		80	
80		2601-OL												
81	A	2601-OL	no	no	no	no	no	no	yes	no	no		50	
82		2601-OL												
83	A	2601-OL	no	no	no	no	no	no	yes	no	no		200	
84		2601-OL												
85		2601-OL												
86	A	2601-OL	no	yes	no	yes	no	no	no	no	no		100	
87		2601-OL												
88		2601-OL												
89		2601-OL												
90	A	2601-OL	no	yes	yes	yes	no	no	no	no	no		25	
91		2601-OL												
92	A	2601-OL	no	no	no	no	no	yes	no	no	no	basic set of "power-prep system" columns	50	
93	A	2601-OL	no	yes	no	no	no	no	no	no	no		40	
94		2601-OL												
95	A	2601-OL	yes	yes	no	no	yes	no	no	no	yes		20	
96	A	2601-OL	no	no	no	no	no	no	yes	no	no		12	
97		2601-OL												
98	A	2601-OL	no	yes	yes	yes	yes	no	no	no	yes		20	
99	A	2601-OL	no	yes	no	yes	no	no	no	no	no		20	
100	A	2601-OL	no	no	no	no	no	no	yes	no	no		100	
101		2601-OL												
102		2601-OL												
103		2601-OL												
104	A	2601-OL	no	yes	no	yes	yes	no	yes	no	no	silver nitrate column	20	
105	A	2601-OL	no	yes	no	yes	no	no	no	no	no		100	
106	A	2601-OL	no	no	no	no	no	yes	no	no	no		500	
107	A	2601-OL	no	yes	no	no	yes	no	no	no	no		20	
108	A	2601-OL	no	yes	yes	no	no	no	no	no	no		500	
109	A	2601-OL	no	no	no	no	no	yes	no	no	no		20	
Additional sets														
78	B	2601-OL	no	no	no	no	no	no	no	yes	no	Acidified Silica - Alumina - Carbon	30	

LC	Data set	Sample	Clean-up										Other columns / clean-up method	Final volume [μl]: PCDD/F
			Gelchromatography	Silica/sulfuric acid column	Florisil column	Alumina column	Carbon column	Fully automated system - DexTech	Fully automated system - Miura	Fully automated system - PowerPrep	Semi-automated system			
1	A	2601-OL	no	yes	no	yes	yes	yes	no	no	no		500	
2		2601-OL												
3	A	2601-OL	no	yes	yes	no	no	no	no	no	no		50	
4	A	2601-OL	no	yes	no	no	no	no	no	no	no		1000	
5	A	2601-OL	no	yes	no	yes	no	no	no	no	no			
6	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		200	
7	A	2601-OL	no	no	no	no	no	no	no	yes	no	liquid-liquid partitioning process with sulphuric acid	40	
8		2601-OL												
9	A	2601-OL	yes	yes	no	no	yes	no	no	no	no		20	
10	A	2601-OL	no	yes	no	yes	yes	no	no	no	no		20	
11	A	2601-OL	no	no	no	no	no	no	yes	no	no		50	
12	A	2601-OL	no	yes	no	yes	no	no	no	no	no		500	
13		2601-OL												
14	A	2601-OL	no	no	no	no	no	no	no	yes	no	Power-Prep FMS with PBDE Free disp. columns: silica, alumina, carbon	20	
15		2601-OL												
16	A	2601-OL	no	yes	no	no	yes	no	no	no	no		50	
17	A	2601-OL	no	no	no	no	no	yes	no	no	no		250	
18	A	2601-OL	no	no	no	no	no	no	yes	no	no		50	
19		2601-OL												
20	A	2601-OL	no	yes	yes	yes	yes	no	yes	no	no		25	
21	A	2601-OL	no	yes	no	yes	yes	no	no	no	no	EZ Prep	200	
22	A	2601-OL	no	no	no	no	no	no	yes	no	no		50	
23	A	2601-OL	no	yes	yes	no	no	no	no	no	no		50	
24	A	2601-OL	no	yes	no	yes	yes	no	yes	no	no	Silica/AgNO3	100	
25		2601-OL												
26	A	2601-OL	no	yes	no	no	no	no	no	yes	no		60	
27	A	2601-OL	yes	yes	yes	no	yes	yes	no	no	no		500	
28	A	2601-OL	no	yes	no	no	no	no	no	no	no		50	
29	A	2601-OL	no	yes	no	no	no	no	no	no	no		500	
30	A	2601-OL	no	yes	yes	no	no	no	no	no	no		50	
31	A	2601-OL	no	yes	no	no	no	no	no	no	no		1000	
32		2601-OL												
33		2601-OL												
34	A	2601-OL	yes	no	no	no	no	no	no	no	no	silica column	1000	
35	A	2601-OL	no	no	no	no	no	yes	no	no	no		400	
36	A	2601-OL	yes	no	no	no	no	no	no	no	no			
37	A	2601-OL	no	yes	no	yes	yes	no	yes	no	no	Silver nitrate column	1000	
38	A	2601-OL	no	no	no	no	no	no	yes	no	no	acidic treatment	50	
39	A	2601-OL	no	yes	yes	no	no	no	no	no	no	NT3 - Extrelut	50	
40	A	2601-OL	no	yes	no	yes	no	no	no	no	no		50	
41	A	2601-OL	no	no	no	no	no	no	no	no	no	SPE Bond Elut PCB	500	
42	A	2601-OL	no	yes	no	yes	yes	yes	no	no	no		100	
43		2601-OL												
44	A	2601-OL	yes	yes	no	no	no	no	no	no	no		1000	
45	A	2601-OL	yes	yes	no	no	no	no	no	no	no		500	
46	A	2601-OL	no	yes	no	no	no	no	no	no	no		100	
47	A	2601-OL	no	yes	yes	no	no	no	no	no	no		50	
48	A	2601-OL	yes	no	no	no	no	no	no	no	no		50	
49	A	2601-OL	no	no	no	no	no	no	no	no	no	sulfuric acid hydrolysis	500	
50	A	2601-OL	no	no	no	no	no	yes	no	no	no		200	
51	A	2601-OL	yes	no	no	no	no	no	no	no	yes	SPE with C18 and PSA column	250	
52	A	2601-OL	no	no	no	no	no	no	yes	no	no			
53		2601-OL												
54	A	2601-OL	no	yes	no	no	no	no	no	no	no		50	
55	A	2601-OL	no	no	no	no	no	no	no	no	no			
56	A	2601-OL	no	no	no	no	no	yes	no	no	yes			
57	A	2601-OL	no	no	no	no	no	no	no	yes	no		20	
58	A	2601-OL	no	yes	no	no	no	no	no	no	no		250	
59	A	2601-OL	no	no	no	no	no	yes	no	no	no		30	
60	A	2601-OL	yes	yes	no	no	yes	no	no	no	no		75	
61	A	2601-OL	no	no	no	no	no	no	no	no	no	Acid treatment + SPE with silica cartridges	500	
62	A	2601-OL	no	yes	no	yes	no	no	no	no	no		50	
63	A	2601-OL	no	no	no	no	no	yes	no	no	no		100	
64	A	2601-OL	yes	yes	no	no	no	no	no	no	no		1000	
65	A	2601-OL	no	yes	no	yes	no	no	no	no	no	-	150	
66		2601-OL												
67	A	2601-OL	no	yes	no	yes	yes	yes	no	no	no			
68	A	2601-OL	no	no	no	no	no	no	yes	no	no		40	
69	A	2601-OL	no	no	no	no	no	no	no	yes	no		10	
70	A	2601-OL	no	no	no	no	no	yes	no	no	no		20	
71	A	2601-OL	no	no	no	no	no	no	no	no	no	d-SPE (PSA+Florisil)		
72	A	2601-OL	no	yes	yes	no	no	no	no	no	no		50	

LC	Data set	Sample	Clean-up										Other columns / clean-up method	Final volume [µl]: PCDD/F
			Gelchromatography	Silica/sulfuric acid column	Florisil column	Alumina column	Carbon column	Fully automated system - DexTech	Fully automated system - Miura	Fully automated system - PowerPrep	Semi-automated system			
73	A	2601-OL	no	no	no	no	no	yes	no	no	no	no	20	
74	A	2601-OL	no	yes	no	yes	no	no	no	no	no	no	500	
75	A	2601-OL	no	yes	no	yes	no	no	no	no	no	no	50	
76	A	2601-OL	no	yes	yes	yes	no	no	no	no	no	no	20	
77	A	2601-OL	no	no	no	no	no	no	yes	no	no	no		
78		2601-OL												
79	A	2601-OL	no	yes	no	yes	yes	no	no	yes	no	no	80	
80	A	2601-OL	no	yes	no	no	no	no	no	no	no	no		
81	A	2601-OL	no	no	no	no	no	no	yes	no	no	no	50	
82		2601-OL												
83	A	2601-OL	no	no	no	no	no	no	yes	no	no	no	200	
84		2601-OL												
85		2601-OL												
86	A	2601-OL	no	yes	no	yes	no	no	no	no	no	no	1000	
87		2601-OL												
88		2601-OL												
89	A	2601-OL	yes	no	no	no	no	no	no	no	no	no		
90		2601-OL												
91		2601-OL												
92	A	2601-OL	no	no	no	no	no	yes	no	no	no	no	50	
93	A	2601-OL	no	yes	no	no	no	no	no	no	no	basic set of "power-prep system" columns	40	
94		2601-OL												
95	A	2601-OL	yes	yes	no	no	yes	no	no	no	yes	yes	1000	
96	A	2601-OL	no	no	no	no	no	no	yes	no	no	no	12	
97		2601-OL												
98	A	2601-OL	no	yes	yes	yes	yes	no	no	no	yes	yes	20	
99	A	2601-OL	no	yes	no	yes	no	no	no	no	no	no	20	
100	A	2601-OL	no	no	no	no	no	no	yes	no	no	no	100	
101		2601-OL												
102	A	2601-OL	no	yes	no	no	no	no	no	no	no	Deactivated silica	500	
103	A	2601-OL	no	yes	no	no	no	no	no	no	no	no	1000	
104	A	2601-OL	no	yes	no	yes	yes	no	yes	no	no	silver nitrate column	20	
105	A	2601-OL	no	yes	no	yes	no	no	no	no	no	no	100	
106	A	2601-OL	no	no	no	no	no	yes	no	no	no	no	500	
107		2601-OL												
108		2601-OL												
109	A	2601-OL	no	no	no	no	no	yes	no	no	no	no	50	
Additional sets														
81	B	2601-OL	no	yes	yes	no	no	no	no	no	no	no	50	

LC	Data set	Sample	Clean-up					Clean-up (Separate analysis of PCDD/Fs and DL-PCBs)				
			Gelchromatography	Silica/sulfuric acid column	Florisil column	Alumina column	Carbon column	Other column	Separate analysis (yes/no)	Alumina column	Florisil column	Carbon column
1	A	2601-OL	no	yes	no	no	no		no	no	no	
2		2601-OL										
3	A	2601-OL	no	yes	no	no	yes		yes	no	no	yes
4		2601-OL										
5		2601-OL										
6		2601-OL										
7		2601-OL										
8		2601-OL										
9		2601-OL										
10		2601-OL										
11		2601-OL										
12		2601-OL										
13		2601-OL										
14		2601-OL										
15		2601-OL										
16		2601-OL										
17		2601-OL										
18		2601-OL										
19		2601-OL										
20		2601-OL										
21		2601-OL										
22		2601-OL										
23		2601-OL										
24		2601-OL										
25		2601-OL										
26		2601-OL										
27		2601-OL										
28		2601-OL										
29		2601-OL										
30		2601-OL										
31		2601-OL										
32		2601-OL										
33		2601-OL										
34		2601-OL										
35		2601-OL										
36		2601-OL										
37		2601-OL										
38		2601-OL										
39		2601-OL										
40		2601-OL										
41		2601-OL										
42		2601-OL										
43	A	2601-OL	no	yes	no	no	yes		yes	no	no	yes
44		2601-OL										
45		2601-OL										
46		2601-OL										
47		2601-OL										
48		2601-OL										
49	A	2601-OL	no	yes	no	no	no		no	no	no	no
50		2601-OL										
51		2601-OL										
52		2601-OL										
53		2601-OL										
54		2601-OL										
55		2601-OL										
56		2601-OL										
57		2601-OL										
58		2601-OL										
59		2601-OL										
60		2601-OL										
61		2601-OL										
62		2601-OL										
63		2601-OL										
64		2601-OL										
65		2601-OL										
66		2601-OL										
67		2601-OL										
68		2601-OL										
69		2601-OL										
70		2601-OL										
71		2601-OL										
72		2601-OL										

LC	Data set	Sample	Clean-up					Clean-up (Separate analysis of PCDD/Fs and DL-PCBs)				
			Gelchromatography	Silica/sulfuric acid column	Florisil column	Alumina column	Carbon column	Other column	Separate analysis (yes/no)	Alumina column	Florisil column	Carbon column
73		2601-OL										
74		2601-OL										
75		2601-OL										
76		2601-OL										
77		2601-OL										
78		2601-OL										
79		2601-OL										
80		2601-OL										
81		2601-OL										
82	A	2601-OL	no	yes	no	no	no	no	no	no	no	
83		2601-OL										
84		2601-OL										
85		2601-OL										
86		2601-OL										
87		2601-OL										
88		2601-OL										
89		2601-OL										
90		2601-OL										
91		2601-OL										
92		2601-OL										
93		2601-OL										
94		2601-OL										
95		2601-OL										
96		2601-OL										
97		2601-OL										
98		2601-OL										
99		2601-OL										
100		2601-OL										
101		2601-OL										
102		2601-OL										
103		2601-OL										
104		2601-OL										
105		2601-OL										
106	A	2601-OL	no	yes	no	no	no	no	no	no	no	
107		2601-OL										
108		2601-OL										
109		2601-OL										
Additional sets												
82	B	2601-OL	no	yes	no	no	no	no	no	no	no	

LC	Data set	Sample	Detection			
			GC injection	Injected volume [µl]	GC separation: Stationary phase	Detector
1	A	2601-OL	PTV	100	Fused silica capillair column length 60 m; diameter 0,25 mm, filmthickness 0,25 µm, coating DB 5MS	HRMS
2		2601-OL				
3	A	2601-OL	PTV	2	DB5-MS (5%-phenyl)-methylpolysiloxane)	HRMS
4		2601-OL				
5	A	2601-OL	Splitless			MS/MS
6	A	2601-OL	PTV	2.5	5% Diphenyl / 95% Dimethylpolysiloxan	MS/MS
7	A	2601-OL	Splitless	2	DB5-MS 60m x 0,25mm x 0,1 um	HRMS
8	A	2601-OL	Splitless	1.5	Thermo TR-Dioxin (5% diphenyl - 95% polysilphenylene siloxane)	HRMS
9	A	2601-OL	PTV	5	DB5MS UI	MS/MS
10	A	2601-OL	Splitless	3		MS/MS
11	A	2601-OL	PTV	2	DB-5ms	HRMS
12	A	2601-OL	Splitless	5	5% phenyl-methylpolysiloxane	MS/MS
13		2601-OL				
14	A	2601-OL	Splitless	3	DB-5msUI	HRMS
15		2601-OL				
16	A	2601-OL	Splitless	3	Zebron ZB-dioxin	MS/MS
17	A	2601-OL	Splitless	1.5		MS/MS
18	A	2601-OL	Splitless	2	RTX	HRMS
19		2601-OL				
20	A	2601-OL	Splitless	2		HRMS
21	A	2601-OL	Splitless	2	% 5 phenyl, % 95 polydimethyl siloxane	MS/MS
22	A	2601-OL	Splitless	2	RTX-PCB 40m	HRMS
23		2601-OL				
24	A	2601-OL	PTV	5	Rtx-Dioxin2, DB-5Q	HRMS
25		2601-OL				
26	A	2601-OL	PTV	1	5% Polysilarylene - 95% Polydimethilsyloxane (Zebron-dioxins)	HRMS
27	A	2601-OL	PTV	5	DB-5MS	HRMS
28	A	2601-OL	PTV	5		MS/MS
29		2601-OL				
30		2601-OL				
31		2601-OL				
32		2601-OL				
33		2601-OL				
34		2601-OL				
35	A	2601-OL	PTV	5	db5	HRMS
36		2601-OL				
37	A	2601-OL	Splitless	1.0	DB5-MS	HRMS
38	A	2601-OL	Splitless	1.8	DB-5MS	HRMS
39	A	2601-OL	Splitless	1	5% Phenyl, 94% Methyl, 1% Vinylsilicone 60m*0.25mm*0.1 um	HRMS
40	A	2601-OL	Splitless	2	DB5MS 30x0.25x0.25	MS/MS
41		2601-OL				
42		2601-OL				
43	A	2601-OL	Splitless	4	DB5 MS	MS/MS
44	A	2601-OL	Splitless	2	DB-5MS	HRMS
45		2601-OL				
46		2601-OL				
47	A	2601-OL	Splitless	2	DB-5MS	HRMS
48		2601-OL				
49		2601-OL				
50	A	2601-OL	PTV	5	ZB-Dioxin	MS/MS
51	A	2601-OL	Splitless	2	DB-5MS	HRMS
52	A	2601-OL	PTV	6	RTX- Dioxin 2	HRMS
53		2601-OL				
54		2601-OL				
55		2601-OL				
56	A	2601-OL	PTV	6	TR-DIOXIN -5ms 60m Thermo	HRMS
57	A	2601-OL	Splitless	2	DB-5ms	HRMS
58		2601-OL				
59	A	2601-OL	PTV	2	Rtx-Dioxin2	HRMS
60	A	2601-OL	Splitless	2	RTX-5MS	HRMS
61	A	2601-OL	Splitless	1	5MS	HRMS
62	A	2601-OL	Splitless	1	Fused Silica VF-Xms	MS/MS
63	A	2601-OL	PTV	5	VF-5ms 50m	HRMS
64		2601-OL				
65	A	2601-OL	- , PTV	3	(5%-Phenyl)-methylpolysiloxane	MS/MS
66		2601-OL				

LC	Data set	Sample	Detection			
			GC injection	Injected volume [µl]	GC separation: Stationary phase	Detector
67	A	2601-OL	Splitless	2	DB 5-MS	HRMS
68	A	2601-OL	PTV	5	DB-5MS	HRMS
69	A	2601-OL	PTV	1	DB-5MS-UI	HRMS
70	A	2601-OL	Splitless	2	DB-5ms(60m×0.25mm×0.25µm)	HRMS
71		2601-OL				
72		2601-OL				
73	A	2601-OL	Splitless	2	DB-5	MS/MS
74	A	2601-OL	PTV	5	SLB-MS; DB-Dioxin	HRMS
75	A	2601-OL	Splitless	1.5	DB-5MS	HRMS
76	A	2601-OL	PTV	2	60m DB-5 MS, 0,25mm, 0,25µm	HRMS
77	A	2601-OL	PTV	5		MS/MS
78	A	2601-OL	PTV	1	ZB5MS	HRMS
79	A	2601-OL	Splitless	1	5% Phenyl (equiv) polysilphenylene-siloxane	HRMS
80		2601-OL				
81	A	2601-OL	Splitless	2	DB-5MS	HRMS
82		2601-OL				
83	A	2601-OL	PTV	100	Rtx-Dioxin2	HRMS
84		2601-OL				
85		2601-OL				
86	A	2601-OL	PTV	5	DB-Dioxin, 5SLB-MS	HRMS
87		2601-OL				
88		2601-OL				
89		2601-OL				
90	A	2601-OL	Splitless	3	TraceGOLD TG-Dioxin	HRMS, MS/MS
91		2601-OL				
92	A	2601-OL	Splitless	2	DB-5MS	HRMS
93	A	2601-OL	Splitless	2	DB-5MS (60 m, 0.25 mm id, 0.25 mm film)	HRMS
94		2601-OL				
95	A	2601-OL	Splitless	1.5	db-xlb 30 * 0,18 * 0,18	HRMS
96	A	2601-OL	Splitless	1	DB-5	MS/MS
97		2601-OL				
98	A	2601-OL	Splitless	1	DB5MS	HRMS
99	A	2601-OL	PTV	3	DB-5MS 60 m × 0,25 mm i.d., 0,10 µm	HRMS
100	A	2601-OL	PTV	7	DB-5ms	HRMS
101		2601-OL				
102		2601-OL				
103		2601-OL				
104	A	2601-OL	Splitless	2	Rxi-5SIL MS (5% diphenyl/95% dimethyl polysiloxane)	HRMS
105	A	2601-OL	Splitless	1	DB5MS	MS/MS
106	A	2601-OL	MMI	5	5% fenil-metilpolisiloxane	MS/MS
107	A	2601-OL	Splitless	1	(5% Phenyl)-methyl polysiloxane	HRMS
108	A	2601-OL	Splitless	2	Rxi 5Sii MS	HRMS, MS/MS
109	A	2601-OL	Splitless	2		HRMS
Additional Sets						
78	B	2601-OL	PTV	1	ZB5MS	HRMS

LC	Data set	Sample	Detection			
			GC injection	Injected volume [µl]	GC separation: Stationary phase	Detector
1	A	2601-OL	for noPCBs PTV and for the moPCB splitless , PTV, Splitless	100	Fused silica capillair column length 60 m; diameter 0,25 mm, filmthickness 0,25 µm, coating DB 5MS	HRMS
2		2601-OL				
3	A	2601-OL	PTV	2	DB5-MS (5%-phenyl)-methylpolysiloxane), HT8	HRMS
4		2601-OL				
5	A	2601-OL	Splitless			MS/MS
6	A	2601-OL	PTV	2.5	5% Diphenyl / 95% Dimethylpolysiloxan	MS/MS
7	A	2601-OL	Splitless	1	HT8-PCB 60m x 0,25mm	HRMS
8	A	2601-OL	Splitless	1.5	Thermo TR-Dioxin (5% diphenyl - 95% polysilphenylene siloxane)	HRMS
9		2601-OL				
10	A	2601-OL	Splitless	3		MS/MS
11	A	2601-OL	PTV	1	DB-XLB	HRMS
12	A	2601-OL	Splitless	5	(5%-phenyl)-methylpolysiloxane	MS/MS
13		2601-OL				
14	A	2601-OL	Splitless	3	DB-5msUI	HRMS
15		2601-OL				
16	A	2601-OL	Splitless	2	Zebron ZB-dioxin	MS/MS
17	A	2601-OL	Splitless	1		MS/MS
18	A	2601-OL	Splitless	2	HT8PCB	HRMS
19		2601-OL				
20	A	2601-OL	Splitless	1.5		HRMS
21	A	2601-OL	Splitless	2	% 5 phenyl, % 95 polydimethyl siloxane	MS/MS
22	A	2601-OL	Splitless	2	RTX-PCB 40m	HRMS
23		2601-OL				
24	A	2601-OL	PTV, Splitless	2	Rtx-Dioxin2, DB-5Q	HRMS
25		2601-OL				
26	A	2601-OL	PTV	1	NO-PCB-DL : 5% Polysilarylene - 95% Polydimethylsyloxane (Zebron-dioxins) MO-PCB-DL : low polarity si-arylene column (Zebron-XLB)	HRMS
27	A	2601-OL	PTV	1	DB-5MS	HRMS
28	A	2601-OL	PTV	2		MS/MS
29		2601-OL				
30		2601-OL				
31		2601-OL				
32		2601-OL				
33		2601-OL				
34		2601-OL				
35	A	2601-OL	PTV	5	db	HRMS
36		2601-OL				
37	A	2601-OL	Splitless	1	DB5-MS	HRMS
38	A	2601-OL	Splitless	1.0	HT8-PCB	HRMS
39	A	2601-OL	Splitless	1	8% Phenylpolycarborane-siloxane 60m*0.25 mm*0.25 um	HRMS
40	A	2601-OL	Splitless	2	DB5MS 30x0.25x0.25	MS/MS
41		2601-OL				
42	A	2601-OL	PTV	2	DB-5MS UI	MS/MS
43	A	2601-OL	Split	1	HT8	MS/MS
44	A	2601-OL	Splitless	1	DB-5MS	HRMS
45		2601-OL				
46		2601-OL				
47	A	2601-OL	Splitless	1	DB-5MS	HRMS
48		2601-OL				
49		2601-OL				
50	A	2601-OL	Splitless	1	HT-8	MS/MS
51	A	2601-OL	Splitless	1	DB-5MS	HRMS
52	A	2601-OL	PTV	6	RTX- Dioxin 2 & Trajan HT8	HRMS
53		2601-OL				
54		2601-OL				
55		2601-OL				
56	A	2601-OL	PTV	2	TR-Dioxin-5ms 60 m Thermo	HRMS
57	A	2601-OL	Splitless	1.5	DB-XLB, DB-5ms	HRMS
58		2601-OL				
59	A	2601-OL	PTV (non-ortho-PCB) and Splitless (mono-ortho-PCB) , PTV, Splitless	1	Rtx-Dioxin2 (non-ortho-PCBs) and SGE-HT8-PCB (mono-ortho-PCB)	HRMS
60	A	2601-OL	Splitless	2	RTX-5MS , HT8-PCB	HRMS
61		2601-OL				
62	A	2601-OL	Splitless	1	Rxi 5SIL MS	MS/MS
63	A	2601-OL	Splitless	2	HT-8 25m	HRMS
64		2601-OL				
65		2601-OL				
66		2601-OL				

LC	Data set	Sample	Detection			
			GC injection	Injected volume [µl]	GC separation: Stationary phase	Detector
67	A	2601-OL	Splitless	1	DB 5-MS	HRMS
68	A	2601-OL	PTV, Splitless	5	DB-5MS non-ortho, HT8-PCB mono-ortho	HRMS
69	A	2601-OL	PTV	0	DB-5MS-UI	HRMS
70	A	2601-OL	Splitless	1	DB-5ms(60m×0.25mm×0.25µm)	HRMS
71		2601-OL				
72		2601-OL				
73	A	2601-OL	Splitless	1	DB-5	MS/MS
74	A	2601-OL	PTV	3	HT-8	HRMS
75	A	2601-OL	Splitless	1.5	DB-5MS	HRMS
76	A	2601-OL	PTV	2	60m DB-5 MS, 0,25mm, 0,25µm	HRMS
77		2601-OL				
78	A	2601-OL	PTV	1	ZB5MS	HRMS
79	A	2601-OL	Splitless	1	TR-PCB 8 MS	HRMS
80		2601-OL				
81	A	2601-OL	Splitless	2	DB-5MS	HRMS
82		2601-OL				
83	A	2601-OL	PTV	5	DB5MS 60 m	HRMS
84		2601-OL				
85		2601-OL				
86	A	2601-OL	PTV	5	DB-Dioxin, HT-8	HRMS
87		2601-OL				
88		2601-OL				
89		2601-OL				
90	A	2601-OL	Splitless	2	TraceGOLD TG-Dioxin	HRMS, MS/MS
91		2601-OL				
92	A	2601-OL	Splitless	2	DB-XLB	HRMS
93	A	2601-OL	Splitless	1		HRMS
94		2601-OL				
95	A	2601-OL	Splitless	1.5	db-xlb 30 * 0,18 * 0,18	HRMS
96	A	2601-OL	Splitless	1.5	Guard column (5 m), SGE BPX-PCB polycarb-siloxane GC capillary (10 m), 2 m DB-17	LRMS
97		2601-OL				
98	A	2601-OL	Splitless	1		HRMS
99	A	2601-OL	PTV	3	DB-5MS 60 m × 0,25 mm i.d., 0,10 µm	HRMS
100	A	2601-OL	PTV	7	DB-5ms	HRMS
101		2601-OL				
102		2601-OL				
103		2601-OL				
104	A	2601-OL	Splitless	2	Rxi-5SIL MS (5% diphenyl/95% dimethyl polysiloxane) (non-ortho PCBs), DB-XLB (mono-ortho PCBs)	HRMS, MS/MS
105	A	2601-OL	Splitless	1	DB5MS	MS/MS
106	A	2601-OL	MMI	1	5% fenil-metilpolisiloxane	MS/MS
107	A	2601-OL	Splitless	1		HRMS
108	A	2601-OL	Splitless	2	Rxi 5Sil MS	HRMS, MS/MS
109	A	2601-OL	Splitless	2		HRMS
Additional sets						
78	B	2601-OL	PTV	1	ZB5MS	HRMS

LC	Data set	Sample	Detection			Detector
			GC injection	Injected volume [µl]	GC separation: Stationary phase	
1	A	2601-OL	Splitless	2	Fused silica capillair column length 60 m; diameter 0,25 mm, filmthickness 0,25 µm, coating DB 5MS	HRMS
2		2601-OL				
3	A	2601-OL	PTV	2	DB5-MS (5%-phenyl)-methylpolysiloxane) , HT8	HRMS
4	A	2601-OL	Splitless	2	SGE HT-8, 50 m, 0.22 mm, 0.25 µm	MS/MS
5	A	2601-OL	Splitless			MS/MS
6	A	2601-OL	PTV	1	5% Diphenyl / 95% Dimethylpolysiloxan	MS/MS
7	A	2601-OL	Splitless	1	HT8-PCB 60m x 0,25mm	HRMS
8		2601-OL				
9	A	2601-OL	PTV, Splitless	1	DB5MS UI	MS/MS
10	A	2601-OL	Splitless	3		MS/MS
11	A	2601-OL	PTV	1	DB-XLB	HRMS
12	A	2601-OL	Splitless	5	(5%-phenyl)-methylpolysiloxane	MS/MS
13		2601-OL				
14	A	2601-OL	Splitless	3	DB-5msUI	HRMS
15		2601-OL				
16	A	2601-OL	Splitless	1	Zebron ZB-dioxin	MS/MS
17	A	2601-OL	Splitless	1		MS/MS
18	A	2601-OL	Splitless	2	HT8PCB	HRMS
19		2601-OL				
20	A	2601-OL	Splitless	1		MS/MS
21	A	2601-OL	Splitless	2	% 5 phenyl, % 95 polydimethyl siloxane	MS/MS
22	A	2601-OL	Splitless	2	RTX-PCB 40m	HRMS
23	A	2601-OL	Splitless	2	HT8-PCB	MS/MS
24	A	2601-OL	Splitless	2	Rtx-Dioxin2, DB-5Q	HRMS
25		2601-OL				
26	A	2601-OL	PTV	1	low polarity si-arylene column (Zebron-XLB)	HRMS
27	A	2601-OL	PTV	1		HRMS
28	A	2601-OL	PTV	2		HRMS, MS/MS
29	A	2601-OL	PTV, Splitless	1	HP5-MS UI, 30m x 0,250mm x 0,25µm	MS/MS
30	A	2601-OL	Splitless	2	DB-XLB	MS/MS
31	A	2601-OL	Splitless	1	Restek Rxi-XLB	MS/MS
32		2601-OL				
33		2601-OL				
34	A	2601-OL	Splitless	1	DB-xlb	MS/MS
35	A	2601-OL	PTV	2	db5	HRMS
36	A	2601-OL	Splitless	1	HP 5 MS UI	LRMS
37	A	2601-OL	Splitless	1	DB5-MS	HRMS
38	A	2601-OL	Splitless	1.0	HT8-PCB	HRMS
39	A	2601-OL	Splitless	1	8% Phenylpolycarborane-siloxane 60m*0.25 mm*0.25 um	HRMS
40	A	2601-OL	Splitless	2	DB5MS 30x0.25x0.25, DB17 30x0.25x0.25	MS/MS
41	A	2601-OL	Split/Splitless	1	5 % diphenyl 95 % dimethylsiloxane (30m, 0,25 mm, 0,25 um)	ECD
42	A	2601-OL	PTV	2	DB-5MS UI	MS/MS
43		2601-OL				
44	A	2601-OL	Splitless	1	HT-8	MS/MS, ECD
45	A	2601-OL	PTV, Splitless	1	HP-5-MS	MS/MS
46	A	2601-OL	Splitless	2	TR-PCB-8MS	MS/MS
47	A	2601-OL	Splitless	1	DB-XLB	HRMS
48	A	2601-OL	Splitless	1	DB-XLB 60mx0.25mmx0.25um	MS/MS
49	A	2601-OL	Splitless	2	crosslinked 5% PH ME Siloxane	ECD
50	A	2601-OL	Splitless	1	HT-8	MS/MS
51	A	2601-OL	PTV	2	RTX-5MS	MS/MS
52	A	2601-OL	Splitless	2	RTX- Dioxin 2	HRMS
53		2601-OL				
54	A	2601-OL	Splitless	2	HT8 - 8% phényl-polysiloxilane-carborane	MS/MS
55	A	2601-OL				
56	A	2601-OL	PTV	2	TR-Dioxin-5ms 60 m Thermo	HRMS
57	A	2601-OL	Splitless	0.5	DB-XLB	HRMS
58	A	2601-OL	Splitless	1.0	HT8 SGE	MS/MS
59	A	2601-OL	Splitless	1	SGE-HT8-PCB	HRMS
60	A	2601-OL	Splitless	2	RTX-5MS , HT8-PCB	HRMS
61	A	2601-OL	Splitless	2	DB-XLB	MS/MS
62	A	2601-OL	Splitless	1	Rxi 5SIL MS	MS/MS
63	A	2601-OL	Splitless	2		HRMS
64	A	2601-OL	PTV	1	TG-5 SilMS (5% phenyl methylpolysiloxane)	MS/MS
65	A	2601-OL	- , PTV	1	RXI-XLB (Restek)	MS/MS
66		2601-OL				

LC	Data set	Sample		Detection			Detector
				GC injection	Injected volume [μl]	GC separation: Stationary phase	
67	A	2601-OL		Splitless	1	DB 5-MS	HRMS
68	A	2601-OL		Splitless	1	HT8-PCB	HRMS
69	A	2601-OL		PTV	1	DB-5MS-UI	HRMS
70	A	2601-OL		Splitless	1	DB-5ms(60m×0.25mm×0.25μm)	HRMS
71	A	2601-OL		Splitless	10		MS/MS
72	A	2601-OL		Splitless	2	HT8 PCB 60m DI 0.25	MS/MS
73	A	2601-OL		Splitless	1		MS/MS
74	A	2601-OL		PTV	3	HT-8	HRMS
75	A	2601-OL		Splitless	1.5		HRMS
76	A	2601-OL		PTV	2	60m DB-5 MS, 0,25mm, 0,25μm	HRMS
77	A	2601-OL		PTV	5		MS/MS
78		2601-OL					
79	A	2601-OL		Splitless	1	TR-PCB 8 MS	HRMS
80	A	2601-OL		Splitless	1	HT8	MS/MS
81	A	2601-OL		Splitless	2	HT8-PCB	HRMS
82		2601-OL					
83	A	2601-OL		Splitless	1	Hi8 50 m	HRMS
84		2601-OL					
85		2601-OL					
86	A	2601-OL		PTV	5	HT-8	HRMS
87		2601-OL					
88		2601-OL					
89	A	2601-OL		PTV	1	5% phenyl, 95% dimethylpolysiloxane	MS/MS
90		2601-OL					
91		2601-OL					
92	A	2601-OL		Splitless	2	DB-XLB	HRMS
93	A	2601-OL		Splitless	1		HRMS
94		2601-OL					
95	A	2601-OL		Splitless	1.5	db-xlb 30 * 0,18 * 0,18	HRMS
96	A	2601-OL		Splitless	1.5	Guard column fused silica, SGE BPX-PCB Polycarborane-Siloxane GC Capillary 10 m, DB-17 ms 2.0 m secondary capillary	LRMS
97		2601-OL					
98	A	2601-OL		Splitless	1		HRMS
99	A	2601-OL	PTV	3	DB-5MS 60 m × 0,25 mm i.d., 0,10 μm	HRMS	
100	A	2601-OL	PTV	7	DB-5ms	HRMS	
101		2601-OL					
102	A	2601-OL	/ , PTV	8	HP-5MS	MS/MS	
103	A	2601-OL	Splitless	1	DB-1701	ECD	
104	A	2601-OL	Splitless	1	DB-XLB	MS/MS	
105	A	2601-OL	Splitless	1	DB5MS	MS/MS	
106	A	2601-OL	MMI	1	5% fenil-metilpolisiloxane	MS/MS	
107		2601-OL					
108		2601-OL					
109	A	2601-OL	Splitless	2		HRMS	
Additional sets							
81	B	2601-OL	Splitless	2	HT8-PCB	HRMS	

LC	Data set	Sample	Method validated according to EU Regulation	Name, type and provider of cell line	Sample replicates on microtiter plate	Type of calibrators	Type of calibration function	Curve fitting method	Type of recovery reference	Matrix of recovery reference sample(s)	Level(s) of recovery reference sample(s)		DL-PCB	Procedure blank correction	Recovery correction
1	A	2601-OL	yes	rat H4IIE (Wageningen University, now BDS)	triplicates	reference sample	exponential 3-parameter fit	F-statistic	reference samples (GC/HRMS confirmed)	frying fat	0.23; 0.35; 0.64; 1.55; 2.99 and 6.09 pg TEQ/g			no	no
2		2601-OL													
3	A	2601-OL	yes	H1L6.1c3, mouse hepatoma, XDS Inc.	duplicates	TCDD, PCB126	4-PL	SSR	GC/HRMS confirmed	corn oil	2,06	0,86	1,20	yes	yes
4		2601-OL													
5		2601-OL													
6		2601-OL													
7		2601-OL													
8		2601-OL													
9		2601-OL													
10		2601-OL													
11		2601-OL													
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13		2601-OL													
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35		2601-OL													
36		2601-OL													
37		2601-OL													
38		2601-OL													
39		2601-OL													
40		2601-OL													
41		2601-OL													
42		2601-OL													
43	A	2601-OL	yes	Snixoid	duplicates	TCDD and PCB126			Spiked and confirmed	vegetal oil		1.25	1	no	yes
44		2601-OL													
45		2601-OL													
46		2601-OL													
47		2601-OL													
48		2601-OL													
49	A	2601-OL	yes	rat liver H4IIE, Biodetection Systems	triplicates	TCDD			certified	fish oil				yes	yes
50		2601-OL													
51		2601-OL													
52		2601-OL													
53		2601-OL													
54		2601-OL													
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63		2601-OL													
64		2601-OL													
65		2601-OL													
66		2601-OL													

EURL Proficiency Study on the Determination of PCDD/Fs, PCBs, PBDEs and HBCDDs in Olive Oil 2026 [EURL-PT-DPB_2601-OL]
EURL for halogenated Persistent Organic Pollutants (POPs) in Feed and Food

Olive oil (2601-OL)
Bioanalytical screening methods PCDD/Fs and DL-PCBs - Cell bioassay

LC	Data set	Sample		Method validated according to EU Regulation	Name, type and provider of cell line	Sample replicates on microtiter plate	Type of calibrators	Type of calibration function	Curve fitting method	Type of recovery reference	Matrix of recovery reference sample(s)	Level(s) of recovery reference sample(s) PCDD/F + DL-PCBPCDD/F		DL-PCB	Procedure blank correction	Recovery correction
67		2601-OL														
68		2601-OL														
69		2601-OL														
70		2601-OL														
71		2601-OL														
72		2601-OL														
73		2601-OL														
74		2601-OL														
75		2601-OL														
76		2601-OL														
77		2601-OL														
78		2601-OL														
79		2601-OL														
80		2601-OL														
81		2601-OL														
82	A	2601-OL		yes	H4IIE, rat hepatome wild type, from Helmholtz-Zentrum Neuherberg/Germany	triplicates	TCDD	S-curve, 4-parameter-fit	SSR	Oil from PT	Rapeseed oil	0,73	0,36	0,37	yes	yes
83		2601-OL														
84		2601-OL														
85		2601-OL														
86		2601-OL														
87		2601-OL														
88		2601-OL														
89		2601-OL														
90		2601-OL														
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96		2601-OL														
97		2601-OL														
98		2601-OL														
99		2601-OL														
100		2601-OL														
101		2601-OL														
102		2601-OL														
103		2601-OL														
104		2601-OL														
105		2601-OL														
106	A	2601-OL		no	BDS	triplicates	TCDD	curve model	SSR	natural incurred reference sample	animal fat	54,92			yes	yes
107		2601-OL														
108		2601-OL														
109		2601-OL														
Additional sets																
82	B	2601-OL		yes	H4IIE, rat hepatome wild type, from Helmholtz-Zentrum Neuherberg/Germany	triplicates	TCDD	S-curve, 4-parameter-fit	SSR	Oil from PT	Rapeseed oil	0,73	0,36	0,37	no	no

LC	Data set	Sample	Bioassay cut-off value(s) calculated from matrix-matched calibration experiments (spiking) during initial validation	multiple analysis (n>6) of a sample contaminated at the GC-HRMS decision limit	multiple analysis (n>6) of a sample contaminated at 2/3 level of interest	matrix-matched calibration experiments (confirmed samples) during re-evaluation	Other approach
1	A	2601-OL	no	no	no	yes	Using AL of PCDD/Fs or DL-PCBs
2		2601-OL					
3	A	2601-OL	yes	yes	no	no	
4		2601-OL					
5		2601-OL					
6		2601-OL					
7		2601-OL					
8		2601-OL					
9		2601-OL					
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12		2601-OL					
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35		2601-OL					
36		2601-OL					
37		2601-OL					
38		2601-OL					
39		2601-OL					
40		2601-OL					
41		2601-OL					
42		2601-OL					
43	A	2601-OL	yes	no	no	no	
44		2601-OL					
45		2601-OL					
46		2601-OL					
47		2601-OL					
48		2601-OL					
49	A	2601-OL	no	no	no	no	
50		2601-OL					
51		2601-OL					
52		2601-OL					
53		2601-OL					
54		2601-OL					
55		2601-OL					
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60		2601-OL					
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63		2601-OL					
64		2601-OL					
65		2601-OL					
66		2601-OL					

Olive oil (2601-OL)
Bioanalytical screening methods PCDD/Fs and DL-PCBs - Bioassay cut-off

LC	Data set	Sample	Bioassay cut-off value(s) calculated from matrix-matched calibration experiments (spiking) during initial validation	multiple analysis (n>6) of a sample contaminated at the GC-HRMS decision limit	multiple analysis (n>6) of a sample contaminated at 2/3 level of interest	matrix-matched calibration experiments (confirmed samples) during re-evaluation	Other approach
67		2601-OL					
68		2601-OL					
69		2601-OL					
70		2601-OL					
71		2601-OL					
72		2601-OL					
73		2601-OL					
74		2601-OL					
75		2601-OL					
76		2601-OL					
77		2601-OL					
78		2601-OL					
79		2601-OL					
80		2601-OL					
81		2601-OL					
82	A	2601-OL	no	no	no	no	2/3 of ML
83		2601-OL					
84		2601-OL					
85		2601-OL					
86		2601-OL					
87		2601-OL					
88		2601-OL					
89		2601-OL					
90		2601-OL					
91		2601-OL					
92		2601-OL					
93		2601-OL					
94		2601-OL					
95		2601-OL					
96		2601-OL					
97		2601-OL					
98		2601-OL					
99		2601-OL					
100		2601-OL					
101		2601-OL					
102		2601-OL					
103		2601-OL					
104		2601-OL					
105		2601-OL					
106	A	2601-OL	no	no	no	no	
107		2601-OL					
108		2601-OL					
109		2601-OL					
Additional sets							
82	B	2601-OL	no	no	no	no	2/3 of ML