QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis

Biota

REFERENCE MATERIAL

Biota sample 366

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis Biota 366

General Information

In this report an overview is given of analytical data for this sample collected in our proficiency testing program. The consensus values are calculated using a robust statistical model. With this NDA model mean and standard deviation are calculated using all reported data when at least 4 results are left after removal of reported 'lower than' (<) and 0 (= zero) values. No outliers are removed.

This report is divided into two sections: Consensus Values and Indicative Values. The division is made on the reliability of the data. Consensus Values are based on at least 10 results while the relative uncertainty is smaller than 6.25%. Indicative Values are based on a relative uncertainty of maximum 35% with at least 4 and less than 10 results or a relative uncertainty higher than 6.25%.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation) and the uncertainty in the assigned value. The confidence limits (at 95 % probabilty) are calculated for these determinands.

The results of each determinand is expressed on a wet weight basis.

Sample information

QUASIMEME reference materials cover a range of natural Biota species from contaminated waters from the North Sea and/or Mediterranean. The supplied wet test materials are homogenised and sterilised by autoclaving.

This Biota sample 366 of Pike-Perch from Fishfarm, Poland is prepared for the QUASIMEME proficiency programs. The results on which the values in this report are based were taken from the periods given in the following table.

Year.Round	Program	Sample Round Id
2021.2	BT1	QTM133BT

Consensus Values BT1

Method: Metals - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Arsenic	mg/kg	0.135	0.0128	9.5	17	0.136	0.0082	0.0039	0.128 - 0.141
Cadmium	µg/kg	1.17	0.135	11.5	11	1.21	0.104	0.051	1.08 - 1.26
Copper	µg/kg	247	36.2	14.6	17	247	26.7	11.0	229 - 266
Iron	mg/kg	3.40	0.437	12.9	18	3.52	0.330	0.129	3.18 - 3.62
Mercury	µg/kg	61.6	7.74	12.6	30	62.2	5.47	1.77	58.7 - 64.5
Selenium	µg/kg	194	13.5	7.0	12	196	9.4	4.9	186 - 203
Zinc	mg/kg	6.24	0.626	10.0	21	6.30	0.430	0.171	5.95 - 6.52

Method: Weight - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Dry-weight	%	21.0	0.25	1.2	13	21.0	0.19	0.09	20.88 - 21.19

Indicative Values BT1

Method: Metals - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Aluminium	mg/kg	0.517	0.3232	62.6	9	0.530	0.2260	0.1347	0.273 - 0.760
Calcium	mg/kg	183	35.1	19.2	4	190	20.4	21.9	134 - 232
Chromium	µg/kg	49.8	23.24	46.6	16	51.6	17.05	7.26	37.5 - 62.2
Cobalt	µg/kg	3.76	0.979	26.1	8	3.47	0.750	0.433	2.96 - 4.55
Lead	µg/kg	5.32	1.892	35.6	14	5.50	1.300	0.632	4.23 - 6.40
Lithium	µg/kg	7.19	1.675	23.3	4	7.78	1.260	1.047	4.86 - 9.51
Magnesium	mg/kg	251	17.2	6.8	8	253	11.4	7.6	237 - 265
Manganese	µg/kg	171	32.6	19.0	11	176	21.9	12.3	150 - 193
Nickel	µg/kg	21.0	9.15	43.5	12	21.8	5.90	3.30	15.3 - 26.8
Phosphorus	mg/kg	2090	29	1.4	5	2100	24	16	2055 - 2121
Potassium	mg/kg	3260	47	1.4	6	3240	38	24	3215 - 3308
Sodium	mg/kg	494	39.4	8.0	6	497	26.4	20.1	455 - 533
Thallium	µg/kg	1.84	0.362	19.7	4	1.98	0.275	0.226	1.33 - 2.34
Tin	µg/kg	55.8	16.73	30.0	7	57.1	12.06	7.90	40.9 - 70.8

Method: Lipids - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Total-Lipid	%	1.67	0.268	16.1	6	1.56	0.185	0.137	1.40 - 1.94