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ICP Forests

International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP-Forests)

Technical Report QA-RFoliar16

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

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TABLE OF CONTENTS

1 INTRODUCTION

A high quality and comparable laboratory standard in all countries is indispensable for a European-wide survey of the state of forests, small changes in nature should be detected and not the changes in laboratory quality. Important steps on this way are method harmonisation, QA/QC in the laboratories in daily routine and an implementation of a regular performed Interlaboratory Comparison Tests programme.

This Needle/Leaf Interlaboratory Comparison Test programme starts with the first European Foliar-Interlaboratory Comparison Test on two certified standards (BCR 100-*beech leaves* and BCR 101 - *spruce needles*) in 1993. The data were submitted by post or fax and had to be rechecked from the laboratories. All the data collection and evaluation must be done manually. The final report was available after some month. The Interlaboratory Comparison Tests were performed biannually till 2002.

Beginning with 2003/2004 (6th Interlaboratory Comparison Test) an annual test program was set up and the test were performed from the Forest Foliar Co-ordinating Centre/Austria (FFCC). The data collection was done via internet. The Needle/Leaf Interlaboratory Comparison Test program was opened for every interested laboratory.

Beginning in 2012 an internet based web interface was used for the data collection, to collect the billing information for the participation fee, for the data evaluation and for the creation of online qualification reports. The interface offers the possibility for first data checks (decimal errors, non plausible results, max LOQ) immediately before the final evaluation. The results of the ringtest are available now within some days, so the laboratories can react - in case of unsatisfactory results – very fast. For this case a re-qualification procedure was set up, starting with the 11th Test in 2009 (see: http://bfw.ac.at/rz/bfwcms2.web?dok=7830). This feedback procedure is mandatory for all *ICP-Forests laboratories* and showed very a positive effect on the data quality.

To support the participating laboratories and to exchange knowledge between them regularly meetings of the heads of the laboratories are organized from the ICP-Forests Working Group on quality assurance and quality control in laboratories. Leaf and needle reference materials for method validation and method verification are offered by FFCC (see: http://bfw.ac.at/rz/bfwcms2.web?dok=5146).

Today this interlaboratory test program is open for every laboratory and is financed by participation fee, by advertising, by selling reference materials and by ringtest sample collection and/or sample preparation from participating laboratories.

2 TASK, MATERIAL, PARTICIPANTS AND EVALUATION

2.1 Task

The Forest Foliar Co-ordinating Centre established the following timetable:

- Informing the participating labs (March 2015)
- Registration of 53 participants via internet (6th July 2015)
- Submission of the ring test samples (July 2015)
- Submission of the results from the labs (October-December 2015)
- Deadline of data input (1st January 2016)
- Evaluation according to DIN 38402/42 (January/February 2016)
- Submission of the final report and the online qualification reports (February 2016)
- Re-qualification process finished (1st August 2016)

The mandatory parameters S, N, P, Ca, Mg, K and C must be analysed from all *ICP-Forests laboratories*, optional parameters Zn, Mn, Fe, Cu, Pb, Cd and B can be analysed. A lot results for of other elements can be submitted. The units and all possible elements are shown in figure 1.

Figure 1: Elements and units

I a	II a	III b	IV b	V b	VI b	VII b	VIII b			I b	II b	III a	IV a	V a	VI a	VII a	VIII a
1 H																	2 He
3 Li µg/g	4 Be µg/g											5 B µg/g	6 C %	7 N mg/g	8 O	9 F µg/g	10 Ne
11 Na µg/g	12 Mg mg/g											13 Al µg/g	14 Si µg/g	15 P mg/g	16 S mg/g	17 Cl µg/g	18 Ar
19 K mg/g	20 Ca mg/g	21 Sc ng/g	22 Ti µg/g	23 V µg/g	24 Cr µg/g	25 Mn µg/g	26 Fe µg/g	27 Co µg/g	28 Ni µg/g	29 Cu µg/g	30 Zn µg/g	31 Ga µg/g	32 Ge µg/g	33 As ng/g	34 Se ng/g	35 Br µg/g	36 Kr
37 Rb µg/g	38 Sr µg/g	39 Y ng/g	40 Zr µg/g	41 Nb ng/g	42 Mo ng/g	43 Tc	44 Ru ng/g	45 Rh ng/g	46 Pd ng/g	47 Ag ng/g	48 Cd ng/g	49 In ng/g	50 Sn µg/g	51 Sb ng/g	52 Te µg/g	53 I µg/g	54 Xe
55 Cs ng/g	56 Ba µg/g	71 Lu ng/g	72 Hf ng/g	73 Ta ng/g	74 W ng/g	75 Re ng/g	76 Os ng/g	77 Ir ng/g	78 Pt ng/g	79 Au ng/g	80 Hg ng/g	81 Tl ng/g	82 Pb µg/g	83 Bi ng/g	84 Po	85 At	86 Rn

57 La ng/g	58 Ce ng/g	59 Pr ng/g	60 Nd ng/g	61 Pm ng/g	62 Sm ng/g	63 Eu ng/g	64 Gd ng/g	65 Tb ng/g	66 Dy ng/g	67 Ho ng/g	68 Er ng/g	69 Tm ng/g	70 Yb ng/g

	Mandatory (for ICP-Forests labs)		Optional (for ICP-Forests labs)		Additional (with special interest for more labs)		Possible

For each element four replicates per sample are necessary. Minimum sample weight for mandatory and optional elements should be per replicate 250 mg, because of the homogeneity of the sample material. All results must be calculated on dry weight (105°C).
The used pretreatment method and the determination method must be specified by a code. This code was harmonized for all ringtests (foliage & litterfall, deposition & soil solution and soil) after the 4th Meeting of the Heads of the Laboratories in Zadar 2013.

For a deeper evaluation - all participant laboratories had to fill a questionnaire to get more information about the status of their quality control systems, about their instrumentation, about their sample number/year and about their methodical knowledge. *ICP-Forests laboratories* had to mark all parameters if the plan to analyse and submit monitoring results to ICP-FORESTS PCC from the growing season 2015.

2.2 Material

In July 2015 the Austrian Federal Research Centre for Forests, Natural Hazards and Landscape (BFW) sent out four dried and powdered plant samples to 53 laboratories in 25 countries.

The samples consisted of:

1. Beech Leaves - *Fagus sylvatica* (Austria)
2. Pine branches - *Litterfall* (Finland) - same sample like in the 11th Test (Sample 1) and 14th Test (Sample 3)
3. Spruce needles (Germany) - same sample like in the 9th Test (Sample 1)
4. Spruce Needles (France)

Sample 1 was collected from Reinhard Hagen and his employees in Lower Austria. **Sample 2** was collected from John Derome in Finland. **Sample 3** was collected from Günther Kießling in Germany and **Sample 4** was collected from Mireille Barbaste in France. Special thank to all colleagues for collecting and preparing samples for this ringtest.

The further sample preparation (drying and grinding) – if necessary - was done in the BFW laboratory for air pollution monitoring and plant analyses. Before the samples were sent out they were once more homogenized and filled in PE-bags. Homogeneity was tested for these samples by analysing the P, K, Ca, Mg, Fe, Mn, Zn, Cu and B content in eight randomly selected sub samples. No significant variation (Kruskal-Wallis Test - 95% significance level) could be found between the results of these eight sub samples, and they were therefore considered to be homogeneous.

2.3 Participants

Table 1 shows the number of countries and laboratories taking part in the interlaboratory comparison test program.

Table 1: Number of countries and laboratories taking part in the interlaboratory comparison test program

Interlaboratory Comparison Test	Year	Number of countries	Number of laboratories
1st	1993/94	21	24
2nd	1995/96	25	39
3rd	1997/98	29	51
4th	1999/00	29	52
5th	2001/02	29	53
6th	2003/04	26	46
7th	2004/05	23	43
8th	2005/06	30	52
9th	2006/07	28	53
10th	2007/08	29	54
11th	2008/09	28	56
12th	2009/10	30	56
13th	2010/11	29	60
14th	2011/12	28	62
15th	2012/13	28	61
16th	2013/14	25	57
17th	2014/15	25	54
18th	2015/16	25	53

Seven of the participating laboratories don't send any results till end of the deadline (A47, A84, A85, A86, A87, F06 and F11). With a few exceptions, all other laboratories analysed in the 18th Interlaboratory Comparison Test the complete list of mandatory elements and most of the optional elements (s. Table 2).

Table 2: Analysed elements from the participant laboratories (green); no results were submit (grey); red "X": monitoring samples will be analyzed from the growing season 2015 and these results will be sent to PCC in 2016 ("*ICP-Forests laboratory"*)

Labcode	N	S	P	Ca	Mg	K	C	Zn	Mn	Fe	Cu	Pb	Cd	B
A36														
A37														
A39														
A42														
A43														
A45	X	X	X	X	X	X	X	X	X	X	X	X	X	
A47														
A49	X	X	X	X	X	X	X							
A51														

Labcode	N	S	P	Ca	Mg	K	C	Zn	Mn	Fe	Cu	Pb	Cd	B
A53														
A55														
A56														
A57														
A58	X	X	X	X	X	X	X	X	X	X	X		X	
A59	X	X	X	X	X	X	X	X	X	X	X			X
A60		X	X	X	X	X	X	X	X	X				
A61	X	X	X	X	X	X	X	X	X	X	X		X	
A62	X	X	X	X	X	X	X	X	X	X				
A65														
A79														
A80														
A82														
A84														
A85														
A86														
A87														
A89														
F01	X		X	X	X	X								
F02	X	X	X	X	X	X	X	X	X	X				
F03														
F05	X	X	X	X	X	X	X	X	X	X		X		
F06														
F07	X	X	X	X	X	X	X	X	X	X	X	X	X	X
F08	X	X	X	X	X	X	X	X	X	X	X	X	X	X
F09														
F11														
F12	X	X	X	X	X	X	X	X	X	X	X	X	X	
F13	X	X	X	X	X	X	X	X	X	X	X	X	X	
F14	X	X	X	X	X	X	X	X	X	X	X	X	X	X
F15	X	X	X	X	X	X	X	X	X	X	X	X	X	
F16	X	X	X	X		X	X	X	X	X	X	X	X	X
F18	X	X	X	X	X	X	X	X	X	X	X	X	X	X
F19	X	X	X	X	X	X	X	X	X	X	X			
F20		X	X	X	X	X		X	X	X	X			X
F21														
F22														
F24	X	X	X	X	X	X	X							
F25														
F26	X			X	X	X	X							
F27	X	X	X	X	X	X	X							
F32	X	X	X	X	X	X	X			X	X	X	X	
F33	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S18														

2.4 Data Evaluation

Only four replicates above the quantification limits can be used for calculating the an outlier free laboratory mean value. Results below the quantification limit are marked with "<" followed by the quantification limit of the laboratory (e.g. <0.1).

The results of the interlaboratory comparison test were evaluated according to DIN 38402/42. This method identifies three types of outliers. With the Grubbs-test the four replicates from each laboratory can first be checked for outliers (outlier type 1). The next step is to compare the recalculated mean values of each lab with the mean value from all labs as well as with the Grubb-test for outliers (type 2). Finally, the recalculated standard deviation from the laboratories must be compared with the total standard deviation (F-test) to eliminate laboratories with an excessive standard deviation (outlier type 3). Now the outlier free total mean value and the outlier free maximum and minimum mean value of all labs can be calculated. Marked outliers type 1 between the outlier free maximum and minimum mean values are not longer outliers, they will be included and will be used for the further evaluation of the interlaboratory comparison test. The last step is to calculate the outlier free statistical values.

With the outlier free mean value for each element/sample and the laboratory mean value the recovery must be calculated and compare with the tolerable limits from table 3. Laboratory results inside these tolerable limits are marked green (pass the test); outside they are marked orange (fail the test). This type of evaluation was fixed in the Foliar Expert Panel Meetings of As (1994) and Vienna (1997).

Table 3: Tolerable limits for normal concentration in foliage for the mandatory and optional elements

Element	Tolerable deviation from mean in %	Adopted by the Expert Panel Foliage and Litterfall
N	90-110	6th Meeting - Bonn 1999
S	85-115	10th Meeting - Madrid 2007
P	90-110	10th Meeting - Madrid 2007
Ca	90-110	10th Meeting - Madrid 2007
Mg	90-110	10th Meeting - Madrid 2007
K	90-110	10th Meeting - Madrid 2007
C	95-105	6th Meeting - Bonn 1999
Zn	85-115	8th Meeting - Prague 2003
Mn	85-115	8th Meeting - Prague 2003
Fe	80-120	6th Meeting - Bonn 1999
Cu	80-120	8th Meeting - Prague 2003
Pb	70-130	6th Meeting - Bonn 1999
Cd	70-130	6th Meeting - Bonn 1999
B	80-120	6th Meeting - Bonn 1999

Table 4: Tolerable limits for the mandatory and optional elements for samples with low concentrations (e.g. for non-foliage litterfall) the limits were fixed in Hamburg 2009 (11th Meeting of the Expert Panel Foliage and Litterfall)

Element	Tolerable deviation from mean in %	for concentrations below
N	85-115	5 mg/g
S	80-120	0.5 mg/g
P	85-115	0.5 mg/g
Ca	85-115	3 mg/g
Mg	85-115	0.5 mg/g
K	85-115	1 mg/kg
Zn	80-120	20 µg/g
Mn	80-120	20 µg/g
Fe	70-130	20 µg/g
Pb	60-140	0.5 µg/g
B	70-130	5 µg/g

If a limit of quantification (LOQ) is given from the laboratory, it will be checked first against the maximum acceptable LOQ from table 5. Is it higher than the maximum acceptable LOQ the lab will fail (marked in orange) - is it equal or lower it will be checked then against the outlier free mean. Is the submitted LOQ within the tolerable limits the lab will pass (marked in green), is it outside the lab will fail (marked in orange) for this parameter/sample combination. This evaluation of LOQ values was fixed in the 3rd Meeting of the Heads of the Laboratories in Arcachon (2011).

Table 5: Maximum acceptable limit of quantification and lowest evaluated interlaboratory sample result fixed in Arcachon 2011 (3rd Meeting of the Heads of the Laboratories)

Parameter	Unit	max. acceptable LOQ	Lowest evaluated result
N	mg/g	2	-
S	mg/g	0.3	-
P	mg/g	0.3	-
Ca	mg/g	0.5	-
Mg	mg/g	0.3	-
K	mg/g	0.5	-
C	g/100g	10	-
Zn	µg/g	5	-
Mn	µg/g	5	-
Fe	µg/g	5	-
Cu	µg/g	1	1
Pb	µg/g	0.50	0.20
Cd	ng/g	50	20
B	µg/g	1	-

In case of very low concentrations of copper, cadmium and lead in the interlaboratory comparison test samples these results will be excluded from the qualification report (see table 5). This procedure is needed to avoid wrong qualification results influenced by inaccurate results. On the other hand there is no practical need to detect these low concentrations in real samples, because it gives no additional information of the nutrient status (< 1 µg Cu/g is always deficiency) or of the pollution impact situation (< 20 ng Cd/g, < 1 µg Cu/g, < 0.2 µg Pb/g is always not polluted).

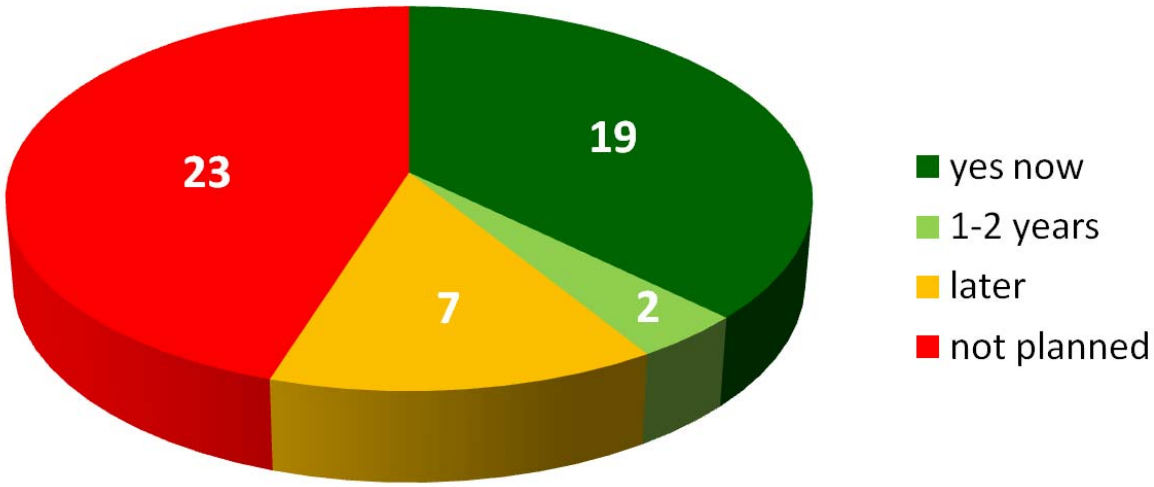
3 RESULTS

3.1 Main results of the questionnaire

All participating laboratories should fill a questionnaire in order to obtain information about the status and changes of their quality control systems. 51 of the 53 laboratories submit this questionnaire.

The first questions dealt with the accreditation status of the laboratories and the summarized results are shown in figure 2.

Figure 2: Accreditation status according EN 17025 (n=51)

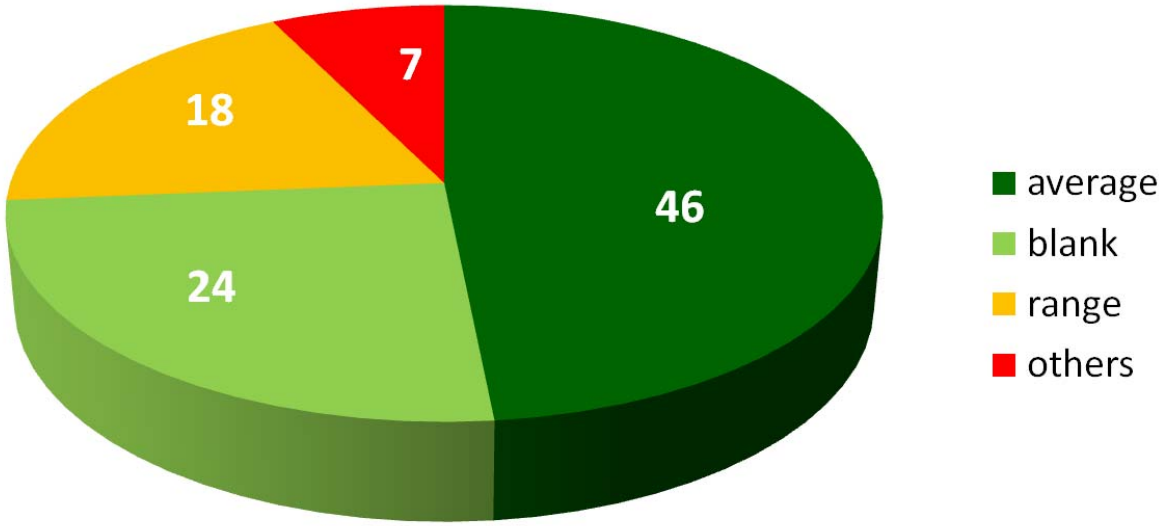


41.2% of the laboratories are accredited now (19 labs) or plan an accreditation within 1-2 years (2 lab) - 23 laboratories don't plan an accreditation in future.

The next important question was about the usage of control charts for routine quality control. 94.1% of these 51 laboratories are using control charts, and most of them are using average control chart – 3 of this 51 laboratories are still using no control chart. Some of the laboratories are using more than one type of control charts.

The other questions dealt with analytical knowledge and number of samples per year they will be evaluated in the next test, because not all labs answer this questions at the moment.

Figure 3: Types of control charts used in foliar laboratories



3.2 Results of the 18th Interlaboratory Comparison Test

Table 6 gives an overview which laboratories analysed the test samples well and which laboratory encountered quality problems. This evaluation is based on the tolerable limits from table 3 and table 4 and on the maximum acceptable limit of quantification (LOQ) from table 5. A green marked field means all four samples are analysed well, a grey marked field means no results were sent from this laboratory till 1st of January 2016. The red marked "<" or ">" mean number of results lower or higher the tolerable limits.
If a LOQ is given from the laboratory, it will be first checked against the maximum acceptable LOQ from table 5. Is it higher than the maximum acceptable LOQ the lab will fail (marked with "L").

The following participants, which have a lower percentage of correct results (lower than 80% of correct results), have bigger QC/QA-problems in their laboratory:

A79 (79.1%), **F24** (78.6%), **A89** (65.5%), **F21** (62.5%) and **A62** (45.0%).

Laboratory A80 (78.3%) has only special interest in heavy metals. This lab failed with all samples for zinc and with one sample for iron, but it hasn't analysed a lot of mandatory and optional parameters. This fact was the reason for the "low percentage of correct results".

Some results (especially for iron and copper) are within the tolerable limits, but the statistical evaluation shows an excessive standard deviation (outlier type 1 or 3), that means they had e.g. contamination influences or methodical problems. These results are marked with "a" or with "c" in the detailed evaluation in the annex.

Sample 2 (pine branches) was a difficult sample, because of the low concentrations of some elements. More than 40% of the *non tolerable* results are only from sample 2.

Table 6: Results of the 18th Interlaboratory Comparison Test – results marked with the limits from tables 3 and 4 (green = all samples were analysed well; < = too low; > = too high; grey = no results were sent) and with the maximum acceptable LOQ from table 5 (L = too high LOQ)

Labcode	N	S	P	Ca	Mg	K	C	Zn	Mn	Fe	Cu	Pb	Cd	B
A36														>
A37						<<								
A39		<<	>									>		>>
A42	>													
A43			<		<	>								
A45	>													
A47														
A49	>												<<<<	<
A51														
A53			>	>>>	<>									
A55	>				>>	<>				>				
A56								>>>>			>>>>			
A57		>	>	>	>	>				<				
A58	>>		>		<			>	<	<				
A59				<			<<<<							
A60														>
A61	>													
A62	<		<<<>	<>>	<<>	<>>		<	<<<<	<<<				
A65					>	>						>>		
A79				<<	<<<	<>		<<						
A80								<<<<		<				
A82			>>		>	<		>>>>		>			>	
A84														
A85														
A86														
A87														
A89		>>>	<	<	<			<<<<	<<<<			<<	>>	>
F01														
F02					<	<				<				
F03										<		>		
F05												>		
F06														
F07												>	<	
F08			>>							>				
F09			>>	>>	>									
F11														
F12			<<									>>		
F13	<	<	L	>		>>	<<<<							
F14							<			>				
F15										>			>	

Labcode	N	S	P	Ca	Mg	K	C	Zn	Mn	Fe	Cu	Pb	Cd	B
F16	<													
F18	>				<	<	>							L
F19	>													
F20										<				
F21			<<<	<<	<	<>>								
F22			<			>								
F24			>		<<<	>>								
F25		<	<		<		<<<<			<				
F26														
F27					<	<<<					>>			
F32			>											
F33		>>				>				<>>		<>		<>>
S18	<					<								

The following mean element concentrations were found in the test samples and the percentage of the laboratory results out of the tolerable limits are given in table 7.

Table 7: Mean element concentrations and percentage of non-tolerable results (results evaluated with the tolerable limits for low concentrations are marked in blue; not evaluated samples with very low concentrations are marked in grey)

Element	Unit	Sample 1 *Beech leaves*	Sample 2 *Pine branches*	Sample 3 *Spruce needles*	Sample 4 *Spruce needles*
N	mg/g	25.30	3.22	11.40	13.37
	%	0.00	29.27	2.44	0.00
S	mg/g	1.74	0.41	0.85	0.93
	%	0.00	7.69	10.26	7.69
P	mg/g	1.17	0.14	0.80	1.47
	%	4.76	26.19	19.05	11.90
Ca	mg/g	12.42	2.71	8.46	4.19
	%	4.54	6.82	9.09	15.91
Mg	mg/g	1.92	0.23	0.71	0.83
	%	6.82	27.27	9.09	13.64
K	mg/g	6.78	0.37	4.07	5.81
	%	8.89	33.33	4.44	15.56
C	g/100g	50.86	52.46	51.21	51.88
	%	8.11	8.11	8.11	13.51
Zn	µg/g	30.91	27.73	47.07	30.95
	%	13.51	13.51	13.51	13.51
Mn	µg/g	845.9	103.4	1601.3	875.0
	%	5.41	8.11	5.41	5.41
Fe	µg/g	113.5	264.6	47.5	100.8
	%	2.70	29.73	13.51	2.70
Cu	µg/g	6.37	2.78	2.38	2.68
	%	2.78	5.56	2.78	5.56
Pb	µg/g	0.43	7.01	0.27	*0.18*
	%	12.00	12.00	24.00	-
Cd	ng/g	73.02	246.3	184.9	27.32
	%	10.71	3.57	3.57	14.29
B	µg/g	57.29	3.54	12.49	9.79
	%	4.76	28.57	0.00	14.29

The lead concentration of sample 4 was too low for the evaluation.

3.3 Comparison between the 18th Interlaboratory Comparison Test and former tests

Sample 3 of the 18th and sample 1 of the 9th Interlaboratory Comparison Tests are identical (*Spruce needles* - Germany). For most of the elements the mean values harmonize well (see Table 8). The results are good comparable and the sample is stable.

Table 8: Comparison between the 9th and 18th Interlaboratory Comparison Test

Element (Unit)	9th Interlaboratory Comparison Test 2006/07 (Sample 1) Mean	*Number of Labs*	18th Interlaboratory Comparison Test 2015/16 (Sample 3) Mean	*Number of Labs*
N mg/g	11.38	*49*	11.40	*41*
S mg/g	0.84	*49*	0.85	*39*
P mg/g	0.79	*52*	0.80	*42*
Ca mg/g	8.42	*52*	8.46	*44*
Mg mg/g	0.71	*52*	0.71	*44*
K mg/g	4.13	*53*	4.07	*45*
C g/100g	51.02	*36*	51.21	37
Zn µg/g	47.04	*42*	47.07	*37*
Mn µg/g	1584	*44*	1601	*37*
Fe µg/g	46.81	*43*	47.53	*37*
Cu µg/g	2.50	*38*	2.38	*36*
Pb µg/g	0.33	*26*	0.27	*25*
Cd ng/g	180.2	*28*	184.9	*28*
B µg/g	12.72	*21*	12.49	*21*

The ringtest is evaluated on the basis of fixed limits (table 3 and 4). These tolerable deviations from the mean were updated in Foliage Expert Panel Meetings in Bonn (1999), Prague (2003), and Madrid (2007) and in the 1st Meeting of the Heads of the Laboratories in Hamburg (2009) for some elements. Maximum acceptable limit of quantification (table 5) defined in the 3rd Meeting of the Heads of the Laboratories in Arcachon (2011) are used from the 14th to 18th ringtest. The changes of the tolerable results from the 6th to the 18th test are shown in tables 9a and 9b.

Table 9a: Percentage of non tolerable results from 6th to 12th test

Element	Tolerable limits [1]	6th Labtest 2003/2004		7th Labtest 2004/2005		8th Labtest 2005/2006		9th Labtest 2006/2007		10th Labtest 2007/2008		11th Labtest 2008/2009 [1]		12th Labtest 2009/2010 [1]	
	normal (low) (± %)	Non tolerable (%)	Number	Non tolerable (%)	Number	Non tolerable (%)	Number	Non tolerable (%)	Number of mean values	Non tolerable (%)	Number	Non tolerable (%)	Number	Non tolerable (%)	Number
N	10 (15)	**3,0**	*164*	**3,2**	*156*	**7,3**	*192*	**6,1**	*196*	**2,6**	*196*	**10,9**	*192*	**7,6**	*212*
S	15 (20)	**11,3**	*159*	**10,3**	*156*	**10,6**	*188*	**8,3**	*196*	**15,4**	*188*	**14,4**	*188*	**16,5**	*200*
P	10 (15)	**17,3**	*168*	**7,9**	*164*	**9,7**	*196*	**4,3**	*208*	**13,2**	*204*	**14,2**	*204*	**13,7**	*212*
Ca	10 (15)	**6,5**	*168*	**11,0**	*164*	**10,2**	*196*	**4,3**	*208*	**17,2**	*204*	**19,1**	*204*	**9,7**	*216*
Mg	10 (15)	**6,5**	*168*	**10,4**	*164*	**5,9**	*188*	**4,3**	*208*	**10,8**	*204*	**18,6**	*204*	**14,4**	*216*
K	10 (15)	**7,7**	*168*	**4,8**	*168*	**5,6**	*196*	**3,3**	*212*	**16,8**	*208*	**17,5**	*200*	**6,0**	*216*
C	5	**15,6**	*128*	**7,8**	*116*	**4,3**	*140*	**11,1**	*144*	**3,2**	*156*	**16,9**	*148*	**8,5**	*188*
Zn	15 (20)	**11,5**	*148*	**14,0**	*143*	**4,5**	*156*	**8,9**	*168*	**10,2**	*176*	**6,7**	*164*	**6,4**	*172*
Mn	15 (20)	**9,9**	*152*	**8,4**	*143*	**7,0**	*172*	**0,0**	*176*	**2,8**	*180*	**6,5**	*168*	**2,7**	*176*
Fe	20 (30)	**8,8**	*148*	**10,3**	*136*	**7,1**	*168*	**9,9**	*172*	**5,7**	*176*	**13,1**	*160*	**4,8**	*168*
Cu	20	**9,9**	*131*	**14,3**	*126*	**8,9**	*146*	**10,8**	*148*	**4,9**	*164*	**17,1**	*164*	**21,3**	*160*
Pb	30 (40)	**27,8**	*90*	**38,0**	*79*	**34,7**	*72*	**24,0**	*104*	**13,0**	*100*	**9,8**	*92*	**13,3**	*120*
Cd	30	**12,0**	*83*	**11,1**	*81*	**10,3**	*97*	**7,1**	*112*	**17,0**	*100*	**7,7**	*104*	**10,7**	*112*
B	20 (30)	**23,8**	*84*	**21,1**	*90*	**12,8**	*86*	**8,3**	*84*	**13,5**	*96*	**12,5**	*88*	**5,4**	*92*

[1] special tolerable limits for low concentrations in the 11th and 12th test

Table 9b: Percentage of non tolerable results from the 13th to the 18th test

Element	Tolerable limits [1]	13th Labtest 2010/2011		14th Labtest 2011/2012		15th Labtest 2012/2013		16th Labtest 2013/2014		17th Labtest 2014/2015		18th Labtest 2015/2016	
	normal (low) (± %)	Non tolerable (%)	Number	Non tolerable (%)	Number	Non tolerable (%)	Number	Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values
N	10 (15)	**4,9**	*224*	**8,9**	*224*	**6,0**	*216*	**3,1**	*196*	**2,1**	*192*	**7,9**	*164*
S	15 (20)	**13,9**	*208*	**12,7**	*220*	**13,9**	*208*	**14,8**	*196*	**9,9**	*192*	**6,4**	*156*
P	10 (15)	**7,4**	*216*	**15,9**	*220*	**9,4**	*224*	**18,8**	*208*	**14,7**	*204*	**15,5**	*168*
Ca	10 (15)	**8,0**	*212*	**14,7**	*224*	**12,1**	*224*	**16,3**	*208*	**17,7**	*212*	**9,1**	*176*
Mg	10 (15)	**5,7**	*212*	**19,3**	*228*	**5,9**	*220*	**8,8**	*204*	**12,3**	*212*	**14,2**	*176*
K	10 (15)	**8,5**	*212*	**21,0**	*228*	**18,0**	*228*	**9,1**	*208*	**11,5**	*208*	**15,6**	*180*
C	5	**6,3**	*192*	**15,4**	*208*	**7,7**	*196*	**10,0**	*180*	**7,8**	*180*	**9,5**	*148*
Zn	15 (20)	**9,7**	*176*	**4,4**	*184*	**5,4**	*184*	**5,6**	*180*	**8,1**	*172*	**13,5**	*148*
Mn	15 (20)	**4,8**	*188*	**6,8**	*192*	**0,5**	*188*	**8,7**	*184*	**3,9**	*180*	**6,1**	*148*
Fe	20 (30)	**0,0**	*180*	**14,1**	*184*	**3,7**	*188*	**9,4**	*180*	**6,5**	*168*	**12,2**	*148*
Cu	20	**9,1**	*176*	**10,3**	*184*	**9,1**	*176*	**14,5**	*172*	**15,7**	*172*	**4,2**	*144*
Pb	30 (40)	**12,5**	*112*	**15,6**	*128*	**8,6**	*105* [2]	**10,7**	*56* [2]	**7,8**	*87* [2]	**16,0**	*75* [2]
Cd	30	**9,5**	*116*	**10,0**	*140*	**7,1**	*140*	**4,8**	*62* [2]	**14,3**	*112*	**8,0**	*112*
B	20 (30)	**3,3**	*92*	**12,0**	*100*	**5,0**	*100*	**6,3**	*96*	**5,0**	*100*	**11,9**	*84*

[1] special tolerable limits for low concentrations

[2] sample/s excluded because of very low concentration

3.4 Evaluation by element

3.4.1 Nitrogen

7.9 % of non-tolerable results - a good result - because most of these bad results are linked to the low nitrogen content of the sample 2 (pine branches). Only with this result of the pine branches sample 29.3 % of all participants failed. If you take out these litterfall sample results a continuous improvement compared with the last interlaboratory tests can be found (6.0 → 3.1 → 2.1 → 0.8 %).
No laboratory failed with three or four samples.

3.4.2 Sulphur

The laboratory A89 failed in analyzing three of the four samples. In comparison with the last Interlaboratory Comparison Tests the percentage of non-tolerable results is lower (14.8 → 9.9 → 6.4 %). The laboratory A89 is using an element analyzer – the determined sulphur content is too high. The reason for this could be a calibration error (e.g. wrong standard concentration).

3.4.3 Phosphorus

In comparison with the last Interlaboratory Comparison Tests the percentage of non-tolerable results is still high (18.8 → 14.7 → 15.5 %). Especially sample 2 with a low phosphorous content was problematically for a lot of laboratories (more than 26 % of non tolerable results). The laboratories A62 and F21 failed in analyzing three or all four samples. A re-qualification is needed for the *ICP-Forests laboratory* A62. This laboratory failed also in the last test for phosphorous! This lab is using a colorimetric phosphorous determination after an oxidizing digestion. The oxidizing agent can disturb the colorimetric phosphorous determination.

3.4.4 Calcium

In comparison with the last Interlaboratory Comparison Tests is the percentage of non-tolerable results better than before (16.3 → 17.7 → 9.1%). The laboratories A53 and A62 failed in analyzing three of the four samples. A re-qualification is needed for the *ICP-Forests laboratory* A62.

3.4.5 Magnesium

In comparison with the last tests the percentage of non-tolerable results is higher (8.8 → 12.3 → 14.2 %). Especially sample 2 with a low magnesium content was problematically for a lot of laboratories (more than 27 % of non tolerable results). The laboratories A62, A79 and F24 failed with three of the four samples. A re-qualification is needed for the *ICP-Forests laboratories* A62 and F24.

3.4.6 Potassium

In comparison with the last tests the percentage of non-tolerable results is higher (9.1 → 11.5 → 15.6 %), but most of the non-tolerable results are linked to the low potassium

content in sample 2 (more than 33 % of all labs failed). The laboratories A62, F21 and F27 failed in analyzing three of the four samples. Laboratory F21 failed also in the last test for potassium!
A re-qualification is needed for the *ICP-Forests laboratories* A62 and F27.

3.4.7 Carbon

The percentage of non tolerable results is similar than in the last Interlaboratory Comparison Test (10.0 → 7.8 → 9.5 %). The laboratories A59, F13 and F25 failed in analyzing all four samples. It seems that these laboratories have calibration problems with their element-analyzers. Laboratory A59 failed also in the last test for carbon! A re-qualification is needed for the *ICP-Forests laboratories* A59 and F13.

3.4.8 Zinc

13.5 % of the results were non-tolerable – the result is higher compared with the last tests (5.6 → 8.1 → 13.5 %). Four laboratories A56, A80, A82 and A89 failed in analyzing all four samples. It seems that the laboratories A56 and A82 have a contamination or a calibration problem with ICP-AES – all results are too high. The laboratories A80 and A89 are using an ICP-MS method a calibration error or a too high blank correction could explain the too low zinc content in the samples.

3.4.9 Manganese

6.1% of the results were non-tolerable. Not bad but there were only high concentrations in the samples (> 100 µg Mn/g). Only the laboratories A62 and A89 failed with all samples. All results were too low; a calibration error seems to be possible. A re-qualification is needed for the *ICP-Forests laboratory* A62.

3.4.10 Iron

In comparison with the last tests the percentage of non-tolerable results is higher (9.4 → 6.5 → 12.2 %). It looks not so dramatically but the results of sample 2 are really bad - close to 30% of non tolerable results for this high iron content (> 260 µg/g). Most of the laboratories which used a microwave digestion method observed a too low iron content. It seems that the used digestion time and/or the digestion temperature is/are too low and iron is still fixed in the silica matrix.
The laboratories A62 and F33 failed with three of the four samples. A re-qualification is needed for both *ICP-Forests laboratories*.

3.4.11 Copper

4.2% of the results were non-tolerable – a really good result. Only laboratory A56 failed in analyzing all samples; contamination could be a reason for the too high results.
Some laboratories (A49, F05, F15 and F27) have a higher variation in their copper results (outlier 1 or 3). Contamination effects or a methodical problem could be a reason for that.

3.4.12 Lead

For passing this Interlaboratory Test for lead two or three sample results must be within the tolerable limits. The *background* sample 4 (0.18 µg/g) was excluded from the evaluation.

In comparison with the last tests the percentage of non-tolerable results is much higher (10.7 → 7.8 → 16.0 %), because the lead concentrations of the samples 1 and 3 are low. The laboratories A65, A89, F12 and F33 failed with two samples. The laboratory A65 failed with lead in the last test too! A re-qualification is needed for the *ICP-Forests laboratories* F12 and F33.

3.4.13 Cadmium

In comparison with the last test the percentage of non-tolerable results is lower (14.3 → 8.0%). The laboratory A49 failed with all samples.

3.4.14 Boron

11.9 % of the results were non-tolerable. In comparison with the last test the percentage of non-tolerable results is higher (6.3 → 5.0 → 11.9%). One laboratory (F33) failed with three of the four samples. A re-qualification is needed for the *ICP-Forests laboratory* F33.

4 CONCLUSIONS

53 laboratories in 25 countries participated in the 17th Needle/Leaf Interlaboratory Test, but only 46 laboratories submit results in time.

A new system for qualification and re-qualification started with the 11th test in 2009. This system was enlarged after the manual update in 2010 to all ICP-Forests partners (see König et al. 2010, 2013, Rautio et al. 2010, 2013 Pitman et al. 2010). With the ring test report each participant get a qualification report, the download is possible on the webpage (http://bfw.ac.at/ws/ring_nadel.login). It has been decided to qualify the results of each parameter separately. If 50% or more (generally two, three or all four samples) of the results for this parameter for all the samples of the ring test are within the tolerable limits, the laboratory is qualified. Re-qualification is mandatory for all *ICP-Forests laboratories*, if monitoring results (foliage, litterfall, ground vegetation) will be submitted to PCC in autumn 2016 from the vegetation period 2015.

New since the 14th Interlaboratory Test is the usage of maximum acceptable limits of quantification (LOQ). These limits are needed, because a lot of laboratories are using multi element methods (mostly ICP-AES) with higher LOQs for some elements. But for evaluating and classification of the monitoring samples *real* measured results and lower LOQ are needed. A task was given from the 12th Expert Panel Meeting Foliage and Litterfall (Tallinn 2011) to the Working Group QA/QC in Laboratories to fix this problem. Maximum acceptable LOQs for mandatory and optional parameters for foliage, litterfall and ground vegetation were discussed and accepted in the 3rd Meeting of the Heads of the Laboratories (Arcachon 2011). This problem is more or less fixed now – only two laboratories submit higher LOQs than the maximum acceptable and failed for this sample/parameter.

In case of very low concentrations of copper, cadmium and lead in the interlaboratory comparison test samples, results of these samples will be excluded from the evaluation (this happened for the lead results of the sample 4). This procedure is needed to avoid wrong qualification results influenced by inaccurate measurements - and on the other hand there is no real need to detect these very low concentrations in real monitoring samples, because it gives no additional information of the nutrient status or of the pollution impact situation.

In general are the results of the 18th Needle/Leaf Interlaboratory Test similar than the test before. A lot of laboratories failed with the pine branch sample (sample 2) – more than 40% of all non-tolerable results are linked with this sample. This sample has a low content of nitrogen, sulphur, phosphorous, calcium, magnesium and potassium and a difficult matrix especially for a determination of the correct iron content.

The following participating laboratories with a lower percentage of correct results (less than 80%) have bigger QC/QA-problems in their laboratory and/or methodical problems:

A79 (79.1%), **F24** (78.6%), **A89** (65.5%), **F21** (62.5%) and **A62** (45.0%).

Some of the *ICP-Forests laboratories* failed and had to do a re-qualification for some parameters (**A59**: C; **A62**: P, Ca, Mg, K, Mn, Fe; **F12**: Pb; **F13**: C; **F24**: Mg; **F27**: K; **F33**: Fe, Pb, B). These (*ICP-Forests*) laboratories had to check and re-validate their method or select

another better method. If reference material is needed for this purpose - FFCC can offer some ringtest material (see: http://bfw.ac.at/rz/bfwcms2.web?dok=5146).

All laboratories are invited to take part in the re-qualification program, started up from now till 1st of September 2016 (see: http://bfw.ac.at/rz/bfwcms2.web?dok=7830).

Some words to the used analytical equipment. Microwave digestion method is getting more and more common. Too low iron content can be observed, if the digestion temperature and/or time is/are too low.
A clear methodical recommendation to ICP-AES can be given and, where ICP-AES is not sensitive enough, ICP-AES with ultrasonic nebulizer, ICP-MS should be used. For nitrogen and carbon, element analyzers are the best choice, if a correct calibration is performed.

5 OUTLOOK

More and more laboratories changed their method during the last years to microwave digestion and ICP-MS, so they are able now to determine heavy metals simultaneously with the mandatory and optional elements with a sufficient accuracy. Mercury can detect easily with a good accuracy with a special element analyzer or by AAS cold vapor technique. Heavy metals are an important air pollution indicator also with special interest within ICP-FORESTS.

It is planned to evaluate the following additional elements according DIN 38402: As, Cr, Co, Hg and Ni in a second evaluation - these elements are analyzed at the moment from more than 10 participants. Maybe it is also possible to include the elements Mo, Tl and V in this evaluation up from the next test, if more laboratories can/will analyze them.

A special evaluation for aluminium and sodium are at the moment not planned. The results of aluminium scatter a lot, because most of the laboratories are not using HF acid for total digestion. The detected aluminium content depends on the digestion method (time, temperature, acid mixtures) and the sample matrix and the results are not comparable between the laboratories. Sodium results scattered also a lot, because of contamination effects.

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Method Code – Pretreatment (P)

Extraction methods	
PA06	Extraction with diluted HNO_3
PA99	Other extraction method
Digestion methods (open system)	
PB02	Open digestion with H_2SO_4/H_2O_2
PB03	Open digestion with HNO_3
PB04	Open digestion with HNO_3 /H_2SO_4
PB05	Open digestion with HNO_3/H_2O_2
PB06	Open digestion with $HNO_3/HClO_4$
PB07	Kjeldahl H_2SO_4 with Se or Cu catalyst
PB08	Modified Kjeldahl H_2SO_4 with Ti/Cu catalyst
PB99	Other digestion method (open system)
Pressure digestion methods	
PC01	Pressure digestion HNO_3
PC02	Pressure digestion HNO_3/H_2O_2
PC03	Pressure digestion HNO_3/HF (total digestion)
PC99	Other pressure digestion method
Microwave pressure digestion methods	
PD01	Microwave pressure digestion HNO_3
PD02	Microwave pressure digestion HNO_3/H_2O_2
PD03	Microwave pressure digestion HNO_3/H_2O_2/HCl
PD04	Microwave digestion $HNO_3/HClO_4$
PD05	Microwave pressure digestion HNO_3/HF (total digestion)
PD99	Other microwave pressure digestion method
Dry ashing digestion methods	
PE01	Oxygen ashing (Schöniger)
PE99	Other dry ashing method
Other methods	
PZ01	Material melted and formed (tablet) for XRF methods
PZ02	Material pressed (pellet) for XRF methods
PZ98	No pretreatment
PZ99	Pretreatment method not in this list

Method Code – Determination (D)

Element analyzer	
DA01	Macro Elemental-analyzers for C, N or S for solids (Sample > 100mg)
DA02	Micro Elemental-analyzers for C, N or S for solids (Sample ≤ 100mg) with an extra milling step
DA05	Hg-Analyzer
DA99	Other Element analyzers method
Atomic Absorption or Emission Spectroscopy	
DB01	AAS-flame technique (C_2H_2/Air)
DB02	AAS-flame technique (C_2H_2/N_2O)
DB03	AAS-cold vapor technique
DB04	AAS-hydride technique
DB05	AAS-flameless (electrothermal technique)
DB06	AES-Flame technique (Flame photometry)
DB07	AFS-hydride-technique
DB08	ICP-AES without Ultrasonic nebulisation
DB09	ICP-AES with Ultrasonic nebulisation
DB10	ICP-MS
DB99	Other Atomic Absorption or Emission Spectroscopy method
Physical techniques	
DD01	X-ray-energy dispersive
DD02	X-ray-wavelength dispersive
DD99	Other physical technique
UV-VIS Spectrophotometry techniques	
DE01	UV-VIS-spectrophotometry-techniques
DE03	Continous flow UV-VIS-spectrophotometry-techniques
DE05	Flow injection UV-VIS-spectrophotometry-techniques
DE99	Other UV-VIS Spectrophotometry technique
Electrochemical methods	
DF03	Ion selective electrodes (except pH-Electrodes)
DF08	Other Potentiometric titration
DF99	Other Electrochemical method
Other methods	
DZ02	N-Determination (after Kjeldahl digestion)
DZ99	Detection method not in this list

List of abbreviation

No.	Number of result ordered by Lab. mean
Lab. Code	Code of the laboratory / Laboratory which are analysing level II samples are marked with x
P	Code for pre-treatment method (s. method code pre-treatment)
D	Code for determination method (s. method code determination)
Lab. mean	Mean of the results of each laboratory without outliers type 1
n	Number of all results from this laboratories without outliers type 1, 2, 3
N	Number of all results from all laboratories without outliers type 1, 2, 3
L	Number of all laboratories without outliers type 2, 3
Mean	Total mean value from all results without outliers type 1, 2, 3
Si	Standard deviation from each laboratory without outliers type 1
SI	Mean Standard deviation for all laboratories without outliers type 1, 2, 3
Vi	Si*100/Lab. mean
VI	SI*100/Mean
SR	Standard deviation from all results without outliers
VR	SR*100/Mean
Recovery %	Lab.mean * 100/Mean
a	Outlier type 1
b	Outlier type 2
c	Outlier type 3
*	Not tolerable mean value from one laboratory (see tables 3 & 4)
**	Higher than maximum acceptable limit of quantification (see table 5)

Annex - Results

Mandatory parameters (N, S, P, Ca, Mg, K, C)

Optional parameters (Zn, Mn, Fe, Cu, Pb, Cd, B)

Additional parameters

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: N **Sample: 1** Unit: mg/g

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	A37	PZ99	DZ99	23,46	23,21	22,94	23,17	4	23,20	0,21	0,92	91,68
2	S18	PZ98	DA01	23,89	23,83	23,92	23,94	4	23,90	0,05	0,20	94,45
3	A55	PZ98	DA01	24,80	24,90	23,20	23,40	4	24,08	0,90	3,74	95,16
4	A59x	PZ98	DA02	24,42	24,67	23,88	24,32	4	24,32	0,33	1,36	96,14
5	A43	PB07	DZ02	24,07	24,36	24,80	24,40	4	24,41	0,30	1,23	96,47
6	F25	PZ98	DA01	24,51	24,57	24,29	24,32	4	24,42	0,14	0,57	96,53
7	F26x	PB08	DZ02	24,49	24,46	24,48	24,49	4	24,48	0,01	0,06	96,76
8	F21	PZ98	DA01	25,28	23,83	24,29	24,53	4	24,48	0,61	2,47	96,77
9	A62x	PZ98	DA01	24,70	24,40	24,50	24,60	4	24,55	0,13	0,53	97,04
10	A45x	PZ98	DA01	24,60	24,50	24,90	24,70	4	24,68	0,17	0,69	97,53
11	F14x	PZ98	DA01	24,74	24,63	25,16	24,31	4	24,71	0,35	1,42	97,67
12	A36	PB07	DZ02	24,72	24,76	24,80	24,62	4	24,73	0,08	0,31	97,73
13	F03	PB07	DZ02	24,93	25,05	25,38	23,75	4	24,78	0,71	2,87	97,93
14	A61x	PZ98	DA02	25,14	24,87	24,82	24,82	4	24,91	0,15	0,62	98,47
15	A57	PZ98	DA01	24,62	25,38	24,92	24,88	4	24,95	0,32	1,27	98,62
16	F24x	PB08	DZ02	25,03	24,62	24,93	25,30	4	24,97	0,28	1,12	98,70
17	F07x	PZ98	DA01	25,88	24,95	25,03	24,91	4	25,19	0,46	1,83	99,57
18	F05x	PZ98	DA01	25,40	25,40	25,40	25,40	4	25,40	0,00	0,00	100,39
19	F18x	PB07	DZ02	25,40	25,50	25,50	25,40	4	25,45	0,06	0,23	100,59
20	F12x	PZ98	DA02	25,65	25,51	25,31	25,39	4	25,47	0,15	0,58	100,65
21	F15x	PZ98	DA01	26,10	25,53	25,18	25,35	4	25,54	0,40	1,57	100,95
22	F02x	PZ98	DA01	25,73	25,52	25,59	25,44	4	25,57	0,12	0,48	101,07
23	A56	PZ98	DA02	25,42	24,83	26,57	25,62	4	25,61	0,72	2,82	101,22
24	A65	PZ98	DA02	25,70	25,90	25,60	25,30	4	25,63	0,25	0,98	101,28
25	F13x	PZ98	DA01	25,30	25,60	25,70	25,90	4	25,63	0,25	0,98	101,28
26	F22	PZ98	DA02	25,80	25,72	25,50	25,68	4	25,68	0,13	0,49	101,48
27	F32x	PZ98	DA01	25,50	25,80	26,00	25,90	4	25,80	0,22	0,84	101,98
28	F19x	PZ98	DA01	26,10	25,80	25,70	25,70	4	25,83	0,19	0,73	102,07
29	F33x	PZ98	DA02	24,95	26,67	25,76	25,97	4	25,84	0,71	2,74	102,12
30	A42	PZ98	DA01	25,70	25,99	25,85	25,84	4	25,85	0,12	0,46	102,15
31	F27x	PZ98	DA01	26,01	26,01	25,58	25,79	4	25,85	0,21	0,80	102,16
32	A51	PZ98	DA02	26,00	25,72	25,84	25,97	4	25,88	0,13	0,50	102,30
33	F16x	PC01	DB08	26,19	25,46	26,08	26,04	4	25,94	0,33	1,26	102,54
34	A89	PZ98	DA01	25,99	25,98	26,00	26,01	4	26,00	0,01	0,05	102,75
35	A49x	PZ98	DA99	26,50	25,60	26,10	25,80	4	26,00	0,39	1,51	102,77
36	A39	PZ98	DA02	26,28	26,03	25,80	26,01	4	26,03	0,20	0,75	102,88
37	F08x	PZ98	DA01	26,06	26,38	25,96	25,75	4	26,04	0,27	1,02	102,91
38	A58x	PZ98	DA99	26,45	26,18	26,15	26,02	4	26,20	0,18	0,69	103,56
39	A82	PZ98	DA02	26,60	26,30	26,50	25,50	4	26,23	0,50	1,90	103,66
40	F01x	PB07	DZ02	26,89	26,54	26,13	26,18	4	26,44	0,35	1,34	104,49
41	A60	PZ98	DA02	26,59	26,77	26,82	26,61	4	26,70	0,11	0,43	105,52
42												
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	N	Mean	SI	VI
all labs	164	**25,30**	**0,273**	**1,079**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
41	**0,772**	**3,051**

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: N **Sample: 2** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F16x	PC01	DB08	2,54	2,50	2,48	2,49	4	2,50		*	0,03	1,08	77,65
2	S18	PZ98	DA01	2,62	2,61	2,57	2,43	4	2,56		*	0,09	3,43	79,36
3	A62x	PZ98	DA01	2,62	2,52	2,52	2,62	4	2,57		*	0,06	2,25	79,75
4	F13x	PZ98	DA01	2,17	2,49	3,05	2,97	4	2,67		*	0,42	15,54	82,85
5	F25	PZ98	DA01	2,68	2,82	2,82	2,86	4	2,80			0,08	2,82	86,73
6	A60	PZ98	DA02	2,85	2,86	2,83	2,78	4	2,83			0,04	1,26	87,81
7	F14x	PZ98	DA01	2,77	2,66	3,09	2,87	4	2,85			0,18	6,43	88,36
8	A82	PZ98	DA02	3,50	2,70	2,70	3,10	4	3,00			0,38	12,77	93,09
9	F24x	PB08	DZ02	3,01	2,97	3,05	3,04	4	3,02			0,04	1,19	93,63
10	F02x	PZ98	DA01	3,00	3,07	3,02	3,01	4	3,03			0,03	1,03	93,86
11	A51	PZ98	DA02	3,01	2,99	2,95	3,17	4	3,03			0,10	3,20	94,01
12	A36	PB07	DZ02	3,01	2,98	3,14	3,07	4	3,05			0,07	2,32	94,64
13	A59x	PZ98	DA02	3,10	3,06	3,00	3,05	4	3,05			0,04	1,35	94,72
14	F15x	PZ98	DA01	3,13	2,96	3,12	3,02	4	3,06			0,08	2,68	94,87
15	A65	PZ98	DA02	3,20	3,00	3,00	3,20	4	3,10			0,12	3,72	96,19
16	F12x	PZ98	DA02	3,30	3,14	3,04	2,94	4	3,11			0,15	4,94	96,35
17	F07x	PZ98	DA01	3,07	3,23	3,14	3,00	4	3,11			0,10	3,16	96,50
18	A89	PZ98	DA01	3,12	3,11	3,10	3,12	4	3,11			0,01	0,28	96,64
19	F21	PZ98	DA01	3,29	3,11	2,88	3,18	4	3,12			0,17	5,56	96,66
20	F03	PB07	DZ02	3,32	3,07	3,07	3,15	4	3,15			0,12	3,74	97,82
21	A56	PZ98	DA02	3,36	3,30	3,17	2,96	4	3,20			0,18	5,54	99,22
22	A39	PZ98	DA02	3,19	3,22	3,27	3,39	4	3,27			0,09	2,70	101,33
23	F05x	PZ98	DA01	3,30	3,31	3,30	3,29	4	3,30			0,01	0,25	102,40
24	F01x	PB07	DZ02	3,40	3,34	3,28	3,23	4	3,31			0,07	2,22	102,79
25	F08x	PZ98	DA01	3,42	3,32	3,42	3,21	4	3,34			0,10	3,05	103,71
26	A57	PZ98	DA01	3,31	3,06	3,54	3,47	4	3,35			0,21	6,37	103,79
27	F27x	PZ98	DA01	3,28	3,36	3,26	3,51	4	3,35			0,11	3,39	104,03
28	F22	PZ98	DA02	3,51	3,44	3,55	3,30	4	3,45			0,11	3,18	107,05
29	F33x	PZ98	DA02	3,68	3,25	3,25	3,68	4	3,47			0,25	7,16	107,52
30	A37	PZ99	DZ99	3,52	3,46	3,49	3,42	4	3,47			0,04	1,23	107,75
31	A43	PB07	DZ02	3,50	3,50	3,45	3,45	4	3,48			0,03	0,83	107,83
32	F26x	PB08	DZ02	3,50	3,50	3,50	3,49	4	3,50			0,00	0,14	108,53
33	F32x	PZ98	DA01	3,52	3,42	3,63	3,42	4	3,50			0,10	2,86	108,53
34	F18x	PB07	DZ02	3,77	3,65	3,97	3,64	4	3,76		*	0,15	4,08	116,59
35	F19x	PZ98	DA01	3,47	3,73	3,88	3,96	4	3,76		*	0,22	5,73	116,67
36	A61x	PZ98	DA02	3,70	3,97	3,84	3,79	4	3,83		*	0,11	2,95	118,69
37	A55	PZ98	DA01	3,80	4,10	3,90	3,60	4	3,85		*	0,21	5,41	119,46
38	A45x	PZ98	DA01	3,92	3,88	3,86	3,95	4	3,90		*	0,04	1,03	121,09
39	A58x	PZ98	DA99	3,99	3,79	3,90	3,99	4	3,92		*	0,09	2,43	121,56
40	A49x	PZ98	DA99	4,81	5,15	5,28	4,72	0	4,99	*b*	*	0,27	5,36	154,84
41	A42	PZ98	DA01	5,47	5,52	5,66	5,28	0	5,48	*b*	*	0,16	2,87	170,04
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	N	Mean	SI	VI
all labs	156	**3,22**	**0,114**	**3,523**
15	% from the mean			
	L		SR	VR
	39		**0,371**	**11,501**

* = non tolerable mean because more than +/-

limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: N **Sample: 3** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	S18	PZ98	DA01	10,52	10,42	10,45	10,43	4	10,46			0,05	0,43	91,69
2	A65	PZ98	DA02	10,60	11,10	10,20	10,30	4	10,55			0,40	3,83	92,52
3	A62x	PZ98	DA01	10,70	10,60	10,70	10,70	4	10,68			0,05	0,47	93,62
4	F25	PZ98	DA01	10,85	10,80	10,87	10,78	4	10,83			0,04	0,39	94,93
5	A59x	PZ98	DA02	11,00	11,00	10,87	10,95	4	10,96			0,06	0,56	96,07
6	A57	PZ98	DA01	10,78	11,30	10,85	10,99	4	10,98			0,23	2,10	96,29
7	A55	PZ98	DA01	10,90	11,20	11,10	11,00	4	11,05			0,13	1,17	96,91
8	A82	PZ98	DA02	11,70	11,20	10,80	10,60	4	11,08			0,49	4,38	97,13
9	F16x	PC01	DB08	11,33	11,06	11,13	11,04	4	11,14			0,13	1,19	97,70
10	F14x	PZ98	DA01	10,91	11,12	11,66	11,02	4	11,18			0,33	2,98	98,03
11	F26x	PB08	DZ02	11,20	11,20	11,19	11,19	4	11,20			0,01	0,05	98,18
12	F24x	PB08	DZ02	11,21	11,30	11,17	11,27	4	11,24			0,06	0,52	98,55
13	F13x	PZ98	DA01	11,30	11,20	11,30	11,20	4	11,25			0,06	0,51	98,66
14	A37	PZ99	DZ99	11,40	11,39	11,11	11,23	4	11,28			0,14	1,23	98,95
15	F07x	PZ98	DA01	11,77	11,29	11,25	10,88	4	11,30			0,37	3,23	99,08
16	A42	PZ98	DA01	11,40	11,25	11,23	11,32	4	11,30			0,08	0,68	99,10
17	F03	PB07	DZ02	11,48	11,34	11,07	11,36	4	11,31			0,17	1,53	99,21
18	A36	PB07	DZ02	11,47	11,30	11,39	11,31	4	11,37			0,08	0,70	99,69
19	F15x	PZ98	DA01	11,35	11,53	11,38	11,37	4	11,41			0,08	0,72	100,04
20	A43	PB07	DZ02	11,35	11,20	12,09	11,00	4	11,41			0,48	4,17	100,06
21	A56	PZ98	DA02	11,64	11,94	10,79	11,27	4	11,41			0,50	4,35	100,06
22	F01x	PB07	DZ02	11,56	11,32	11,26	11,58	4	11,43			0,16	1,43	100,24
23	F12x	PZ98	DA02	11,51	11,54	11,44	11,36	4	11,46			0,08	0,70	100,53
24	F02x	PZ98	DA01	11,48	11,50	11,51	11,36	4	11,46			0,07	0,61	100,53
25	F21	PZ98	DA01	11,58	11,04	11,55	11,74	4	11,48			0,30	2,64	100,66
26	A45x	PZ98	DA01	11,40	11,50	11,40	11,70	4	11,50			0,14	1,23	100,85
27	F05x	PZ98	DA01	11,60	11,60	11,60	11,60	4	11,60			0,00	0,00	101,73
28	F18x	PB07	DZ02	11,70	11,30	11,50	12,00	4	11,63			0,30	2,57	101,95
29	F27x	PZ98	DA01	11,51	11,62	11,72	11,72	4	11,64			0,10	0,86	102,10
30	A61x	PZ98	DA02	11,92	11,60	12,05	11,16	4	11,68			0,40	3,39	102,45
31	A51	PZ98	DA02	11,77	11,59	11,67	11,71	4	11,69			0,08	0,65	102,48
32	F19x	PZ98	DA01	11,60	11,90	11,70	11,60	4	11,70			0,14	1,21	102,61
33	A89	PZ98	DA01	11,76	11,72	11,77	11,75	4	11,75			0,02	0,19	103,07
34	A39	PZ98	DA02	11,70	11,83	11,80	11,84	4	11,79			0,06	0,54	103,42
35	F22	PZ98	DA02	11,80	12,11	11,80	11,69	4	11,85			0,18	1,53	103,92
36	A49x	PZ98	DA99	11,70	*13,1a*	12,00	11,90	3	11,87			0,15	1,29	104,07
37	F32x	PZ98	DA01	12,00	11,90	11,90	12,00	4	11,95			0,06	0,48	104,80
38	A60	PZ98	DA02	12,54	12,32	12,03	11,27	4	12,04			0,55	4,60	105,59
39	F33x	PZ98	DA02	12,04	12,35	12,35	11,94	4	12,17			0,21	1,74	106,73
40	F08x	PZ98	DA01	12,39	12,61	11,86	11,86	4	12,18			0,38	3,12	106,81
41	A58x	PZ98	DA99	12,76	12,80	12,81	12,82	0	12,80	*b*	*	0,03	0,21	112,23
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	N	Mean	SI	VI
all labs	159	**11,40**	**0,183**	**1,604**
10	% from the mean			
	L		SR	VR
	40		**0,404**	**3,541**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: N **Sample: 4** Unit: mg/g

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	S18	PZ98	DA01	12,32	12,30	12,29	12,34	4	12,31	0,02	0,18	92,12
2	A65	PZ98	DA02	12,10	12,00	12,00	13,30	4	12,35	0,64	5,14	92,40
3	A62x	PZ98	DA01	12,40	12,30	12,40	12,30	4	12,35	0,06	0,47	92,40
4	F25	PZ98	DA01	12,52	12,47	12,58	12,55	4	12,53	0,05	0,37	93,75
5	A59x	PZ98	DA02	12,68	12,72	12,74	12,71	4	12,71	0,03	0,20	95,11
6	F14x	PZ98	DA01	12,79	12,90	13,11	12,57	4	12,84	0,23	1,75	96,09
7	A56	PZ98	DA02	13,04	13,11	13,20	12,84	4	13,05	0,15	1,17	97,62
8	F24x	PB08	DZ02	13,03	13,05	13,12	13,09	4	13,07	0,04	0,31	97,81
9	A37	PZ99	DZ99	13,11	12,90	13,30	13,03	4	13,09	0,17	1,28	97,90
10	A57	PZ98	DA01	13,13	12,69	13,28	13,24	4	13,09	0,27	2,07	97,90
11	A82	PZ98	DA02	13,70	13,20	12,60	12,90	4	13,10	0,47	3,58	98,01
12	F16x	PC01	DB08	13,34	13,09	12,97	13,21	4	13,15	0,16	1,21	98,40
13	F33x	PZ98	DA02	13,39	13,39	13,08	12,87	4	13,18	0,25	1,93	98,63
14	F21	PZ98	DA01	13,18	13,23	13,10	13,26	4	13,19	0,07	0,53	98,70
15	F13x	PZ98	DA01	13,40	13,30	13,20	13,20	4	13,28	0,10	0,72	99,32
16	F26x	PB08	DZ02	13,29	13,30	13,30	13,30	4	13,30	0,01	0,04	99,49
17	F15x	PZ98	DA01	13,38	13,23	13,41	13,27	4	13,32	0,09	0,65	99,68
18	F07x	PZ98	DA01	13,70	13,27	13,20	13,21	4	13,35	0,24	1,79	99,84
19	F12x	PZ98	DA02	13,26	13,33	13,33	13,48	4	13,35	0,09	0,69	99,88
20	A55	PZ98	DA01	13,50	13,00	13,90	13,10	4	13,38	0,41	3,08	100,07
21	A36	PB07	DZ02	13,44	13,43	13,41	13,31	4	13,40	0,06	0,45	100,24
22	A45x	PZ98	DA01	13,50	13,30	13,40	13,40	4	13,40	0,08	0,61	100,26
23	F03	PB07	DZ02	13,48	13,50	13,43	13,22	4	13,41	0,13	0,96	100,31
24	F05x	PZ98	DA01	13,40	13,40	13,40	13,50	4	13,43	0,05	0,37	100,44
25	A42	PZ98	DA01	13,35	13,39	13,49	13,48	4	13,43	0,07	0,51	100,46
26	A60	PZ98	DA02	13,29	13,27	13,57	13,61	4	13,44	0,18	1,34	100,52
27	F02x	PZ98	DA01	13,52	13,49	13,35	13,44	4	13,45	0,07	0,55	100,63
28	A61x	PZ98	DA02	13,46	13,25	13,66	13,54	4	13,48	0,17	1,28	100,84
29	F19x	PZ98	DA01	13,40	13,80	13,30	13,60	4	13,53	0,22	1,64	101,19
30	A39	PZ98	DA02	13,53	13,61	13,64	13,51	4	13,57	0,06	0,46	101,55
31	A51	PZ98	DA02	13,54	13,63	13,56	13,56	4	13,57	0,04	0,29	101,55
32	F27x	PZ98	DA01	13,35	13,67	13,67	13,89	4	13,65	0,22	1,63	102,09
33	F22	PZ98	DA02	13,71	13,71	13,69	13,50	4	13,65	0,10	0,75	102,15
34	A89	PZ98	DA01	13,92	13,90	13,91	13,93	4	13,92	0,01	0,10	104,13
35	F01x	PB07	DZ02	13,88	14,00	14,03	13,94	4	13,96	0,07	0,48	104,46
36	F08x	PZ98	DA01	13,95	14,27	13,73	13,95	4	13,98	0,22	1,58	104,56
37	F18x	PB07	DZ02	13,80	14,00	14,10	14,00	4	13,98	0,13	0,90	104,56
38	F32x	PZ98	DA01	14,10	14,20	14,10	14,00	4	14,10	0,08	0,58	105,49
39	A49x	PZ98	DA99	14,10	14,10	14,30	14,30	4	14,20	0,12	0,81	106,24
40	A43	PB07	DZ02	14,25	14,83	13,22	14,60	4	14,23	0,71	5,00	106,43
41	A58x	PZ98	DA99	14,28	14,20	14,27	14,34	4	14,27	0,06	0,40	106,78
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	N	Mean	SI	VI
all labs	164	**13,37**	**0,156**	**1,164**
10	% from the mean			
	L		SR	VR
	41		**0,490**	**3,669**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: S **Sample: 1** Unit: mg/g

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	A62x	PZ98	DA01	1,43	1,53	1,60	1,53	4	1,52	0,07	4,59	87,74
2	A59x	PC01	DB08	1,54	1,55	1,52	1,53	4	1,54	0,01	0,84	88,46
3	F27x	PZ98	DA01	1,52	1,58	1,47	1,58	4	1,54	0,05	3,37	88,49
4	A39	PD02	DB08	1,52	1,57	1,51	1,56	4	1,54	0,03	1,88	88,76
5	A56	PC01	DB08	1,60	1,60	1,59	1,57	4	1,59	0,01	0,86	91,71
6	F13x	PZ02	DD01	1,61	1,60	1,61	1,64	4	1,62	0,02	1,07	93,07
7	F18x	PD01	DB08	1,63	1,63	1,63	1,60	4	1,62	0,01	0,92	93,50
8	F02x	PZ98	DA01	1,66	1,70	1,67	1,64	4	1,67	0,03	1,50	96,09
9	F07x	PC01	DB08	1,71	1,75	1,61	1,62	4	1,67	0,07	4,24	96,45
10	A36	PD02	DB08	1,66	1,63	1,64	1,78	4	1,68	0,07	4,14	96,67
11	F19x	PD02	DB08	1,69	1,68	1,68	1,71	4	1,69	0,01	0,84	97,39
12	F14x	PC01	DB08	1,70	1,70	1,68	1,70	4	1,69	0,01	0,59	97,63
13	A61x	PD01	DB08	1,69	1,76	1,64	1,70	4	1,70	0,05	2,90	97,82
14	A82	PC01	DB08	1,72	1,70	1,66	1,71	4	1,70	0,03	1,55	97,82
15	F20x	PD02	DB08	1,70	1,69	1,70	1,71	4	1,70	0,01	0,48	97,96
16	A57	PZ98	DD02	1,71	1,72	1,72	1,71	4	1,72	0,01	0,34	98,83
17	A53	PZ02	DD02	1,73	1,73	1,73	1,73	4	1,73	0,00	0,00	99,69
18	F03	PD02	DB08	1,73	1,72	1,73	1,75	4	1,73	0,01	0,71	99,77
19	F12x	PC01	DB08	1,74	1,73	1,75	1,72	4	1,74	0,01	0,74	99,98
20	A58x	PZ98	DA99	1,78	1,69	1,76	1,72	4	1,74	0,04	2,32	100,13
21	A65	PD01	DB08	1,75	1,76	1,73	1,73	4	1,74	0,02	0,86	100,41
22	A51	PD02	DB08	1,97	1,69	1,70	1,66	4	1,75	0,15	8,38	100,98
23	A55	PC01	DB08	1,75	1,76	1,76	1,74	4	1,76	0,01	0,57	101,14
24	A49x	PD05	DB08	1,78	1,81	1,79	1,65	4	1,76	0,07	4,14	101,28
25	F15x	PC01	DB08	1,74	1,76	1,79	1,74	4	1,76	0,02	1,34	101,28
26	A45x	PB05	DB08	1,77	1,76	1,75	1,76	4	1,76	0,01	0,46	101,42
27	F08x	PC01	DB09	1,75	1,76	1,78	1,77	4	1,76	0,01	0,78	101,47
28	A79	PD03	DB10	1,81	1,77	1,79	1,80	4	1,79	0,02	0,87	103,34
29	F16x	PC01	DB08	1,76	1,80	1,76	1,86	4	1,79	0,05	2,60	103,41
30	A60x	PD01	DB10	1,73	1,85	1,79	1,86	4	1,81	0,06	3,32	104,06
31	F32x	PD01	DB08	1,80	1,81	1,81	1,81	4	1,81	0,01	0,28	104,16
32	F25	PB06	DB08	1,82	1,83	1,79	1,79	4	1,81	0,02	1,14	104,16
33	F05x	PZ98	DA01	1,82	1,82	1,80	1,83	4	1,82	0,01	0,69	104,74
34	A89	PZ98	DA01	1,82	1,83	1,84	1,82	4	1,83	0,01	0,55	105,44
35	F22	PD02	DB10	1,89	1,80	1,82	1,87	4	1,85	0,04	2,07	106,35
36	F33x	PD01	DB10	1,84	1,88	1,93	1,98	4	1,91	0,06	3,19	109,92
37	F09	PZ02	DD02	1,92	1,92	1,93	1,93	4	1,93	0,00	0,22	110,97
38	F24x	PZ98	DA01	1,94	1,94	1,96	2,01	4	1,96	0,03	1,74	112,99
39	S18	PB03	DB08	2,04	2,05	1,90	1,96	4	1,99	0,07	3,67	114,53
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	N	Mean	SI	VI
all labs	156	**1,74**	**0,031**	**1,810**
15	% from the mean			
	L		SR	VR
	39		**0,111**	**6,372**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: S **Sample: 2** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F25	PB06	DB08	0,32	0,32	0,32	*0,31a*	3	0,32		*	0,00	0,00	77,43
2	F09	PZ02	DD02	0,34	0,35	0,35	0,35	4	0,35			0,01	1,70	84,32
3	F13x	PZ02	DD01	0,36	0,36	0,36	0,36	4	0,36			0,00	0,23	87,10
4	F22	PD02	DB10	0,37	0,36	0,37	0,37	4	0,37			0,01	1,80	88,56
5	A59x	PC01	DB08	0,37	0,37	0,37	0,38	4	0,37			0,01	1,34	90,13
6	A58x	PZ98	DA99	0,33	0,37	0,39	0,40	4	0,37			0,03	8,31	90,13
7	F14x	PC01	DB08	0,38	0,37	0,37	0,38	4	0,37			0,00	0,59	90,67
8	A39	PD02	DB08	0,37	0,39	0,38	0,39	4	0,38			0,01	2,29	92,55
9	A60x	PD01	DB10	0,41	0,38	0,39	0,39	4	0,39			0,01	3,42	95,03
10	F18x	PD01	DB08	0,39	0,39	0,39	0,41	4	0,39			0,01	2,09	95,27
11	A62x	PZ98	DA01	0,37	0,33	0,48	0,42	4	0,40			0,06	16,20	96,78
12	F24x	PZ98	DA01	0,40	0,40	0,40	0,40	4	0,40			0,00	0,54	96,78
13	A79	PD03	DB10	0,40	0,41	0,40	0,39	4	0,40			0,01	1,64	96,90
14	F07x	PC01	DB08	0,40	0,42	0,40	0,38	4	0,40			0,01	3,63	96,96
15	F03	PD02	DB08	0,42	0,40	0,40	0,41	4	0,41			0,01	2,02	98,84
16	F08x	PC01	DB09	0,41	0,43	0,40	0,41	4	0,41			0,01	3,30	98,96
17	F12x	PC01	DB08	0,41	0,41	0,41	0,41	4	0,41			0,00	0,00	99,20
18	F02x	PZ98	DA01	0,45	0,42	0,41	0,37	4	0,41			0,03	8,20	99,38
19	F20x	PD02	DB08	0,40	0,41	0,42	0,41	4	0,41			0,01	1,32	99,56
20	A36	PD02	DB08	0,40	0,39	0,40	0,46	4	0,41			0,03	8,26	99,69
21	F19x	PD02	DB08	0,41	0,42	0,42	0,42	4	0,42			0,01	1,50	101,02
22	A82	PC01	DB08	0,38	0,42	0,44	0,43	4	0,42			0,03	6,30	101,02
23	A56	PC01	DB08	0,42	0,43	0,43	0,40	4	0,42			0,01	2,68	101,56
24	A61x	PD01	DB08	0,41	0,44	0,41	0,42	4	0,42			0,01	3,37	101,62
25	F16x	PC01	DB08	0,42	0,42	0,42	0,43	4	0,42			0,00	1,18	101,80
26	A55	PC01	DB08	0,43	0,42	0,41	0,43	4	0,42			0,01	2,14	102,59
27	A45x	PB05	DB08	0,44	0,44	0,42	0,42	4	0,43			0,01	1,75	104,04
28	A65	PD01	DB08	0,42	0,44	0,45	0,42	4	0,43			0,02	3,47	104,65
29	F27x	PZ98	DA01	0,53	0,38	0,50	0,33	0	0,43	*c*		0,09	21,79	105,13
30	F32x	PD01	DB08	0,43	0,44	0,44	0,45	4	0,44			0,01	2,03	105,67
31	A49x	PD05	DB08	0,42	0,44	0,47	0,44	4	0,44			0,02	4,16	106,64
32	F15x	PC01	DB08	0,45	0,41	0,43	0,48	4	0,44			0,03	6,75	107,07
33	S18	PB03	DB08	0,46	0,49	0,41	0,43	4	0,45			0,03	7,54	107,67
34	F05x	PZ98	DA01	0,47	0,45	0,45	0,46	4	0,46			0,01	1,90	110,21
35	F33x	PD01	DB10	0,43	0,46	0,49	0,46	4	0,46			0,02	4,80	111,18
36	A53	PZ02	DD02	0,47	0,47	0,46	0,47	4	0,47			0,01	1,25	113,42
37	A51	PD02	DB08	0,48	0,44	0,48	0,50	4	0,47			0,02	4,96	114,75
38	A57	PZ98	DD02	0,52	0,51	0,53	0,51	4	0,52		*	0,01	1,85	125,21
39	A89	PZ98	DA01	0,55	0,54	0,53	0,54	0	0,54	*b*	*	0,01	1,69	131,08
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	N	Mean	SI	VI
all labs	147	**0,41**	**0,014**	**3,398**
20	% from the mean			
	L		SR	VR
	37		**0,038**	**9,115**

* = non tolerable mean because more than +/-

limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: S **Sample: 3** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F13x	PZ02	DD01	0,62	0,62	0,62	0,63	0	0,62	*b*	*	0,01	0,94	72,90
2	A39	PD02	DB08	0,72	0,71	0,71	0,73	4	0,71		*	0,01	1,42	83,67
3	A59x	PC01	DB08	0,72	0,73	0,75	0,72	4	0,73			0,01	1,94	85,45
4	A56	PC01	DB08	0,78	0,77	0,76	0,77	4	0,77			0,01	0,92	90,02
5	F27x	PZ98	DA01	0,78	0,75	0,78	0,81	4	0,78			0,02	3,00	91,10
6	F18x	PD01	DB08	0,79	0,78	0,78	0,79	4	0,78			0,01	0,90	91,54
7	F02x	PZ98	DA01	0,79	0,80	0,79	0,81	4	0,80			0,01	0,97	93,56
8	F07x	PC01	DB08	0,83	0,85	0,76	0,78	4	0,80			0,04	5,56	94,03
9	F19x	PD02	DB08	0,81	0,80	0,81	0,80	4	0,81			0,00	0,43	94,32
10	A62x	PZ98	DA01	0,83	0,87	0,82	0,73	4	0,81			0,06	7,27	95,11
11	F14x	PC01	DB08	0,81	0,81	0,82	0,82	4	0,81			0,01	0,63	95,29
12	F03	PD02	DB08	0,83	0,83	0,81	0,81	4	0,82			0,01	1,25	95,90
13	A61x	PD01	DB08	0,85	0,83	0,78	0,82	4	0,82			0,03	3,59	95,99
14	A82	PC01	DB08	0,82	0,83	0,84	0,82	4	0,83			0,01	1,16	96,87
15	A36	PD02	DB08	0,80	0,79	0,81	0,92	4	0,83			0,06	7,39	96,99
16	F12x	PC01	DB08	0,83	0,83	0,83	0,83	4	0,83			0,00	0,00	97,16
17	F20x	PD02	DB08	0,83	0,83	0,83	0,84	4	0,83			0,01	0,88	97,54
18	A60x	PD01	DB10	0,82	0,87	0,85	0,81	4	0,84			0,03	3,06	97,95
19	F15x	PC01	DB08	0,84	0,84	0,84	0,85	4	0,84			0,01	0,59	98,62
20	A45x	PB05	DB08	0,84	0,85	0,84	0,84	4	0,84			0,00	0,45	98,71
21	A65	PD01	DB08	0,86	0,84	0,85	0,84	4	0,85			0,01	1,13	99,21
22	S18	PB03	DB08	0,88	0,83	0,85	0,84	4	0,85			0,02	2,67	99,27
23	A79	PD03	DB10	0,89	0,83	0,88	0,87	4	0,87			0,03	3,04	101,61
24	A55	PC01	DB08	0,87	0,87	0,87	0,87	4	0,87			0,00	0,20	101,69
25	F22	PD02	DB10	0,90	0,84	0,88	0,86	4	0,87			0,03	3,00	101,93
26	A53	PZ02	DD02	0,87	0,88	0,87	0,86	4	0,87			0,01	0,82	101,96
27	F09	PZ02	DD02	0,88	0,87	0,88	0,87	4	0,87			0,00	0,49	102,19
28	A57	PZ98	DD02	0,86	0,90	0,86	0,88	4	0,88			0,02	2,19	102,43
29	F25	PB06	DB08	0,87	0,88	0,88	0,88	4	0,88			0,01	0,57	102,72
30	F08x	PC01	DB09	0,88	0,90	0,89	0,88	4	0,88			0,01	1,14	103,48
31	A58x	PZ98	DA99	0,88	0,93	0,85	0,88	4	0,89			0,03	3,75	103,60
32	F16x	PC01	DB08	0,88	0,89	0,88	0,90	4	0,89			0,01	0,81	103,94
33	F32x	PD01	DB08	0,88	0,89	0,90	0,89	4	0,89			0,01	0,92	104,04
34	F05x	PZ98	DA01	0,92	0,93	0,94	0,95	4	0,94			0,02	1,71	109,51
35	A49x	PD05	DB08	0,84	0,87	1,01	1,03	4	0,94			0,10	10,28	109,74
36	A51	PD02	DB08	0,96	0,98	0,97	0,99	4	0,97			0,01	1,23	113,67
37	F24x	PZ98	DA01	0,95	0,99	0,99	0,99	4	0,98			0,02	2,22	114,54
38	F33x	PD01	DB10	1,03	1,08	0,99	0,90	4	1,00		*	0,08	7,62	117,06
39	A89	PZ98	DA01	1,01	0,99	1,01	1,02	4	1,00		*	0,01	1,36	117,56
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	N	Mean	SI	VI
all labs	152	**0,85**	**0,020**	**2,312**
15	% from the mean			
	L		SR	VR
	38		**0,066**	**7,763**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: S **Sample: 4** Unit: mg/g

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	A39	PD02	DB08	0,80	0,77	0,80	0,78	4	0,79	*	0,02	1,93	84,74
2	A59x	PC01	DB08	0,83	0,79	0,83	0,79	4	0,81		0,02	2,85	87,36
3	A56	PC01	DB08	0,83	0,84	0,82	0,84	4	0,83		0,01	0,83	89,76
4	F13x	PZ02	DD01	0,83	0,85	0,84	0,85	4	0,84		0,01	1,03	90,81
5	F22	PD02	DB10	0,85	0,90	0,87	0,88	4	0,88		0,02	2,13	94,48
6	F18x	PD01	DB08	0,88	0,88	0,89	0,87	4	0,88		0,01	0,75	94,83
7	F16x	PC01	DB08	0,87	0,92	0,86	0,87	4	0,88		0,03	3,33	94,92
8	F19x	PD02	DB08	0,88	0,89	0,89	0,88	4	0,88		0,01	0,76	95,37
9	F02x	PZ98	DA01	0,89	0,89	0,88	0,89	4	0,89		0,01	0,58	95,83
10	A79	PD03	DB10	0,90	0,87	0,89	0,90	4	0,89		0,01	1,51	95,96
11	F27x	PZ98	DA01	0,83	0,97	0,95	0,83	4	0,90		0,08	8,45	96,55
12	F07x	PC01	DB08	0,91	0,92	0,87	0,88	4	0,90		0,03	2,90	96,58
13	F14x	PC01	DB08	0,90	0,89	0,90	0,89	4	0,90		0,01	0,72	96,64
14	A61x	PD01	DB08	0,91	0,89	0,89	0,90	4	0,90		0,01	1,07	96,80
15	F03	PD02	DB08	0,89	0,91	0,90	0,90	4	0,90		0,00	0,52	96,93
16	A36	PD02	DB08	0,89	0,88	0,90	0,97	4	0,91		0,04	4,71	98,28
17	F12x	PC01	DB08	0,92	0,91	0,94	0,89	4	0,92		0,02	2,28	98,68
18	A45x	PB05	DB08	0,92	0,94	0,91	0,92	4	0,92		0,01	1,14	99,47
19	A65	PD01	DB08	0,92	0,92	0,93	0,92	4	0,92		0,01	0,54	99,49
20	F20x	PD02	DB08	0,92	0,92	0,93	0,92	4	0,92		0,00	0,45	99,52
21	A82	PC01	DB08	0,93	0,94	0,94	0,93	4	0,94		0,01	0,62	100,84
22	A55	PC01	DB08	0,93	0,94	0,94	0,94	4	0,94		0,00	0,42	101,05
23	F15x	PC01	DB08	0,94	0,95	0,93	0,93	4	0,94		0,01	1,02	101,11
24	A62x	PZ98	DA01	0,89	0,98	0,97	0,94	4	0,95		0,04	4,28	101,92
25	A53	PZ02	DD02	0,95	0,95	0,95	0,94	4	0,95		0,00	0,27	102,19
26	F25	PB06	DB08	0,95	0,94	0,94	0,96	4	0,95		0,01	1,01	102,19
27	A57	PZ98	DD02	0,94	0,96	0,95	0,95	4	0,95		0,01	0,86	102,46
28	A60x	PD01	DB10	0,97	0,97	0,94	0,93	4	0,96		0,02	2,26	103,05
29	A49x	PD05	DB08	1,00	0,93	1,02	0,89	4	0,96		0,06	6,31	103,54
30	F05x	PZ98	DA01	0,95	0,96	0,97	0,97	4	0,96		0,01	0,99	103,83
31	F09	PZ02	DD02	0,96	0,97	0,97	0,97	4	0,97		0,01	0,57	104,35
32	F08x	PC01	DB09	0,96	0,98	0,99	0,97	4	0,97		0,01	1,41	104,72
33	A51	PD02	DB08	0,99	0,97	0,99	1,00	4	0,99		0,01	1,25	106,48
34	A58x	PZ98	DA99	1,00	0,99	*1,09a*	1,00	3	1,00		0,01	0,58	107,49
35	F32x	PD01	DB08	1,01	1,00	1,01	1,00	4	1,01		0,01	0,57	108,39
36	S18	PB03	DB08	0,99	1,14	1,04	1,05	4	1,05		0,06	5,95	113,73
37	F24x	PZ98	DA01	1,05	1,07	1,07	1,07	4	1,06		0,01	0,78	114,78
38	F33x	PD01	DB10	1,08	1,10	1,14	1,01	4	1,08	*	0,05	5,02	116,75
39	A89	PZ98	DA01	1,17	1,18	1,16	1,17	0	1,17	*b* *	0,01	0,75	126,27
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	N	Mean	SI	VI
all labs	151	**0,93**	**0,018**	**1,929**
15	% from the mean			
	L		SR	VR
	38		**0,064**	**6,847**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: P **Sample: 1** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F21	PD01	DE01	0,96	0,95	0,96	0,95	0	0,96	*b*	*	0,01	0,60	81,40
2	A62x	PB99	DE01	1,02	0,99	1,06	0,99	4	1,02		*	0,03	3,27	86,51
3	A43	PB06	DE01	1,08	1,10	*0,987a*	1,10	3	1,09			0,01	0,96	93,08
4	F13x	PZ02	DD01	1,11	1,09	1,08	1,11	4	1,10			0,02	1,37	93,54
5	A59x	PC01	DB08	1,09	1,09	1,11	1,11	4	1,10			0,01	1,05	93,76
6	A61x	PB02	DB08	1,14	1,10	1,08	1,08	4	1,10			0,03	2,57	93,76
7	F02x	PD02	DB08	1,11	1,09	1,13	1,09	4	1,11			0,02	1,73	94,18
8	A56	PC01	DB08	1,11	1,12	1,10	1,09	4	1,11			0,01	1,09	94,27
9	F12x	PC01	DB08	1,14	1,13	1,14	1,12	4	1,13			0,01	0,85	96,53
10	A36	PD02	DB08	1,13	1,13	1,12	1,15	4	1,13			0,01	1,11	96,53
11	A89	PD02	DB08	1,13	1,13	1,13	1,13	4	1,13			0,00	0,09	96,61
12	A39	PD02	DB08	1,12	1,15	1,13	1,15	4	1,14			0,01	1,29	97,12
13	A45x	PZ99	DB08	1,13	1,14	1,15	1,14	4	1,14			0,01	0,72	97,17
14	A49x	PD05	DB08	1,19	1,14	1,16	1,09	4	1,15			0,04	3,67	97,59
15	F27x	PD01	DE01	1,13	1,13	1,16	1,16	4	1,15			0,02	1,46	97,72
16	F03	PD02	DB08	1,11	1,17	1,16	1,15	4	1,15			0,03	2,29	97,81
17	F07x	PC01	DB08	1,21	1,16	1,07	1,15	4	1,15			0,06	5,04	97,87
18	F33x	PD01	DB10	1,12	1,14	1,20	1,15	4	1,15			0,03	2,95	98,23
19	F05x	PD02	DB08	1,16	1,16	1,16	1,16	4	1,16			0,00	0,00	98,87
20	F19x	PD02	DB08	1,18	1,16	1,17	1,17	4	1,17			0,01	0,70	99,72
21	F20x	PD02	DB08	1,17	1,17	1,17	1,18	4	1,17			0,01	0,43	99,94
22	F18x	PD01	DB08	1,18	1,17	1,17	1,18	4	1,18			0,01	0,49	100,15
23	F01x	PB04	DE01	1,20	1,17	1,19	1,16	4	1,18			0,02	1,55	100,58
24	A57	PZ98	DD02	1,18	1,19	1,19	1,16	4	1,18			0,01	1,20	100,58
25	F24x	PB03	DE01	1,20	1,19	1,18	1,16	4	1,18			0,02	1,60	100,75
26	A58x	PD02	DE01	1,18	1,19	1,19	1,18	4	1,19			0,01	0,49	101,00
27	F15x	PC01	DB08	1,17	1,20	1,21	1,18	4	1,19			0,02	1,53	101,43
28	A55	PC01	DB08	1,15	1,20	1,20	1,21	4	1,19			0,03	2,28	101,51
29	A51	PD02	DB08	1,17	1,19	1,20	1,22	4	1,19			0,02	1,90	101,75
30	F14x	PC01	DB08	1,20	1,20	1,19	1,20	4	1,20			0,01	0,52	101,96
31	A53	PZ02	DD01	1,20	1,20	1,20	1,20	4	1,20			0,00	0,00	102,28
32	F16x	PC01	DB08	1,19	1,25	1,21	1,16	4	1,20			0,04	3,00	102,52
33	A65	PD01	DB08	1,21	1,22	1,19	1,20	4	1,21			0,01	1,07	102,71
34	F25	PB06	DB08	1,21	1,22	1,22	1,20	4	1,21			0,01	0,79	103,35
35	A37	PZ99	DZ99	1,24	1,20	1,24	1,21	4	1,22			0,02	1,69	104,20
36	A82	PC01	DB08	1,26	1,24	1,22	1,25	4	1,24			0,02	1,37	105,90
37	F08x	PC01	DB09	1,28	1,27	1,23	1,26	4	1,26			0,02	1,46	107,22
38	F22	PD02	DB10	1,31	1,22	1,24	1,28	4	1,26			0,04	3,21	107,57
39	A60x	PD01	DB10	1,24	1,28	1,26	1,28	4	1,27			0,02	1,68	107,86
40	S18	PB03	DB08	1,28	1,28	1,25	1,25	4	1,27			0,02	1,24	107,97
41	F32x	PD01	DB08	1,26	1,27	1,27	1,27	4	1,27			0,01	0,39	108,03
42	F09	PZ02	DD02	1,26	1,26	1,27	1,28	4	1,27			0,01	0,80	108,14
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	N	Mean	SI	VI
all labs	163	**1,17**	**0,017**	**1,476**
10	% from the mean			
	L		SR	VR
	41		**0,057**	**4,887**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: P **Sample: 2** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean		Lab.standard dev. Si	Vi	Recovery %
1	F22	PD02	DB10	0,10	0,11	0,10	0,10	4	0,10	*	0,00	2,17	71,00
2	F25	PB06	DB08	0,11	0,11	0,11	0,11	4	0,11	*	0,00	0,00	76,38
3	F33x	PD01	DB10	0,12	0,12	0,14	0,12	4	0,12		0,01	9,15	85,93
4	S18	PB03	DB08	0,13	0,13	0,12	0,12	4	0,12		0,00	3,18	86,28
5	F07x	PC01	DB08	0,12	0,13	0,12	0,13	4	0,12		0,00	3,04	86,28
6	F02x	PD02	DB08	0,13	0,13	0,12	0,12	4	0,13		0,01	4,62	86,80
7	A36	PD02	DB08	0,13	0,13	0,13	0,12	4	0,13		0,00	3,79	87,67
8	F21	PD01	DE01	0,13	0,12	0,13	0,13	4	0,13		0,01	3,92	88,53
9	A49x	PD05	DB08	0,12	0,13	0,13	0,13	4	0,13		0,01	4,41	89,40
10	A45x	PZ99	DB08	0,13	0,13	0,13	0,13	4	0,13		0,00	0,90	89,58
11	F05x	PD02	DB08	0,13	0,13	0,13	0,13	4	0,13		0,00	1,60	89,75
12	F27x	PD01	DE01	0,12	0,14	0,12	0,15	4	0,13		0,01	9,02	91,83
13	F12x	PC01	DB08	0,13	0,14	0,13	0,13	4	0,13		0,01	3,77	92,01
14	F20x	PD02	DB08	0,13	0,13	0,14	0,13	4	0,13		0,00	1,80	92,01
15	F01x	PB04	DE01	0,14	0,13	0,14	0,13	4	0,14		0,01	4,28	93,74
16	A59x	PC01	DB08	0,14	0,13	0,13	0,14	4	0,14		0,01	4,28	93,74
17	F16x	PC01	DB08	0,13	0,14	0,14	0,14	4	0,14		0,00	1,64	94,12
18	F19x	PD02	DB08	0,14	0,14	0,14	0,14	4	0,14		0,00	0,70	95,30
19	A56	PC01	DB08	0,14	0,13	0,14	0,14	4	0,14		0,01	3,71	96,00
20	F14x	PC01	DB08	0,14	0,14	0,14	0,14	4	0,14		0,00	1,01	97,21
21	A60x	PD01	DB10	0,14	0,13	0,15	0,14	4	0,14		0,01	5,38	97,39
22	A51	PD02	DB08	0,14	0,14	0,14	0,14	4	0,14		0,00	1,46	97,73
23	A55	PC01	DB08	0,14	0,14	0,14	0,14	4	0,14		0,00	2,38	98,05
24	A89	PD02	DB08	0,15	0,14	0,14	0,15	4	0,14		0,00	3,47	98,43
25	F03	PD02	DB08	0,14	0,14	0,15	0,14	4	0,14		0,00	3,51	98,95
26	A37	PZ99	DZ99	0,14	0,15	0,14	0,14	4	0,14		0,00	3,51	98,95
27	F15x	PC01	DB08	0,15	0,13	0,14	0,15	4	0,14		0,01	6,49	99,99
28	A65	PD01	DB08	0,14	0,15	0,15	0,14	4	0,15		0,01	3,98	100,69
29	F18x	PD01	DB08	0,14	0,15	0,14	0,15	4	0,15		0,00	2,26	101,55
30	A43	PB06	DE01	0,16	0,15	0,14	0,15	4	0,15		0,01	5,24	102,07
31	A82	PC01	DB08	0,13	0,15	0,16	0,15	4	0,15		0,01	8,53	102,42
32	A61x	PB02	DB08	0,14	0,15	0,15	0,15	4	0,15		0,00	3,39	102,42
33	F32x	PD01	DB08	0,15	0,15	0,15	0,15	4	0,15		0,00	0,38	104,50
34	A62x	PB99	DE01	0,16	0,19	0,16	0,16	4	0,17	*	0,01	8,96	116,31
35	F08x	PC01	DB09	0,17	0,16	0,16	0,18	4	0,17	*	0,01	6,26	116,83
36	A53	PZ02	DD01	0,19	0,19	0,18	0,19	4	0,19	*	0,00	1,35	128,63
37	F09	PZ02	DD02	0,19	0,19	0,19	0,19	4	0,19	*	0,00	1,14	131,24
38	A58x	PD02	DE01	0,19	0,20	0,20	0,20	4	0,20	*	0,01	2,53	137,14
39	F24x	PB03	DE01	0,21	0,21	0,20	0,19	4	0,20	*	0,01	5,04	140,79
40	A57	PZ98	DD02	0,21	0,20	0,21	0,20	4	0,21	*	0,01	2,82	142,35
41	A39	PD02	DB08	1,28	1,28	1,31	1,30	0	1,29	*b* *	0,01	1,15	896,80
42													
43													
44	F13x	PZ02	DD01	<,5	<,5	<,5	<,5			**			
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	N	Mean	SI	VI
all labs	160	**0,14**	**0,005**	**3,639**
15	% from the mean			
	L		SR	VR
	40		**0,023**	**16,292**

* = non tolerable mean because more than +/-

limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: P **Sample: 3** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F12x	PC01	DB08	0,59	0,58	0,59	0,60	0	0,59	*b*	*	0,01	1,38	74,19
2	F21	PD01	DE01	0,66	0,65	0,65	0,64	4	0,65		*	0,01	1,26	81,73
3	A43	PB06	DE01	0,68	0,67	0,66	0,67	4	0,67		*	0,01	1,22	84,12
4	A62x	PB99	DE01	0,62	0,71	0,71	0,68	4	0,68		*	0,04	6,24	85,50
5	A89	PD02	DB08	0,66	0,72	0,74	0,66	4	0,70		*	0,04	5,93	87,52
6	A39	PD02	DB08	0,74	0,73	0,73	0,74	4	0,73			0,01	0,96	92,36
7	A59x	PC01	DB08	0,73	0,74	0,76	0,73	4	0,74			0,01	1,91	93,05
8	A56	PC01	DB08	0,74	0,75	0,73	0,75	4	0,74			0,01	1,15	93,43
9	A61x	PB02	DB08	0,75	0,74	0,74	0,75	4	0,75			0,01	0,77	93,68
10	F02x	PD02	DB08	0,76	0,74	0,76	0,73	4	0,75			0,02	2,01	93,99
11	A45x	PZ99	DB08	0,76	0,76	0,76	0,76	4	0,76			0,00	0,13	95,53
12	F27x	PD01	DE01	0,76	0,75	0,78	0,79	4	0,77			0,02	2,03	96,51
13	F05x	PD02	DB08	0,77	0,77	0,77	0,77	4	0,77			0,00	0,12	96,92
14	F25	PB06	DB08	0,79	0,79	0,79	0,75	4	0,78			0,02	2,56	98,08
15	F07x	PC01	DB08	0,85	0,80	0,72	0,77	4	0,78			0,05	6,84	98,64
16	A36	PD02	DB08	0,78	0,78	0,79	0,80	4	0,79			0,01	0,92	99,05
17	F16x	PC01	DB08	0,78	0,80	0,78	0,80	4	0,79			0,01	1,35	99,16
18	F33x	PD01	DB10	0,85	0,81	0,76	0,75	4	0,79			0,05	5,88	99,18
19	A55	PC01	DB08	0,81	0,77	0,82	0,77	4	0,79			0,03	3,23	99,33
20	F19x	PD02	DB08	0,79	0,78	0,79	0,79	4	0,79			0,00	0,57	99,43
21	F01x	PB04	DE01	0,79	0,80	0,79	0,80	4	0,80			0,01	0,73	99,97
22	F15x	PC01	DB08	0,80	0,81	0,79	0,81	4	0,80			0,01	0,93	100,69
23	F20x	PD02	DB08	0,80	0,80	0,80	0,81	4	0,80			0,00	0,51	101,10
24	S18	PB03	DB08	0,78	0,80	0,78	0,87	4	0,81			0,05	5,60	101,35
25	A37	PZ99	DZ99	0,81	0,80	0,80	0,82	4	0,81			0,01	1,19	101,54
26	F14x	PC01	DB08	0,81	0,81	0,81	0,82	4	0,81			0,00	0,37	102,04
27	F18x	PD01	DB08	0,82	0,81	0,82	0,81	4	0,82			0,00	0,50	102,61
28	A58x	PD02	DE01	0,82	0,82	0,82	0,81	4	0,82			0,00	0,61	102,79
29	A65	PD01	DB08	0,82	0,82	0,82	0,82	4	0,82			0,00	0,00	103,11
30	F03	PD02	DB08	0,82	0,83	0,82	0,81	4	0,82			0,01	1,00	103,11
31	F24x	PB03	DE01	0,87	0,82	0,80	0,80	4	0,82			0,03	4,20	103,49
32	F22	PD02	DB10	0,82	0,83	0,82	0,83	4	0,83			0,01	0,89	103,77
33	F13x	PZ02	DD01	0,82	0,84	0,82	0,84	4	0,83			0,01	1,57	104,43
34	A60x	PD01	DB10	0,85	0,85	0,84	0,84	4	0,84			0,00	0,58	106,22
35	A51	PD02	DB08	0,86	0,85	0,85	0,85	4	0,85			0,00	0,51	106,76
36	A57	PZ98	DD02	0,85	0,88	0,85	0,85	4	0,86			0,02	1,75	107,82
37	A49x	PD05	DB08	0,80	0,83	0,89	0,93	4	0,86			0,06	6,88	108,61
38	F32x	PD01	DB08	0,87	0,87	0,87	0,87	4	0,87			0,00	0,20	109,05
39	A53	PZ02	DD01	0,87	0,88	0,87	0,87	4	0,87			0,01	0,66	109,52
40	A82	PC01	DB08	0,87	0,89	0,89	0,88	4	0,88		*	0,01	1,08	110,97
41	F08x	PC01	DB09	0,89	0,90	0,88	0,89	4	0,89		*	0,01	0,97	111,50
42	F09	PZ02	DD02	0,89	0,89	0,89	0,90	4	0,89		*	0,01	0,84	112,35
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	N	Mean	SI	VI
all labs	164	**0,80**	**0,015**	**1,840**
10	% from the mean			
	L		SR	VR
	41		**0,058**	**7,272**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: P **Sample: 4** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F12x	PC01	DB08	1,17	1,13	1,14	1,14	0	1,15	*b*	*	0,02	1,51	77,79
2	F21	PD01	DE01	1,21	1,18	1,27	1,22	4	1,22		*	0,04	3,07	82,88
3	A62x	PB99	DE01	1,40	1,27	1,21	1,21	4	1,27		*	0,09	7,04	86,45
4	A39	PD02	DB08	1,38	1,34	1,38	1,36	4	1,36			0,02	1,16	92,67
5	F25	PB06	DB08	1,37	1,34	1,38	1,39	4	1,37			0,02	1,58	93,07
6	A56	PC01	DB08	1,38	1,39	1,38	1,37	4	1,38			0,01	0,37	93,58
7	A59x	PC01	DB08	1,44	1,36	1,43	1,35	4	1,40			0,05	3,34	94,77
8	F02x	PD02	DB08	1,41	1,38	1,38	1,42	4	1,40			0,02	1,48	94,94
9	F27x	PD01	DE01	1,40	1,39	1,44	1,38	4	1,40			0,03	2,01	95,16
10	A89	PD02	DB08	1,40	1,42	1,42	1,39	4	1,41			0,01	0,83	95,52
11	A55	PC01	DB08	1,44	1,45	1,40	1,41	4	1,42			0,02	1,46	96,73
12	A45x	PZ99	DB08	1,42	1,43	1,43	1,42	4	1,43			0,01	0,41	96,81
13	F05x	PD02	DB08	1,42	1,43	1,43	1,42	4	1,43			0,01	0,41	96,81
14	A61x	PB02	DB08	1,46	1,45	1,43	1,39	4	1,43			0,03	2,16	97,32
15	F22	PD02	DB10	1,44	1,45	1,44	1,45	4	1,44			0,01	0,55	98,08
16	F24x	PB03	DE01	1,46	1,44	1,45	1,43	4	1,45			0,02	1,16	98,17
17	A36	PD02	DB08	1,45	1,45	1,47	1,45	4	1,46			0,01	0,69	98,85
18	F19x	PD02	DB08	1,44	1,45	1,47	1,47	4	1,46			0,02	1,03	99,02
19	F01x	PB04	DE01	1,46	1,45	1,47	1,46	4	1,46			0,01	0,56	99,19
20	F07x	PC01	DB08	1,54	1,44	1,37	1,49	4	1,46			0,07	4,80	99,21
21	F14x	PC01	DB08	1,48	1,47	1,46	1,46	4	1,46			0,01	0,60	99,44
22	A49x	PD05	DB08	1,44	1,48	1,45	1,49	4	1,47			0,02	1,62	99,53
23	A43	PB06	DE01	1,40	1,53	1,45	1,50	4	1,47			0,06	3,80	99,87
24	A37	PZ99	DZ99	1,48	1,48	1,47	1,47	4	1,48			0,01	0,39	100,21
25	A58x	PD02	DE01	1,49	1,49	1,48	1,49	4	1,49			0,01	0,34	101,06
26	F03	PD02	DB08	1,49	1,49	1,48	1,50	4	1,49			0,01	0,55	101,23
27	F20x	PD02	DB08	1,49	1,50	1,50	1,48	4	1,49			0,01	0,64	101,40
28	F33x	PD01	DB10	1,41	1,43	1,59	1,55	4	1,50			0,09	5,92	101,57
29	F16x	PC01	DB08	1,48	1,44	1,56	1,51	4	1,50			0,05	3,49	101,77
30	F15x	PC01	DB08	1,50	1,52	1,48	1,52	4	1,51			0,02	1,27	102,25
31	F18x	PD01	DB08	1,51	1,50	1,51	1,50	4	1,51			0,01	0,38	102,25
32	A65	PD01	DB08	1,50	1,50	1,52	1,51	4	1,51			0,01	0,64	102,42
33	A57	PZ98	DD02	1,50	1,53	1,52	1,48	4	1,51			0,02	1,47	102,42
34	A51	PD02	DB08	1,49	1,52	1,52	1,54	4	1,51			0,02	1,39	102,87
35	A53	PZ02	DD01	1,55	1,55	1,55	1,54	4	1,55			0,01	0,32	105,13
36	S18	PB03	DB08	1,57	1,38	1,55	1,78	4	1,57			0,17	10,55	106,51
37	F13x	PZ02	DD01	1,55	1,59	1,59	1,61	4	1,59			0,03	1,59	107,68
38	F09	PZ02	DD02	1,59	1,62	1,62	1,59	4	1,61			0,02	1,02	109,04
39	A60x	PD01	DB10	1,62	1,63	1,57	1,62	4	1,61			0,03	1,66	109,41
40	F08x	PC01	DB09	1,63	1,59	1,61	1,62	4	1,61			0,02	1,14	109,51
41	F32x	PD01	DB08	1,63	1,64	1,64	1,62	4	1,63		*	0,01	0,59	110,91
42	A82	PC01	DB08	1,68	1,69	1,69	1,67	4	1,68		*	0,01	0,57	114,30
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	N	Mean	SI	VI
all labs	164	**1,47**	**0,026**	**1,788**
10	% from the mean			
	L		SR	VR
	41		**0,091**	**6,160**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Ca **Sample: 1** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	F21	PD01	DB01	10,18	*9,93a*	10,26	10,23	0	10,22	*b*	*	0,04	0,40	82,33
2	A62x	PD02	DB01	10,44	11,57	9,37	10,73	0	10,53	*b*	*	0,91	8,63	84,78
3	A43	PB06	DB01	11,48	11,53	11,48	11,50	4	11,50			0,02	0,21	92,59
4	A59x	PC01	DB08	11,47	11,59	11,65	11,47	4	11,55			0,09	0,78	92,97
5	A79	PD03	DB10	11,73	11,74	11,53	11,81	4	11,70			0,12	1,03	94,24
6	A61x	PB02	DB08	11,68	11,91	11,68	11,95	4	11,81			0,15	1,23	95,07
7	F02x	PD02	DB08	11,79	12,08	11,61	11,91	4	11,85			0,20	1,67	95,41
8	A57	PZ98	DD02	11,91	11,90	11,96	11,84	4	11,90			0,05	0,41	95,85
9	A89	PD02	DB08	11,97	11,98	11,77	11,98	4	11,93			0,10	0,87	96,03
10	F22	PD02	DB02	11,89	12,09	12,17	11,63	4	11,95			0,24	2,02	96,19
11	F13x	PZ02	DD01	12,00	12,00	12,00	12,10	4	12,03			0,05	0,42	96,84
12	F14x	PC01	DB08	12,14	12,06	11,96	12,05	4	12,05			0,07	0,61	97,05
13	F07x	PC01	DB08	12,35	12,13	11,71	12,06	4	12,06			0,27	2,20	97,14
14	F18x	PD01	DB08	12,10	12,20	12,10	12,10	4	12,13			0,05	0,41	97,64
15	A36	PD02	DB08	12,20	12,20	12,10	12,30	4	12,20			0,08	0,67	98,25
16	F15x	PC01	DB08	12,07	12,21	12,41	12,11	4	12,20			0,15	1,24	98,25
17	F12x	PC01	DB08	12,29	12,21	12,21	12,27	4	12,25			0,04	0,34	98,61
18	A60x	PD01	DB10	12,15	12,49	12,20	12,29	4	12,28			0,15	1,21	98,90
19	F25	PB06	DB08	12,34	12,31	12,33	12,32	4	12,33			0,01	0,10	99,25
20	A45x	PZ99	DB08	12,30	12,50	12,30	12,40	4	12,38			0,10	0,77	99,66
21	A56	PC01	DB08	12,57	12,57	12,38	12,26	4	12,44			0,15	1,22	100,21
22	A65	PD01	DB08	12,47	12,50	12,33	12,55	4	12,46			0,09	0,76	100,36
23	F16x	PC01	DB08	12,10	12,62	12,86	12,30	4	12,47			0,34	2,70	100,42
24	A53	PZ02	DD01	12,50	12,50	12,50	12,40	4	12,48			0,05	0,40	100,46
25	F26x	PC02	DB09	12,47	12,57	12,46	12,53	4	12,51			0,05	0,41	100,72
26	F20x	PD02	DB08	12,50	12,50	12,60	12,50	4	12,53			0,05	0,40	100,86
27	F19x	PD02	DB08	12,70	12,70	12,30	12,50	4	12,55			0,19	1,53	101,07
28	A49x	PD05	DB08	12,53	12,56	12,48	12,65	4	12,56			0,07	0,57	101,11
29	A39	PD02	DB08	13,04	12,66	12,74	11,83	4	12,57			0,52	4,14	101,21
30	F05x	PD02	DB08	12,60	12,60	12,60	12,50	4	12,58			0,05	0,40	101,27
31	A51	PD02	DB08	12,63	12,56	12,63	12,52	4	12,59			0,05	0,43	101,35
32	F09	PZ02	DD02	12,52	12,70	12,63	12,59	4	12,61			0,08	0,60	101,53
33	A42	PB04	DB01	12,50	12,82	12,52	12,77	4	12,65			0,17	1,31	101,89
34	A82	PD01	DB08	12,50	12,80	12,80	12,60	4	12,68			0,15	1,18	102,07
35	F33x	PD01	DB10	12,44	12,50	12,74	13,03	4	12,68			0,27	2,12	102,09
36	A58x	PD02	DB02	12,61	12,66	12,74	12,74	4	12,69			0,06	0,50	102,17
37	F03	PD02	DB08	12,69	12,70	12,68	12,77	4	12,71			0,04	0,32	102,35
38	F01x	PB04	DB01	12,89	12,97	12,91	12,75	4	12,88			0,09	0,72	103,72
39	F08x	PC01	DB09	13,16	12,87	12,77	13,11	4	12,98			0,19	1,45	104,50
40	F32x	PD01	DB08	13,00	13,00	13,00	13,10	4	13,03			0,05	0,38	104,89
41	F24x	PB03	DB01	12,50	12,89	13,08	13,74	4	13,05			0,52	3,98	105,10
42	F27x	PD01	DB01	12,38	13,43	13,39	13,05	4	13,07			0,49	3,71	105,21
43	S18	PB03	DB08	13,36	13,26	13,57	13,19	4	13,35			0,17	1,24	107,47
44	A55	PC01	DB08	13,38	13,48	13,41	13,37	4	13,41			0,05	0,38	108,00
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	N	Mean	SI	VI
all labs	168	**12,42**	**0,140**	**1,128**
10	% from the mean			
	L		SR	VR
	42		**0,450**	**3,621**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Ca **Sample: 2** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	F33x	PD01	DB10	2,26	2,24	2,64	2,39	4	2,38			0,18	7,73	88,04
2	A58x	PD02	DB02	2,44	2,41	2,34	2,36	4	2,39			0,05	1,92	88,22
3	A79	PD03	DB10	2,51	2,44	2,41	2,40	4	2,44			0,05	1,92	90,17
4	F14x	PC01	DB08	2,46	2,45	2,44	2,47	4	2,45			0,01	0,53	90,68
5	F18x	PD01	DB08	2,46	2,46	2,48	2,45	4	2,46			0,01	0,51	90,99
6	F02x	PD02	DB08	2,61	2,59	2,41	2,40	4	2,50			0,11	4,51	92,47
7	F25	PB06	DB08	2,56	2,57	2,49	2,52	4	2,54			0,04	1,46	93,67
8	A43	PB06	DB01	2,76	2,44	2,44	2,50	4	2,54			0,15	6,02	93,67
9	F24x	PB03	DB01	2,53	2,58	2,63	2,58	4	2,58			0,04	1,60	95,36
10	A59x	PC01	DB08	2,64	2,57	2,63	2,59	4	2,61			0,03	1,27	96,35
11	F12x	PC01	DB08	2,60	2,61	2,61	2,65	4	2,62			0,02	0,85	96,72
12	F05x	PD02	DB08	2,61	2,64	2,60	2,65	4	2,63			0,02	0,91	97,00
13	A45x	PZ99	DB08	2,66	2,66	2,63	2,65	4	2,65			0,01	0,53	97,92
14	F20x	PD02	DB08	2,62	2,68	2,70	2,62	4	2,66			0,04	1,55	98,11
15	A36	PD02	DB08	2,62	2,71	2,69	2,68	4	2,68			0,04	1,45	98,85
16	F01x	PB04	DB01	2,60	2,72	2,66	2,76	4	2,69			0,07	2,61	99,22
17	A51	PD02	DB08	2,72	2,68	2,72	2,67	4	2,70			0,03	1,00	99,64
18	F15x	PC01	DB08	2,75	2,59	2,62	2,84	4	2,70			0,12	4,31	99,77
19	A39	PD02	DB08	2,79	2,70	2,58	2,74	4	2,70			0,09	3,40	99,82
20	S18	PB03	DB08	2,80	2,70	2,69	2,62	4	2,70			0,07	2,73	99,91
21	F19x	PD02	DB08	2,76	2,79	2,63	2,65	4	2,71			0,08	2,93	100,05
22	A89	PD02	DB08	2,71	2,71	2,71	2,71	4	2,71			0,00	0,14	100,14
23	F16x	PC01	DB08	2,75	2,66	2,76	2,71	4	2,72			0,05	1,78	100,48
24	F03	PD02	DB08	2,80	2,69	2,74	2,74	4	2,74			0,04	1,64	101,34
25	A42	PB04	DB01	2,83	2,75	2,66	2,73	4	2,74			0,07	2,44	101,41
26	A82	PD01	DB08	2,48	2,76	2,92	2,88	4	2,76			0,20	7,20	101,99
27	F09	PZ02	DD02	2,74	2,77	2,78	2,76	4	2,76			0,02	0,56	102,01
28	F26x	PC02	DB09	2,72	2,77	2,78	2,81	4	2,77			0,04	1,35	102,36
29	F07x	PC01	DB08	2,87	2,80	2,84	2,67	4	2,80			0,09	3,19	103,28
30	F13x	PZ02	DD01	2,82	2,79	2,82	2,83	4	2,82			0,02	0,62	104,02
31	A65	PD01	DB08	2,76	2,83	2,97	2,71	4	2,82			0,11	4,01	104,11
32	A56	PC01	DB08	2,89	2,79	2,91	2,74	4	2,83			0,08	2,85	104,66
33	F21	PD01	DB01	3,02	2,74	2,77	2,92	4	2,86			0,13	4,58	105,77
34	F08x	PC01	DB09	2,91	2,82	2,88	2,86	4	2,87			0,04	1,25	105,92
35	A49x	PD05	DB08	2,87	2,87	2,96	2,83	4	2,88			0,05	1,91	106,51
36	A61x	PB02	DB08	2,91	2,89	2,88	2,88	4	2,89			0,01	0,49	106,79
37	F27x	PD01	DB01	2,79	3,06	2,84	2,91	4	2,90			0,12	4,18	107,13
38	A55	PC01	DB08	2,98	2,88	2,86	2,99	4	2,93			0,07	2,27	108,13
39	F22	PD02	DB02	2,79	3,17	2,90	2,85	4	2,93			0,17	5,73	108,18
40	F32x	PD01	DB08	2,90	2,90	2,96	3,05	4	2,95			0,07	2,40	109,10
41	A60x	PD01	DB10	2,91	2,94	3,03	3,03	4	2,98			0,06	2,08	110,03
42	A53	PZ02	DD01	3,27	3,33	3,24	3,28	0	3,28	*b*	*	0,04	1,14	121,20
43	A62x	PD02	DB01	3,62	2,52	4,08	2,93	0	3,29	*c*	*	0,70	21,19	121,48
44	A57	PZ98	DD02	3,43	3,28	3,40	3,42	0	3,38	*b*	*	0,07	2,05	124,99
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	N	Mean	SI	VI
all labs	164	**2,71**	**0,066**	**2,450**
15	% from the mean			
	L		SR	VR
	41		**0,158**	**5,820**

* = non tolerable mean because more than +/-

limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Ca **Sample: 3** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	A89	PD02	DB08	6,63	6,62	*7,235a*	6,63	0	6,63	*b*	*	0,00	0,08	78,30
2	A79	PD03	DB10	7,49	7,49	7,42	7,42	0	7,45		*	0,04	0,54	88,07
3	A62x	PD02	DB01	7,82	*11,3a*	7,80	7,73	3	7,78			0,05	0,61	91,95
4	A59x	PC01	DB08	7,70	7,90	8,12	7,79	4	7,88			0,18	2,30	93,07
5	F02x	PD02	DB08	7,83	8,02	7,86	7,97	4	7,92			0,09	1,13	93,57
6	A43	PB06	DB01	8,16	8,00	8,00	8,06	4	8,06			0,08	0,94	95,16
7	F22	PD02	DB02	8,20	7,90	8,15	8,16	4	8,10			0,14	1,69	95,72
8	A58x	PD02	DB02	8,13	8,11	8,11	8,12	4	8,12			0,01	0,12	95,90
9	F16x	PC01	DB08	8,12	8,26	8,30	8,05	4	8,18			0,12	1,44	96,65
10	A39	PD02	DB08	8,29	8,21	8,17	8,18	4	8,21			0,05	0,62	97,01
11	F15x	PC01	DB08	8,13	8,29	8,24	8,22	4	8,22			0,07	0,81	97,11
12	A60x	PD01	DB10	8,54	8,19	8,12	8,03	4	8,22			0,23	2,74	97,12
13	F18x	PD01	DB08	8,27	8,22	8,30	8,14	4	8,23			0,07	0,85	97,26
14	A61x	PB02	DB08	8,24	8,28	8,19	8,24	4	8,24			0,04	0,45	97,32
15	F12x	PC01	DB08	8,29	8,25	8,40	8,36	4	8,33			0,07	0,81	98,35
16	F07x	PC01	DB08	8,50	8,44	8,19	8,16	4	8,33			0,17	2,07	98,36
17	A49x	PD05	DB08	8,54	8,34	8,38	8,07	4	8,33			0,20	2,34	98,44
18	F19x	PD02	DB08	8,42	8,38	8,27	8,29	4	8,34			0,07	0,86	98,53
19	F05x	PD02	DB08	8,35	8,33	8,34	8,35	4	8,34			0,01	0,11	98,56
20	F01x	PB04	DB01	8,18	8,35	8,55	8,31	4	8,35			0,15	1,84	98,62
21	F14x	PC01	DB08	8,31	8,37	8,38	8,36	4	8,36			0,03	0,41	98,73
22	A65	PD01	DB08	8,37	8,38	8,39	8,31	4	8,36			0,04	0,43	98,80
23	A82	PD01	DB08	8,20	8,37	8,50	8,39	4	8,37			0,12	1,48	98,83
24	F25	PB06	DB08	8,43	8,48	8,34	8,31	4	8,39			0,08	0,94	99,12
25	A56	PC01	DB08	8,70	8,49	8,27	8,34	4	8,45			0,19	2,24	99,84
26	A45x	PZ99	DB08	8,45	8,42	8,44	8,50	4	8,45			0,03	0,40	99,86
27	A36	PD02	DB08	8,47	8,46	8,50	8,42	4	8,46			0,03	0,39	99,98
28	F27x	PD01	DB01	8,38	8,37	8,40	8,77	4	8,48			0,19	2,29	100,16
29	F20x	PD02	DB08	8,53	8,48	8,44	8,49	4	8,49			0,04	0,44	100,24
30	A42	PB04	DB01	8,88	8,43	8,60	8,54	4	8,61			0,20	2,26	101,74
31	A51	PD02	DB08	8,60	8,56	8,63	8,74	4	8,63			0,08	0,90	101,99
32	F26x	PC02	DB09	8,54	8,64	8,79	8,70	4	8,67			0,10	1,21	102,40
33	S18	PB03	DB08	8,42	8,45	8,52	9,34	4	8,68			0,44	5,07	102,59
34	A55	PC01	DB08	8,68	8,73	8,73	8,66	4	8,70			0,03	0,39	102,79
35	F24x	PB03	DB01	8,68	8,71	8,74	8,80	4	8,73			0,05	0,62	103,17
36	F03	PD02	DB08	8,78	8,81	8,69	8,68	4	8,74			0,06	0,74	103,26
37	F21	PD01	DB01	8,96	8,63	8,60	8,77	4	8,74			0,16	1,88	103,26
38	A57	PZ98	DD02	8,80	8,90	8,80	8,87	4	8,84			0,05	0,57	104,47
39	F33x	PD01	DB10	9,21	9,19	8,74	8,31	4	8,86			0,43	4,82	104,70
40	F13x	PZ02	DD01	9,01	9,08	9,07	9,14	4	9,08			0,05	0,59	107,21
41	F32x	PD01	DB08	9,20	9,19	9,30	9,11	4	9,20			0,08	0,85	108,69
42	F08x	PC01	DB09	9,17	9,23	9,27	9,18	4	9,21			0,05	0,54	108,84
43	F09	PZ02	DD02	9,34	9,31	9,32	9,35	4	9,33		*	0,02	0,16	110,23
44	A53	PZ02	DD01	9,32	9,39	9,35	9,30	4	9,34		*	0,04	0,42	110,34
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	N	Mean	SI	VI
all labs	167	**8,46**	**0,103**	**1,216**
10	% from the mean			
	L		SR	VR
	43		**0,401**	**4,742**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Ca **Sample: 4** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean		Lab.standard dev. Si	Vi	Recovery %
1	A79	PD03	DB10	*3,374a*	3,44	3,45	3,44	3	3,44	*	0,01	0,24	82,12
2	F21	PD01	DB01	4,13	3,65	3,50	3,56	4	3,71	*	0,29	7,73	88,55
3	A59x	PC01	DB08	3,72	3,71	3,89	3,73	4	3,76	*	0,09	2,27	89,80
4	A58x	PD02	DB02	3,84	3,87	3,84	3,84	4	3,85		0,02	0,39	91,83
5	F18x	PD01	DB08	3,82	3,89	3,87	3,87	4	3,86		0,03	0,77	92,19
6	F24x	PB03	DB01	3,81	3,90	3,98	4,09	4	3,94		0,12	3,01	94,14
7	A89	PD02	DB08	3,97	3,97	3,96	3,96	4	3,96		0,01	0,14	94,61
8	A43	PB06	DB01	3,96	3,91	4,12	4,01	4	4,00		0,09	2,25	95,47
9	F19x	PD02	DB08	4,02	4,03	3,99	4,02	4	4,02		0,02	0,43	95,83
10	A39	PD02	DB08	4,20	3,83	4,04	4,01	4	4,02		0,15	3,73	95,96
11	F02x	PD02	DB08	3,94	4,15	4,01	4,01	4	4,03		0,09	2,19	96,13
12	F14x	PC01	DB08	4,10	4,01	4,04	4,04	4	4,05		0,04	0,89	96,62
13	F15x	PC01	DB08	4,14	4,09	3,99	4,00	4	4,06		0,07	1,78	96,79
14	A61x	PB02	DB08	4,07	4,06	4,09	4,07	4	4,07		0,01	0,31	97,20
15	A42	PB04	DB01	4,14	4,07	4,04	4,12	4	4,09		0,05	1,13	97,69
16	F05x	PD02	DB08	4,10	4,10	4,12	4,06	4	4,10		0,03	0,61	97,74
17	F12x	PC01	DB08	4,09	4,08	4,18	4,06	4	4,10		0,05	1,30	97,92
18	A65	PD01	DB08	4,13	4,11	4,10	4,10	4	4,11		0,01	0,34	98,10
19	F22	PD02	DB02	4,20	4,18	4,20	3,89	4	4,12		0,15	3,69	98,28
20	F01x	PB04	DB01	4,17	4,07	4,20	4,05	4	4,12		0,07	1,79	98,40
21	A45x	PZ99	DB08	4,13	4,15	4,15	4,13	4	4,14		0,01	0,28	98,82
22	A51	PD02	DB08	4,11	4,07	4,15	4,25	4	4,14		0,08	1,91	98,91
23	F25	PB06	DB08	4,18	4,10	4,16	4,15	4	4,15		0,03	0,82	98,99
24	A56	PC01	DB08	4,14	4,22	4,13	4,12	4	4,15		0,04	1,03	99,14
25	F20x	PD02	DB08	4,17	4,15	4,19	4,12	4	4,16		0,03	0,72	99,23
26	A82	PD01	DB08	4,23	4,22	4,18	4,17	4	4,20		0,03	0,70	100,25
27	F16x	PC01	DB08	4,35	4,21	4,10	4,20	4	4,22		0,10	2,45	100,65
28	A36	PD02	DB08	4,26	4,21	4,26	4,20	4	4,23		0,03	0,76	101,02
29	F33x	PD01	DB10	4,11	4,16	4,28	4,47	4	4,26		0,16	3,76	101,56
30	F07x	PC01	DB08	4,35	4,26	4,26	4,27	4	4,29		0,04	1,03	102,28
31	F03	PD02	DB08	4,29	4,24	4,31	4,32	4	4,29		0,04	0,83	102,40
32	A49x	PD05	DB08	4,25	4,20	4,37	4,35	4	4,29		0,08	1,89	102,46
33	A60x	PD01	DB10	4,39	4,33	4,32	4,33	4	4,34		0,03	0,76	103,55
34	F26x	PC02	DB09	4,43	4,40	4,41	4,45	4	4,42		0,02	0,50	105,56
35	A55	PC01	DB08	4,44	4,40	4,43	4,43	4	4,42		0,02	0,42	105,59
36	F08x	PC01	DB09	4,39	4,47	4,45	4,52	4	4,46		0,05	1,21	106,41
37	S18	PB03	DB08	4,45	4,06	4,37	5,06	4	4,49		0,42	9,36	107,07
38	A57	PZ98	DD02	4,53	4,58	4,58	4,49	4	4,55		0,04	0,96	108,48
39	F27x	PD01	DB01	4,38	4,42	4,57	4,92	4	4,57		0,25	5,38	109,15
40	F32x	PD01	DB08	4,51	4,64	4,70	4,58	4	4,61		0,08	1,77	109,97
41	A53	PZ02	DD01	4,62	4,63	4,63	4,59	4	4,62	*	0,02	0,41	110,21
42	F09	PZ02	DD02	4,58	4,69	4,63	4,65	4	4,64	*	0,05	0,97	110,67
43	F13x	PZ02	DD01	4,89	4,92	4,95	4,98	4	4,94	*	0,04	0,78	117,79
44	A62x	PD02	DB01	5,58	5,54	*6,46a*	5,42	0	5,51	*b* *	0,08	1,51	131,59
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	N	Mean	SI	VI
all labs	171	**4,19**	**0,072**	**1,712**
10	% from the mean			

L	SR	VR
43	**0,278**	**6,643**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Mg **Sample: 1** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A62x	PD02	DB01	0,88	0,89	0,87	0,88	0	0,88	*b*	*	0,01	0,93	45,72
2	A43	PB06	DB01	1,66	1,83	1,66	1,67	4	1,71		*	0,08	4,90	88,58
3	A79	PD03	DB10	1,72	1,72	1,70	1,75	4	1,72		*	0,02	1,24	89,45
4	F27x	PD01	DB01	1,71	1,71	1,77	1,83	4	1,75			0,06	3,29	91,11
5	A89	PD02	DB08	1,74	1,76	1,78	1,78	4	1,76			0,02	0,90	91,59
6	F02x	PD02	DB08	1,82	1,85	1,78	1,81	4	1,82			0,03	1,59	94,29
7	A56	PC01	DB08	1,85	1,84	1,83	1,81	4	1,83			0,01	0,79	95,25
8	F21	PD01	DB01	1,77	1,81	1,88	1,88	4	1,84			0,05	2,97	95,33
9	F13x	PD01	DB08	1,83	1,84	1,84	1,85	4	1,84			0,01	0,44	95,59
10	A61x	PB02	DB08	1,83	1,85	1,85	1,86	4	1,85			0,01	0,68	95,98
11	F18x	PD01	DB08	1,86	1,85	1,85	1,85	4	1,85			0,01	0,27	96,24
12	A58x	PD02	DB01	1,85	1,83	1,88	1,85	4	1,85			0,02	1,11	96,24
13	F07x	PC01	DB08	1,88	1,88	1,81	1,85	4	1,86			0,03	1,74	96,38
14	F26x	PD02	DB09	1,85	1,86	1,87	1,90	4	1,87			0,02	1,16	97,15
15	A36	PD02	DB08	1,89	1,89	1,89	1,91	4	1,90			0,01	0,53	98,45
16	A39	PD02	DB08	1,92	1,88	1,90	1,90	4	1,90			0,02	0,82	98,55
17	A59x	PC01	DB08	1,90	1,91	1,91	1,89	4	1,90			0,01	0,50	98,84
18	F05x	PD02	DB08	1,91	1,90	1,90	1,90	4	1,90			0,01	0,26	98,84
19	A45x	PZ99	DB08	1,90	1,93	1,91	1,92	4	1,92			0,01	0,67	99,49
20	F14x	PC01	DB08	1,94	1,92	1,90	1,93	4	1,92			0,02	0,81	99,83
21	F01x	PB04	DB01	1,91	1,94	1,92	1,94	4	1,93			0,02	0,78	100,14
22	A82	PD01	DB08	1,94	1,92	1,89	1,96	4	1,93			0,03	1,55	100,14
23	F25	PB06	DB08	1,94	1,94	1,93	1,93	4	1,94			0,01	0,30	100,53
24	F12x	PC01	DB08	1,95	1,93	1,93	1,94	4	1,94			0,01	0,49	100,66
25	F24x	PB03	DB01	1,84	1,86	2,01	2,07	4	1,94			0,11	5,71	100,99
26	A42	PB04	DB01	2,03	1,89	1,94	1,91	4	1,94			0,06	3,17	101,03
27	F19x	PD02	DB08	1,95	1,94	1,95	1,94	4	1,95			0,01	0,30	101,05
28	F15x	PC01	DB08	1,95	1,95	1,97	1,93	4	1,95			0,02	0,84	101,31
29	A51	PD02	DB08	1,94	1,93	1,98	1,98	4	1,96			0,03	1,29	101,59
30	F20x	PD02	DB08	1,96	1,96	1,95	1,97	4	1,96			0,01	0,42	101,83
31	F33x	PD01	DB10	1,92	1,95	1,99	2,03	4	1,97			0,05	2,43	102,48
32	F08x	PC01	DB09	1,98	1,96	2,00	1,97	4	1,98			0,02	0,93	102,66
33	A60x	PD01	DB10	1,90	2,03	1,99	2,03	4	1,99			0,06	3,21	103,16
34	F16	PC01	DB08	1,92	2,08	2,00	1,97	4	1,99			0,07	3,32	103,50
35	A65	PD01	DB08	1,99	2,00	1,98	2,00	4	1,99			0,01	0,43	103,57
36	F32x	PD01	DB08	2,00	2,00	2,00	2,00	4	2,00			0,00	0,00	103,90
37	A49x	PD05	DB08	2,05	1,97	2,02	2,02	4	2,02			0,03	1,65	104,68
38	S18	PB03	DB08	2,03	2,01	2,05	2,00	4	2,02			0,02	0,98	105,05
39	F03	PC02	DB08	2,02	2,00	2,02	2,05	4	2,02			0,02	1,02	105,07
40	A57	PZ98	DD02	2,02	2,05	2,04	2,02	4	2,03			0,01	0,74	105,59
41	A53	PZ02	DD01	2,07	2,07	2,08	2,06	4	2,07			0,01	0,39	107,54
42	A55	PC01	DB08	2,08	2,09	2,07	2,08	4	2,08			0,01	0,39	107,99
43	F09	PZ02	DD02	2,11	2,12	2,08	2,09	4	2,10			0,02	0,98	109,00
44	F22	PD02	DB02	2,09	2,15	2,04	2,14	4	2,11			0,05	2,41	109,36
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	N	Mean	SI	VI
all labs	172	**1,92**	**0,026**	**1,346**
10	% from the mean			
	L		SR	VR
	43		**0,095**	**4,951**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Mg **Sample: 2** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F24x	PB03	DB01	0,11	0,11	0,12	0,12	0	0,11	*b*	*	0,00	2,09	49,02
2	F18x	PD01	DB08	0,19	0,18	0,18	0,18	4	0,18		*	0,00	0,77	79,64
3	A58x	PD02	DB01	0,18	0,19	0,19	0,19	4	0,19		*	0,01	2,67	81,15
4	F25	PB06	DB08	0,20	0,19	0,19	0,20	4	0,20		*	0,01	2,96	84,40
5	F02x	PD02	DB08	0,20	0,20	0,19	0,19	4	0,20		*	0,01	2,96	84,40
6	F33x	PD01	DB10	0,19	0,19	0,21	0,20	4	0,20			0,01	5,59	85,81
7	S18	PB03	DB08	0,21	0,20	0,20	0,19	4	0,20			0,01	3,19	86,02
8	F20x	PD02	DB08	0,20	0,21	0,21	0,20	4	0,20			0,01	2,81	87,32
9	F03	PC02	DB08	0,21	0,20	0,20	0,20	4	0,20			0,00	2,47	87,65
10	F27x	PD01	DB01	0,19	0,22	0,21	0,19	4	0,20			0,01	5,45	87,65
11	F05x	PD02	DB08	0,21	0,20	0,20	0,20	4	0,20			0,00	1,94	87,97
12	A43	PB06	DB01	0,21	0,21	0,20	0,21	4	0,20			0,00	1,16	88,51
13	F01x	PB04	DB01	0,20	0,21	0,21	0,22	4	0,21			0,01	3,53	91,87
14	F19x	PD02	DB08	0,22	0,21	0,22	0,21	4	0,21			0,00	1,74	91,97
15	A39	PD02	DB08	0,22	0,21	0,21	0,21	4	0,21			0,00	1,40	92,00
16	A42	PB04	DB01	0,22	0,22	0,21	0,21	4	0,21			0,01	3,27	92,51
17	F13x	PD01	DB08	0,21	0,22	0,21	0,22	4	0,21			0,00	1,66	92,62
18	A61x	PB02	DB08	0,22	0,22	0,23	0,22	4	0,22			0,01	2,25	96,30
19	F26x	PD02	DB09	0,23	0,24	0,21	0,22	4	0,23			0,01	5,74	97,38
20	F14x	PC01	DB08	0,23	0,23	0,23	0,23	4	0,23			0,00	0,22	98,14
21	A79	PD03	DB10	0,23	0,23	0,23	0,22	4	0,23			0,00	1,77	98,79
22	A89	PD02	DB08	0,23	0,23	0,23	0,23	4	0,23			0,00	0,36	99,12
23	A51	PD02	DB08	0,23	0,23	0,23	0,22	4	0,23			0,00	1,90	99,22
24	A36	PD02	DB08	0,23	0,23	0,23	0,23	4	0,23			0,00	1,15	99,76
25	A60x	PD01	DB10	0,23	0,23	0,23	0,24	4	0,23			0,00	1,96	100,41
26	F21	PD01	DB01	0,24	0,23	0,24	0,25	4	0,24			0,01	3,40	103,88
27	A56	PC01	DB08	0,25	0,24	0,25	0,24	4	0,24			0,01	2,88	105,82
28	A45x	PZ99	DB08	0,25	0,24	0,25	0,24	4	0,24			0,00	1,08	105,82
29	F07x	PC01	DB08	0,25	0,24	0,26	0,24	4	0,25			0,01	3,80	106,47
30	F12x	PC01	DB08	0,25	0,25	0,25	0,25	4	0,25			0,00	0,00	108,20
31	A59x	PC01	DB08	0,25	0,25	0,25	0,26	4	0,25			0,01	1,98	109,29
32	A49x	PD05	DB08	0,25	0,26	0,26	0,25	4	0,25			0,01	2,54	110,15
33	F15x	PC01	DB08	0,26	0,25	0,25	0,26	4	0,26			0,01	2,26	110,37
34	F08x	PC01	DB09	0,27	0,24	0,26	0,28	4	0,26			0,02	7,06	112,21
35	F16	PC01	DB08	0,26	0,26	0,26	0,27	4	0,26			0,00	1,53	112,82
36	F32x	PD01	DB08	0,27	0,25	0,26	0,27	4	0,26			0,01	2,93	113,61
37	F22	PD02	DB02	0,27	0,27	0,26	0,26	4	0,27			0,01	2,18	114,70
38	A65	PD01	DB08	0,26	0,27	0,29	0,26	4	0,27		*	0,01	4,37	116,97
39	A53	PZ02	DD01	0,29	0,29	0,29	0,29	4	0,29		*	0,00	0,49	123,79
40	A55	PC01	DB08	0,28	0,29	0,29	0,29	4	0,29		*	0,01	1,82	124,78
41	F09	PZ02	DD02	0,31	0,30	0,30	0,30	4	0,30		*	0,01	2,05	130,49
42	A62x	PD02	DB01	0,32	0,34	0,35	0,38	0	0,35	*b*	*	0,02	7,19	150,40
43	A57	PZ98	DD02	0,36	0,37	0,39	0,36	0	0,37	*b*	*	0,01	3,82	160,14
44	A82	PD01	DB08	96,30	105,00	112,00	112,00	0	106,33	*b*	*	7,45	7,01	46019,30
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	N	Mean	SI	VI
all labs	160	**0,23**	**0,006**	**2,465**
15	% from the mean			
	L		SR	VR
	40		**0,029**	**12,740**

* = non tolerable mean because more than +/- limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Mg **Sample: 3** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F24x	PB03	DB01	0,53	0,54	0,54	0,55	0	0,54	*b*	*	0,01	1,80	76,18
2	A89	PD02	DB08	0,54	0,62	0,62	0,56	0	0,58	*b*	*	0,04	7,18	82,73
3	A79	PD03	DB10	0,61	0,61	0,62	0,61	4	0,61		*	0,00	0,54	86,51
4	A53	PZ02	DD01	0,63	0,64	0,63	0,63	4	0,63		*	0,00	0,37	89,56
5	A62x	PD02	DB01	0,68	0,67	0,60	0,60	4	0,64			0,04	6,82	90,23
6	F09	PZ02	DD02	0,65	0,65	0,65	0,64	4	0,65			0,00	0,66	91,47
7	F27x	PD01	DB01	0,66	0,65	0,65	0,65	4	0,65			0,00	0,23	92,67
8	A58x	PD02	DB01	0,62	0,67	0,67	0,67	4	0,66			0,03	3,80	93,06
9	A56	PC01	DB08	0,67	0,67	0,66	0,68	4	0,67			0,01	1,02	94,76
10	A57	PZ98	DD02	0,67	0,69	0,67	0,66	4	0,67			0,01	1,87	95,18
11	F02x	PD02	DB08	0,67	0,68	0,67	0,70	4	0,68			0,01	2,08	96,24
12	A39	PD02	DB08	0,68	0,70	0,67	0,68	4	0,68			0,02	2,26	96,54
13	F18x	PD01	DB08	0,68	0,69	0,68	0,69	4	0,68			0,01	0,85	96,74
14	F21	PD01	DB01	0,70	0,68	0,67	0,69	4	0,69			0,01	1,88	96,95
15	F13x	PD01	DB08	0,69	0,68	0,69	0,69	4	0,69			0,00	0,38	97,31
16	F19x	PD02	DB08	0,69	0,69	0,69	0,69	4	0,69			0,00	0,12	97,80
17	A42	PB04	DB01	0,69	0,70	0,68	0,72	4	0,70			0,02	2,25	98,97
18	F15x	PC01	DB08	0,70	0,70	0,70	0,71	4	0,70			0,01	0,71	99,43
19	A61x	PB02	DB08	0,71	0,71	0,71	0,69	4	0,71			0,01	1,42	99,78
20	F01x	PB04	DB01	0,72	0,69	0,70	0,71	4	0,71			0,01	1,51	99,85
21	F05x	PD02	DB08	0,71	0,71	0,71	0,71	4	0,71			0,00	0,21	100,31
22	F03	PC02	DB08	0,71	0,72	0,71	0,70	4	0,71			0,01	1,15	100,49
23	A59x	PC01	DB08	0,70	0,70	0,73	0,71	4	0,71			0,01	1,99	100,49
24	F07x	PC01	DB08	0,73	0,72	0,70	0,70	4	0,71			0,01	2,08	100,74
25	F08x	PC01	DB09	0,72	0,73	0,71	0,71	4	0,71			0,01	1,42	100,91
26	F14x	PC01	DB08	0,72	0,71	0,72	0,72	4	0,72			0,00	0,57	101,69
27	F33x	PD01	DB10	0,77	0,74	0,71	0,67	4	0,72			0,04	5,95	102,08
28	F25	PB06	DB08	0,72	0,72	0,72	0,73	4	0,72			0,01	0,69	102,26
29	F26x	PD02	DB09	0,74	0,70	0,72	0,73	4	0,72			0,02	2,36	102,26
30	A45x	PZ99	DB08	0,72	0,72	0,72	0,73	4	0,72			0,00	0,49	102,33
31	F20x	PD02	DB08	0,72	0,73	0,73	0,72	4	0,73			0,00	0,56	102,68
32	A36	PD02	DB08	0,73	0,73	0,73	0,72	4	0,73			0,00	0,49	102,86
33	A82	PD01	DB08	0,71	0,75	0,73	0,73	4	0,73			0,02	2,24	103,32
34	S18	PB03	DB08	0,71	0,71	0,72	0,79	4	0,73			0,04	4,98	103,43
35	F16	PC01	DB08	0,72	0,75	0,73	0,73	4	0,73			0,02	2,07	103,47
36	A60x	PD01	DB10	0,73	0,75	0,75	0,75	4	0,74			0,01	1,54	105,27
37	F12x	PC01	DB08	0,75	0,75	0,74	0,74	4	0,75			0,01	0,77	105,44
38	A49x	PD05	DB08	0,74	0,73	0,76	0,75	4	0,75			0,01	1,44	105,69
39	A51	PD02	DB08	0,75	0,75	0,75	0,75	4	0,75			0,00	0,20	106,26
40	F32x	PD01	DB08	0,74	0,76	0,76	0,75	4	0,75			0,01	1,55	106,36
41	F22	PD02	DB02	0,76	0,79	0,74	0,72	4	0,75			0,03	3,97	106,50
42	A43	PB06	DB01	0,75	0,75	0,75	0,76	4	0,75			0,00	0,13	106,65
43	A65	PD01	DB08	0,76	0,75	0,75	0,75	4	0,75			0,01	0,89	106,72
44	A55	PC01	DB08	0,77	0,77	0,77	0,77	4	0,77			0,00	0,21	108,74
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	N	Mean	SI	VI
all labs	168	**0,71**	**0,011**	**1,582**
10	% from the mean			
	L		SR	VR
	42		**0,037**	**5,235**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Mg **Sample: 4** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F24x	PB03	DB01	0,61	0,62	0,63	0,62	0	0,62	*b*	*	0,01	1,26	75,22
2	A62x	PD02	DB01	0,72	0,70	0,69	0,70	4	0,70		*	0,01	1,79	84,98
3	A79	PD03	DB10	0,71	0,72	0,72	0,72	4	0,72		*	0,00	0,69	86,86
4	F21	PD01	DB01	0,74	0,75	0,73	0,74	4	0,74		*	0,01	1,10	89,52
5	F27x	PD01	DB01	0,72	0,73	0,80	0,74	4	0,74		*	0,04	4,73	89,94
6	A43	PB06	DB01	0,75	0,75	0,76	0,76	4	0,75			0,00	0,38	91,03
7	A89	PD02	DB08	0,75	0,75	0,77	0,75	4	0,76			0,01	1,37	91,52
8	A56	PC01	DB08	0,79	0,79	0,78	0,78	4	0,79			0,01	0,77	95,09
9	A58x	PD02	DB01	0,80	0,79	0,78	0,79	4	0,79			0,01	1,03	95,57
10	A53	PZ02	DD01	0,79	0,79	0,79	0,79	4	0,79			0,00	0,26	95,84
11	A39	PD02	DB08	0,79	0,82	0,78	0,79	4	0,80			0,02	1,89	96,36
12	F18x	PD01	DB08	0,80	0,80	0,80	0,81	4	0,80			0,00	0,43	97,02
13	F13x	PD01	DB08	0,82	0,81	0,80	0,81	4	0,81			0,01	0,77	97,60
14	F02x	PD02	DB08	0,79	0,82	0,82	0,80	4	0,81			0,02	1,86	97,69
15	F09	PZ02	DD02	0,81	0,82	0,81	0,81	4	0,81			0,01	0,65	98,29
16	A57	PZ98	DD02	0,81	0,82	0,82	0,80	4	0,81			0,01	1,18	98,29
17	F01x	PB04	DB01	0,81	0,81	0,82	0,82	4	0,81			0,01	0,87	98,35
18	A42	PB04	DB01	0,80	0,83	0,82	0,81	4	0,81			0,01	1,47	98,47
19	F19x	PD02	DB08	0,82	0,82	0,83	0,81	4	0,82			0,01	0,72	99,20
20	A61x	PB02	DB08	0,83	0,83	0,82	0,82	4	0,83			0,01	0,70	99,80
21	F15x	PC01	DB08	0,83	0,84	0,82	0,82	4	0,83			0,01	1,16	100,11
22	F05x	PD02	DB08	0,83	0,83	0,83	0,83	4	0,83			0,00	0,42	100,26
23	A59x	PC01	DB08	0,86	0,83	0,84	0,81	4	0,84			0,02	2,49	101,01
24	F22	PD02	DB02	0,80	0,87	0,85	0,82	4	0,84			0,03	3,72	101,01
25	A36	PD02	DB08	0,87	0,86	0,87	0,74	4	0,84			0,06	7,49	101,23
26	F25	PB06	DB08	0,85	0,85	0,84	0,83	4	0,84			0,01	1,14	101,92
27	A82	PD01	DB08	0,85	0,85	0,84	0,83	4	0,84			0,01	1,14	101,92
28	F07x	PC01	DB08	0,85	0,84	0,84	0,86	4	0,84			0,01	1,15	101,95
29	F33x	PD01	DB10	0,82	0,84	0,85	0,89	4	0,85			0,03	3,38	102,37
30	F03	PC02	DB08	0,84	0,84	0,86	0,85	4	0,85			0,01	1,13	102,53
31	A45x	PZ99	DB08	0,86	0,85	0,85	0,84	4	0,85			0,00	0,57	102,59
32	F14x	PC01	DB08	0,86	0,85	0,85	0,85	4	0,85			0,00	0,52	103,13
33	F26x	PD02	DB09	0,84	0,86	0,85	0,88	4	0,86			0,02	1,99	103,74
34	F20x	PD02	DB08	0,86	0,86	0,87	0,85	4	0,86			0,01	0,94	103,98
35	A65	PD01	DB08	0,87	0,87	0,87	0,85	4	0,86			0,01	0,86	104,28
36	F08x	PC01	DB09	0,86	0,87	0,85	0,88	4	0,86			0,01	1,60	104,49
37	F12x	PC01	DB08	0,88	0,87	0,90	0,86	4	0,88			0,02	1,95	106,16
38	A60x	PD01	DB10	0,86	0,90	0,88	0,87	4	0,88			0,02	2,18	106,16
39	A51	PD02	DB08	0,86	0,87	0,90	0,90	4	0,88			0,02	2,32	106,43
40	S18	PB03	DB08	0,87	0,80	0,87	1,00	4	0,88			0,08	9,26	106,94
41	F16	PC01	DB08	0,93	0,90	0,84	0,89	4	0,89			0,04	4,45	107,44
42	A49x	PD05	DB08	0,89	0,89	0,88	0,90	4	0,89			0,01	0,92	108,00
43	F32x	PD01	DB08	0,91	0,89	0,92	0,90	4	0,90			0,01	1,48	109,39
44	A55	PC01	DB08	0,92	0,92	0,93	0,92	4	0,92		*	0,00	0,51	111,54
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	N	Mean	SI	VI
all labs	172	**0,83**	**0,015**	**1,773**
10	% from the mean			
	L		SR	VR
	43		**0,049**	**5,946**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: K **Sample: 1** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean		Lab.standard dev. Si	Vi	Recovery %
1	A37	PZ99	DZ99	6,10	6,05	6,07	6,04	4	6,07	*	0,03	0,44	89,50
2	A82	PC01	DB08	6,03	6,21	6,15	6,12	4	6,13		0,07	1,22	90,43
3	F27x	PD01	DB06	6,21	6,02	6,24	6,17	4	6,16		0,10	1,57	90,89
4	A79	PD03	DB10	6,15	6,19	*5,976a*	6,15	3	6,16		0,02	0,35	90,93
5	A59x	PC01	DB08	6,26	6,32	6,24	6,22	4	6,26		0,04	0,69	92,38
6	F18x	PD01	DB08	6,34	6,38	6,31	6,28	4	6,33		0,04	0,68	93,38
7	A61x	PB02	DB08	6,31	6,43	6,39	6,41	4	6,39		0,05	0,82	94,23
8	F26x	PD02	DB09	6,30	6,30	6,56	6,44	4	6,40		0,13	1,96	94,45
9	A89	PD02	DB06	6,40	6,41	6,40	6,40	4	6,40		0,00	0,07	94,46
10	A43	PB06	DB01	6,43	6,48	6,44	6,48	4	6,46		0,03	0,41	95,30
11	A49x	PD05	DB08	6,50	6,28	6,54	6,52	4	6,46		0,12	1,87	95,33
12	A62x	PD02	DB01	7,29	6,70	5,54	6,44	4	6,49		0,73	11,21	95,81
13	F07x	PC01	DB08	6,71	6,83	6,48	6,44	4	6,62		0,19	2,84	97,62
14	A42	PB04	DB01	6,69	6,61	6,69	6,60	4	6,65		0,05	0,73	98,09
15	A56	PC01	DB08	6,68	6,68	6,73	6,63	4	6,68		0,04	0,59	98,59
16	F02x	PD02	DB08	6,59	6,95	6,52	6,71	4	6,69		0,19	2,82	98,76
17	A58x	PD02	DB01	6,77	6,67	6,78	6,66	4	6,72		0,06	0,95	99,17
18	F03	PD02	DB08	6,70	6,69	6,67	6,82	4	6,72		0,07	1,01	99,17
19	A36	PD02	DB08	6,78	6,73	6,74	6,78	4	6,76		0,03	0,39	99,72
20	A57	PZ98	DD02	6,77	6,77	6,82	6,70	4	6,77		0,05	0,73	99,83
21	F01x	PB04	DB01	6,68	6,86	6,73	6,80	4	6,77		0,08	1,17	99,87
22	F22	PD02	DB02	6,72	7,11	6,70	6,63	4	6,79		0,22	3,19	100,20
23	F25	PB06	DB08	6,80	6,80	6,77	6,83	4	6,80		0,02	0,36	100,35
24	S18	PB03	DB08	6,89	6,70	6,94	6,69	4	6,80		0,13	1,91	100,42
25	A51	PD02	DB08	6,77	6,82	6,78	6,99	4	6,84		0,10	1,52	100,92
26	F14x	PC01	DB08	6,85	6,88	6,80	6,88	4	6,85		0,04	0,56	101,16
27	F08x	PC01	DB09	6,88	6,88	6,82	6,85	4	6,86		0,03	0,44	101,22
28	F12x	PC01	DB08	6,90	6,82	6,85	6,89	4	6,87		0,04	0,54	101,31
29	F05x	PD02	DB08	6,90	6,82	6,92	6,84	4	6,87		0,05	0,69	101,38
30	A65	PD01	DB08	6,85	6,87	6,84	6,93	4	6,87		0,04	0,59	101,42
31	F32x	PD01	DB08	6,94	6,91	6,91	6,91	4	6,92		0,02	0,22	102,08
32	A45x	PZ99	DB08	6,91	7,00	6,85	6,95	4	6,93		0,06	0,92	102,23
33	A60x	PD01	DB10	5,93	7,41	7,19	7,30	4	6,96		0,69	9,92	102,64
34	F19x	PD02	DB08	6,94	6,92	7,01	6,99	4	6,97		0,04	0,60	102,79
35	F16x	PC01	DB08	6,80	6,73	7,12	7,22	4	6,97		0,24	3,43	102,79
36	F09	PZ02	DD02	6,97	6,99	7,03	7,07	4	7,02		0,05	0,66	103,54
37	F20x	PD02	DB08	7,01	7,02	7,03	7,05	4	7,03		0,02	0,24	103,71
38	F13x	PZ02	DD01	6,96	7,04	7,03	7,13	4	7,04		0,07	0,99	103,89
39	A53	PZ02	DD01	7,04	7,03	7,05	7,07	4	7,05		0,02	0,24	104,00
40	F15x	PC01	DB08	6,96	7,08	7,18	7,07	4	7,07		0,09	1,27	104,37
41	A55	PC01	DB08	7,10	7,23	7,14	7,15	4	7,15		0,06	0,78	105,57
42	A39	PD02	DB08	7,29	7,16	7,17	7,19	4	7,20		0,06	0,81	106,26
43	F24x	PB03	DB01	7,47	7,47	7,47	7,51	4	7,48	*	0,02	0,26	110,42
44	F33x	PD01	DB10	7,29	7,42	7,48	7,99	4	7,55	*	0,31	4,07	111,35
45	F21	PD01	DB01	7,72	8,06	7,77	7,83	4	7,85	*	0,15	1,91	115,77
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	N	Mean	SI	VI
all labs	179	**6,78**	**0,104**	**1,529**
10	% from the mean			
	L		SR	VR
	45		**0,370**	**5,468**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: K **Sample: 2** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean		Lab.standard dev. Si	Vi	Recovery %
1	A62x	PD02	DB01	0,23	0,20	0,27	0,23	4	0,23	*	0,03	12,35	62,69
2	F02x	PD02	DB08	0,40	0,23	0,12	0,20	4	0,24	*	0,12	49,63	64,04
3	S18	PB03	DB08	0,29	0,29	0,27	0,25	4	0,27	*	0,02	6,90	73,75
4	F27x	PD01	DB06	0,25	0,28	0,29	0,28	4	0,27	*	0,02	6,68	73,75
5	A37	PZ99	DZ99	0,29	0,29	0,28	0,28	4	0,29	*	0,01	2,03	76,85
6	F18x	PD01	DB08	0,31	0,30	0,30	0,31	4	0,31	*	0,00	1,44	82,58
7	F21	PD01	DB01	0,30	0,31	0,31	0,31	4	0,31	*	0,01	1,63	82,92
8	A58x	PD02	DB01	0,32	0,33	0,33	0,33	4	0,33		0,01	1,53	88,31
9	F03	PD02	DB08	0,34	0,33	0,35	0,34	4	0,34		0,01	2,40	91,68
10	A39	PD02	DB08	0,36	0,34	0,35	0,34	4	0,35		0,01	2,23	93,59
11	F12x	PC01	DB08	0,35	0,34	0,33	0,37	4	0,35		0,02	4,91	93,70
12	A89	PD02	DB06	0,35	0,36	0,35	0,35	4	0,35		0,00	1,32	94,98
13	F25	PB06	DB08	0,36	0,35	0,36	0,34	4	0,35		0,01	2,72	95,05
14	F05x	PD02	DB08	0,35	0,35	0,36	0,36	4	0,35		0,00	1,32	95,05
15	A82	PC01	DB08	0,32	0,37	0,37	0,36	4	0,36		0,02	6,71	95,72
16	F26x	PD02	DB09	0,37	0,37	0,34	0,34	4	0,36		0,02	4,88	95,72
17	F14x	PC01	DB08	0,36	0,36	0,36	0,36	4	0,36		0,00	0,42	96,60
18	F20x	PD02	DB08	0,36	0,36	0,37	0,35	4	0,36		0,01	1,58	96,87
19	A45x	PZ99	DB08	0,37	0,36	0,36	0,36	4	0,36		0,01	1,51	97,88
20	A59x	PC01	DB08	0,36	0,37	0,37	0,37	4	0,37		0,01	1,36	99,09
21	A53	PZ02	DD01	0,37	0,37	0,36	0,37	4	0,37		0,01	1,80	99,50
22	F33x	PD01	DB10	0,35	0,35	0,41	0,37	4	0,37		0,03	7,87	99,90
23	A42	PB04	DB01	0,39	0,38	0,36	0,37	4	0,37		0,01	3,55	100,78
24	F19x	PD02	DB08	0,38	0,38	0,38	0,38	4	0,38		0,00	0,48	101,93
25	A61x	PB02	DB08	0,38	0,38	0,37	0,39	4	0,38		0,01	2,15	102,46
26	F15x	PC01	DB08	0,39	0,37	0,37	0,40	4	0,38		0,02	3,92	103,14
27	F01x	PB04	DB01	0,37	0,38	0,38	0,40	4	0,38		0,01	2,92	103,54
28	A56	PC01	DB08	0,40	0,37	0,40	0,37	4	0,38		0,02	4,08	103,54
29	A36	PD02	DB08	0,39	0,38	0,40	0,37	4	0,39		0,02	4,00	103,88
30	A51	PD02	DB08	0,38	0,36	0,37	0,45	4	0,39		0,04	10,16	105,23
31	A60x	PD01	DB10	0,39	0,42	0,37	0,44	4	0,40		0,03	8,01	108,40
32	F09	PZ02	DD02	0,41	0,40	0,40	0,41	4	0,41		0,00	0,84	109,27
33	F32x	PD01	DB08	0,43	0,40	0,40	0,40	4	0,41		0,01	3,02	109,68
34	F08x	PC01	DB09	0,44	0,40	0,39	0,42	4	0,41		0,02	5,83	110,35
35	A49x	PD05	DB08	0,41	0,42	0,42	0,41	4	0,42		0,01	1,62	111,90
36	F07x	PC01	DB08	0,41	0,42	*0,477a*	0,42	3	0,42		0,01	1,69	112,35
37	F16x	PC01	DB08	0,43	0,41	0,43	0,42	4	0,42		0,01	1,72	114,45
38	A65	PD01	DB08	0,43	0,43	0,46	0,42	4	0,44	*	0,02	3,98	117,29
39	F24x	PB03	DB01	0,43	0,43	0,44	0,46	4	0,44	*	0,02	3,76	118,58
40	F13x	PZ02	DD01	0,43	0,44	0,44	0,45	4	0,44	*	0,01	1,57	118,64
41	A55	PC01	DB08	0,44	0,46	0,45	0,45	4	0,45	*	0,01	2,11	121,24
42	A57	PZ98	DD02	0,47	0,45	0,48	0,44	4	0,46	*	0,02	3,97	124,04
43	F22	PD02	DB02	0,51	0,47	0,43	0,45	4	0,47	*	0,03	7,35	125,38
44	A79	PD03	DB10	0,47	0,45	0,49	0,47	4	0,47	*	0,02	3,56	126,80
45	A43	PB06	DB01	3,72	3,67	3,67	3,69	0	3,69	*b* *	0,02	0,64	994,31
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	N	Mean	SI	VI
all labs	175	**0,37**	**0,016**	**4,184**
15	% from the mean			
	L		SR	VR
	44		**0,056**	**15,201**

* = non tolerable mean because more than +/-

limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: K **Sample: 3** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean		Lab.standard dev. Si	Vi	Recovery %
1	F27x	PD01	DB06	3,58	3,65	3,72	3,55	4	3,62	*	0,07	2,05	89,07
2	F18x	PD01	DB08	3,69	3,68	3,65	3,64	4	3,67		0,02	0,65	90,07
3	F02x	PD02	DB08	3,58	3,76	3,66	3,81	4	3,70		0,10	2,78	90,99
4	A82	PC01	DB08	3,72	3,77	3,76	3,73	4	3,75		0,02	0,64	92,04
5	A79	PD03	DB10	3,65	3,92	3,81	3,74	4	3,78		0,11	2,92	92,92
6	S18	PB03	DB08	3,70	3,72	3,69	4,05	4	3,79		0,17	4,59	93,09
7	A59x	PC01	DB08	3,80	3,85	3,73	3,78	4	3,79		0,05	1,31	93,14
8	A43	PB06	DB01	3,92	3,87	3,90	3,87	4	3,89		0,02	0,63	95,60
9	A89	PD02	DB06	3,94	3,93	3,93	3,94	4	3,93		0,01	0,15	96,62
10	A56	PC01	DB08	3,93	3,96	3,93	3,94	4	3,94		0,01	0,31	96,80
11	A42	PB04	DB01	3,91	3,81	3,96	4,09	4	3,94		0,11	2,88	96,91
12	F33x	PD01	DB10	4,26	4,11	3,94	3,69	4	4,00		0,24	6,11	98,30
13	A57	PZ98	DD02	4,00	4,04	4,00	3,98	4	4,01		0,03	0,63	98,43
14	A58x	PD02	DB01	4,00	3,99	4,00	4,07	4	4,02		0,04	0,92	98,67
15	A61x	PB02	DB08	4,05	4,07	4,03	3,96	4	4,03		0,05	1,19	98,98
16	A37	PZ99	DZ99	4,02	4,03	4,05	4,05	4	4,04		0,02	0,37	99,23
17	F07x	PC01	DB08	4,11	4,19	3,94	3,91	4	4,04		0,13	3,34	99,26
18	A49x	PD05	DB08	4,06	3,99	4,16	4,04	4	4,06		0,07	1,76	99,84
19	F26x	PD02	DB09	4,05	4,02	4,11	4,08	4	4,07		0,04	0,95	99,90
20	A39	PD02	DB08	4,14	4,07	4,11	3,96	4	4,07		0,08	1,85	99,99
21	F25	PB06	DB08	4,06	4,09	4,08	4,07	4	4,08		0,01	0,32	100,15
22	A60x	PD01	DB10	3,78	4,41	4,43	3,71	4	4,08		0,39	9,65	100,34
23	A53	PZ02	DD01	4,10	4,11	4,09	4,08	4	4,10		0,01	0,32	100,64
24	F09	PZ02	DD02	4,09	4,10	4,09	4,11	4	4,10		0,01	0,27	100,72
25	F22	PD02	DB02	4,07	4,24	4,00	4,13	4	4,11		0,10	2,47	101,01
26	F32x	PD01	DB08	4,06	4,12	4,16	4,11	4	4,11		0,04	1,00	101,07
27	F08x	PC01	DB09	4,00	4,19	4,09	4,18	4	4,11		0,09	2,17	101,09
28	F05x	PD02	DB08	4,13	4,10	4,10	4,14	4	4,12		0,02	0,50	101,19
29	F01x	PB04	DB01	4,15	4,12	4,04	4,17	4	4,12		0,06	1,39	101,25
30	F16x	PC01	DB08	4,14	4,20	4,08	4,16	4	4,14		0,05	1,26	101,84
31	F19x	PD02	DB08	4,13	4,13	4,22	4,23	4	4,18		0,06	1,32	102,67
32	F03	PD02	DB08	4,13	4,23	4,18	4,18	4	4,18		0,04	0,98	102,73
33	F12x	PC01	DB08	4,17	4,15	4,21	4,21	4	4,19		0,03	0,72	102,85
34	A36	PD02	DB08	4,25	4,25	4,21	4,15	4	4,22		0,05	1,12	103,59
35	A65	PD01	DB08	4,29	4,20	4,19	4,20	4	4,22		0,05	1,11	103,71
36	F14x	PC01	DB08	4,25	4,21	4,22	4,22	4	4,23		0,02	0,42	103,89
37	A45x	PZ99	DB08	4,26	4,20	4,24	4,23	4	4,23		0,02	0,59	104,02
38	F20x	PD02	DB08	4,27	4,29	4,31	4,23	4	4,28		0,03	0,80	105,06
39	F13x	PZ02	DD01	4,30	4,29	4,29	4,32	4	4,30		0,01	0,33	105,68
40	F15x	PC01	DB08	4,31	4,35	4,26	4,33	4	4,31		0,04	0,90	105,98
41	A51	PD02	DB08	4,31	4,29	4,27	4,39	4	4,31		0,05	1,20	106,00
42	A55	PC01	DB08	4,38	4,38	4,37	4,36	4	4,37		0,01	0,29	107,44
43	F21	PD01	DB01	4,39	4,37	4,41	4,41	4	4,40		0,02	0,44	108,01
44	F24x	PB03	DB01	4,43	4,44	4,46	4,46	4	4,44		0,01	0,28	109,23
45	A62x	PD02	DB01	3,73	3,77	5,41	7,26	0	5,04	*b* *	1,67	33,17	123,92
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	N	Mean	SI	VI
all labs	176	**4,07**	**0,060**	**1,476**
10	% from the mean			
	L		SR	VR
	44		**0,196**	**4,806**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: K **Sample: 4** Unit: mg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A55	PC01	DB08	0,92	0,92	0,93	0,92	0	0,92	*b*	*	0,00	0,51	15,87
2	F27x	PD01	DB06	5,15	5,10	5,14	*4,838a*	3	5,13		*	0,02	0,48	88,33
3	A82	PC01	DB08	5,22	5,21	5,19	5,10	4	5,18		*	0,05	1,06	89,17
4	A79	PD03	DB10	5,31	5,36	5,14	5,04	4	5,21		*	0,15	2,84	89,66
5	A37	PZ99	DZ99	5,25	5,28	5,30	5,31	4	5,29			0,03	0,50	90,98
6	F18x	PD01	DB08	5,32	5,36	5,35	5,33	4	5,34			0,02	0,34	91,93
7	S18	PB03	DB08	5,29	4,97	5,44	6,06	4	5,44			0,46	8,46	93,62
8	A43	PB06	DB01	5,24	5,51	5,62	5,50	4	5,47			0,16	2,95	94,12
9	A42	PB04	DB01	5,61	5,64	5,52	5,22	4	5,50			0,19	3,46	94,62
10	A59x	PC01	DB08	5,60	5,41	5,61	5,40	4	5,51			0,12	2,10	94,77
11	A56	PC01	DB08	5,62	5,64	5,57	5,54	4	5,59			0,04	0,79	96,28
12	F02x	PD02	DB08	5,40	5,68	5,72	5,58	4	5,60			0,14	2,55	96,32
13	A89	PD02	DB06	5,64	5,64	5,63	5,63	4	5,64			0,01	0,17	97,01
14	A61x	PB02	DB08	5,74	5,70	5,66	5,64	4	5,69			0,04	0,78	97,86
15	F33x	PD01	DB10	5,44	5,58	5,75	6,04	4	5,70			0,26	4,53	98,17
16	F07x	PC01	DB08	5,78	5,82	5,66	5,76	4	5,75			0,07	1,20	99,03
17	A58x	PD02	DB01	5,72	5,73	5,85	5,73	4	5,76			0,06	1,07	99,11
18	F22	PD02	DB02	5,69	5,68	5,92	5,81	4	5,78			0,11	1,96	99,41
19	F32x	PD01	DB08	5,92	5,72	5,72	5,78	4	5,79			0,09	1,63	99,59
20	F05x	PD02	DB08	5,76	5,80	5,81	5,78	4	5,79			0,02	0,38	99,63
21	F25	PB06	DB08	5,80	5,82	5,80	5,75	4	5,79			0,03	0,52	99,72
22	A49x	PD05	DB08	5,92	5,77	5,88	5,63	4	5,80			0,13	2,24	99,84
23	F08x	PC01	DB09	5,86	5,78	5,82	5,85	4	5,83			0,03	0,58	100,29
24	A57	PZ98	DD02	5,84	5,87	5,92	5,80	4	5,86			0,05	0,86	100,83
25	F26x	PD02	DB09	5,85	5,88	5,90	5,89	4	5,88			0,02	0,37	101,22
26	A65	PD01	DB08	5,89	5,94	5,89	5,83	4	5,89			0,05	0,76	101,35
27	A60x	PD01	DB10	5,43	6,41	6,26	5,46	4	5,89			0,52	8,79	101,40
28	A39	PD02	DB08	5,83	6,05	5,90	5,86	4	5,91			0,10	1,70	101,71
29	F19x	PD02	DB08	5,86	5,92	5,91	6,07	4	5,94			0,09	1,52	102,25
30	F12x	PC01	DB08	5,95	5,92	6,05	5,86	4	5,95			0,08	1,34	102,34
31	F01x	PB04	DB01	5,91	5,98	5,99	5,94	4	5,96			0,04	0,62	102,51
32	A51	PD02	DB08	5,91	5,87	5,90	6,15	4	5,96			0,13	2,22	102,56
33	F03	PD02	DB08	5,95	5,97	5,99	5,96	4	5,97			0,02	0,29	102,73
34	F16x	PC01	DB08	5,85	5,94	5,98	6,21	4	5,99			0,16	2,59	103,19
35	A36	PD02	DB08	6,05	5,99	6,08	5,87	4	6,00			0,09	1,55	103,24
36	A45x	PZ99	DB08	6,02	6,00	6,04	6,05	4	6,03			0,02	0,37	103,76
37	F20x	PD02	DB08	6,06	6,04	6,11	6,01	4	6,06			0,04	0,69	104,23
38	F14x	PC01	DB08	6,11	6,05	6,05	6,04	4	6,06			0,03	0,54	104,35
39	A53	PZ02	DD01	6,11	6,07	6,10	6,06	4	6,09			0,02	0,39	104,75
40	F09	PZ02	DD02	6,01	6,08	6,15	6,10	4	6,09			0,06	0,97	104,75
41	F15x	PC01	DB08	6,14	6,10	6,02	6,10	4	6,09			0,05	0,83	104,84
42	F24x	PB03	DB01	6,22	6,23	6,41	6,45	4	6,33			0,12	1,85	108,92
43	F21	PD01	DB01	6,16	6,45	6,67	6,42	4	6,43		*	0,21	3,25	110,60
44	F13x	PZ02	DD01	6,70	6,72	6,76	6,79	4	6,74		*	0,04	0,60	116,07
45	A62x	PD02	DB01	8,12	8,24	*9,17a*	7,95	0	8,10	*b*	*	0,15	1,80	139,49
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	N	Mean	SI	VI
all labs	171	**5,81**	**0,097**	**1,677**
10	% from the mean			
	L		SR	VR
	43		**0,325**	**5,600**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: C **Sample: 1** Unit: g/100g

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	F13x	PZ98	DA01	*47,1a*	47,20	47,20	47,20	0	47,20	*b*	*	0,00	0,00	92,81
2	F25	PZ98	DA01	47,88	47,97	47,91	47,96	0	47,93	*b*	*	0,04	0,09	94,24
3	A59x	PZ98	DA02	48,02	48,01	48,50	47,84	0	48,09	*b*	*	0,28	0,59	94,56
4	S18	PZ98	DA01	*49,3a*	48,62	48,57	48,66	0	48,62	*b*		0,05	0,09	95,59
5	A49x	PZ98	DA02	49,27	49,51	49,60	49,45	4	49,46			0,14	0,28	97,24
6	A62x	PZ98	DA01	49,87	49,57	49,83	50,08	4	49,84			0,21	0,42	97,99
7	F21	PZ98	DA01	50,16	50,24	50,14	50,22	4	50,19			0,05	0,09	98,68
8	A61x	PZ98	DA02	50,20	50,24	50,05	50,48	4	50,24			0,18	0,35	98,78
9	F03	PZ98	DA01	49,98	50,70	50,24	50,10	4	50,26			0,32	0,63	98,81
10	A57	PZ98	DA01	50,41	50,44	50,40	50,27	4	50,38			0,08	0,15	99,06
11	F14x	PZ98	DA01	49,70	50,70	50,70	50,60	4	50,43			0,49	0,96	99,15
12	F22	PZ98	DA02	50,48	50,37	50,54	50,54	4	50,48			0,08	0,16	99,26
13	A45x	PZ98	DA02	50,60	50,40	50,50	50,50	4	50,50			0,08	0,16	99,29
14	A39	PZ98	DA02	50,54	50,45	50,55	50,58	4	50,53			0,06	0,11	99,35
15	F19x	PZ98	DA01	49,90	50,70	51,30	50,30	4	50,55			0,60	1,18	99,39
16	A42	PZ98	DA01	50,40	50,53	50,70	50,78	4	50,60			0,17	0,34	99,50
17	F05x	PZ98	DA01	50,50	50,70	50,70	50,70	4	50,65			0,10	0,20	99,59
18	F32x	PZ98	DA01	50,50	50,70	50,70	50,70	4	50,65			0,10	0,20	99,59
19	F16x	PC01	DB08	50,79	50,60	50,54	50,75	4	50,67			0,12	0,24	99,63
20	F02x	PZ98	DA01	50,70	50,54	50,78	50,90	4	50,73			0,15	0,30	99,75
21	A82	PZ98	DA02	50,69	50,96	50,74	50,86	4	50,81			0,12	0,24	99,91
22	F07x	PZ98	DA01	51,83	50,52	50,46	50,58	4	50,85			0,66	1,29	99,98
23	A60x	PZ98	DA02	50,94	50,89	50,90	50,81	4	50,88			0,06	0,11	100,05
24	F08x	PZ98	DA01	50,95	50,82	50,86	50,91	4	50,89			0,06	0,11	100,05
25	A65	PZ98	DA02	50,90	51,10	50,90	50,80	4	50,93			0,13	0,25	100,13
26	F12x	PZ98	DA02	50,82	50,99	50,98	51,11	4	50,98			0,12	0,23	100,23
27	F24x	PZ98	DA01	51,09	51,09	51,11	51,14	4	51,11			0,02	0,04	100,49
28	A55	PZ98	DA01	52,40	51,20	50,60	50,40	4	51,15			0,90	1,76	100,57
29	A51	PZ98	DA02	51,38	51,29	51,25	51,00	4	51,23			0,16	0,32	100,73
30	F33x	PZ98	DA02	50,88	51,55	50,96	51,66	4	51,26			0,40	0,78	100,79
31	F26x	PZ98	DA02	51,20	51,30	51,20	51,40	4	51,28			0,10	0,19	100,82
32	F15x	PZ98	DA01	51,50	51,54	51,27	51,57	4	51,47			0,14	0,26	101,20
33	A58x	PZ98	DA99	51,65	51,58	51,38	51,57	4	51,55			0,12	0,22	101,35
34	F27x	PZ98	DA01	52,77	51,47	51,04	51,15	4	51,61			0,80	1,54	101,47
35	A89	PZ98	DA01	51,68	51,66	51,67	51,69	4	51,67			0,01	0,03	101,60
36	A56	PZ98	DA02	52,09	52,28	52,32	52,03	4	52,18			0,14	0,27	102,60
37	F18x	PZ98	DA99	52,40	53,40	51,30	52,40	4	52,38			0,86	1,64	102,98
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	N	Mean	SI	VI
all labs	132	**50,86**	**0,233**	**0,458**
5	% from the mean			

L	SR	VR
33	**0,614**	**1,207**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: C **Sample: 2** Unit: g/100g

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	F13x	PZ98	DA01	48,80	48,90	49,10	49,00	4	48,95	*	0,13	0,26	93,32
2	F25	PZ98	DA01	49,47	49,54	49,45	49,55	4	49,50	*	0,05	0,10	94,37
3	A59x	PZ98	DA02	49,50	49,39	49,84	49,58	4	49,58	*	0,19	0,39	94,51
4	S18	PZ98	DA01	51,01	50,50	50,76	50,27	4	50,64		0,32	0,63	96,53
5	F03	PZ98	DA01	51,10	51,04	50,51	51,12	4	50,94		0,29	0,57	97,11
6	A39	PZ98	DA02	51,38	51,24	51,46	51,35	4	51,36		0,09	0,18	97,90
7	A62x	PZ98	DA01	51,59	51,56	51,56	51,53	4	51,56		0,02	0,05	98,29
8	A49x	PZ98	DA02	51,59	51,76	51,92	51,09	4	51,59		0,36	0,70	98,35
9	A42	PZ98	DA01	51,80	51,90	52,10	52,16	4	51,99		0,17	0,33	99,11
10	F21	PZ98	DA01	52,26	51,90	52,12	52,23	4	52,13		0,16	0,31	99,37
11	A45x	PZ98	DA02	52,30	52,20	52,10	52,20	4	52,20		0,08	0,16	99,51
12	F26x	PZ98	DA02	52,30	52,40	52,20	52,30	4	52,30		0,08	0,16	99,70
13	A60x	PZ98	DA02	52,25	52,31	52,72	52,26	4	52,39		0,22	0,42	99,86
14	F16x	PC01	DB08	52,66	52,28	52,07	52,54	4	52,39		0,26	0,50	99,87
15	A61x	PZ98	DA02	52,33	52,35	52,47	52,45	4	52,40		0,07	0,13	99,89
16	A82	PZ98	DA02	52,39	52,54	52,45	52,32	4	52,43		0,09	0,18	99,94
17	F22	PZ98	DA02	52,35	52,66	52,58	52,11	4	52,43		0,25	0,47	99,94
18	A65	PZ98	DA02	52,50	52,70	52,70	52,30	4	52,55		0,19	0,36	100,18
19	F14x	PZ98	DA01	52,40	52,60	52,60	52,60	4	52,55		0,10	0,19	100,18
20	F05x	PZ98	DA01	52,60	52,60	52,60	52,60	4	52,60		0,00	0,00	100,27
21	F32x	PZ98	DA01	52,60	52,60	52,70	52,60	4	52,63		0,05	0,10	100,32
22	A57	PZ98	DA01	52,63	52,82	52,73	52,85	4	52,76		0,10	0,19	100,57
23	F19x	PZ98	DA01	52,00	52,90	52,90	53,30	4	52,78		0,55	1,04	100,61
24	F02x	PZ98	DA01	52,66	52,72	52,75	53,25	4	52,85		0,27	0,52	100,74
25	F08x	PZ98	DA01	52,93	52,94	52,93	52,97	4	52,94		0,02	0,04	100,93
26	A55	PZ98	DA01	53,00	53,60	52,90	52,40	4	52,98		0,49	0,93	100,99
27	F12x	PZ98	DA02	53,06	53,05	52,93	52,95	4	53,00		0,07	0,13	101,03
28	F07x	PZ98	DA01	53,95	52,38	52,64	53,07	4	53,01		0,69	1,30	101,06
29	A51	PZ98	DA02	53,39	53,37	53,26	53,21	4	53,31		0,09	0,16	101,62
30	F15x	PZ98	DA01	53,19	53,53	53,25	53,37	4	53,34		0,15	0,28	101,67
31	F33x	PZ98	DA02	53,45	53,31	53,60	53,50	4	53,47		0,12	0,23	101,92
32	A58x	PZ98	DA99	53,56	53,57	53,53	53,54	4	53,55		0,02	0,03	102,08
33	A56	PZ98	DA02	54,14	54,19	54,08	54,12	4	54,13		0,05	0,08	103,20
34	A89	PZ98	DA01	54,14	54,15	54,16	54,13	4	54,14		0,01	0,03	103,22
35	F27x	PZ98	DA01	54,60	53,84	53,73	54,70	4	54,22		0,50	0,93	103,36
36	F24x	PZ98	DA01	54,23	54,31	54,37	54,72	4	54,41		0,22	0,40	103,72
37	F18x	PZ98	DA99	55,20	55,20	54,20	55,20	4	54,95		0,50	0,91	104,75
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	N	Mean	SI	VI
all labs	148	**52,46**	**0,190**	**0,362**
5	% from the mean			

L	SR	VR
37	**1,314**	**2,504**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: C **Sample: 3** Unit: g/100g

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	F13x	PZ98	DA01	47,90	47,90	47,90	47,90	4	47,90	*	0,00	0,00	93,55
2	F25	PZ98	DA01	48,29	48,20	48,20	48,17	4	48,22	*	0,05	0,11	94,16
3	A59x	PZ98	DA02	48,38	48,31	48,33	48,34	4	48,34	*	0,03	0,06	94,40
4	S18	PZ98	DA01	49,72	49,44	48,93	49,35	4	49,36		0,33	0,66	96,40
5	A49x	PZ98	DA02	50,10	50,18	50,12	49,65	4	50,01		0,24	0,49	97,67
6	A62x	PZ98	DA01	50,33	50,20	49,96	50,29	4	50,20		0,17	0,33	98,03
7	F03	PZ98	DA01	51,08	50,52	50,71	50,65	4	50,74		0,24	0,47	99,09
8	F22	PZ98	DA02	50,86	51,07	51,04	50,62	4	50,90		0,21	0,41	99,40
9	A61x	PZ98	DA02	51,00	51,17	50,90	51,09	4	51,04		0,12	0,23	99,68
10	A65	PZ98	DA02	51,30	51,10	51,40	51,00	4	51,20		0,18	0,36	99,99
11	A42	PZ98	DA01	51,17	51,40	51,00	51,30	4	51,22		0,17	0,34	100,02
12	A39	PZ98	DA02	51,22	51,31	51,26	51,11	4	51,23		0,09	0,17	100,04
13	A45x	PZ98	DA02	51,40	51,20	51,20	51,10	4	51,23		0,13	0,25	100,04
14	A60x	PZ98	DA02	51,25	51,21	51,38	51,20	4	51,26		0,08	0,16	100,11
15	F21	PZ98	DA01	51,27	51,20	51,31	51,27	4	51,26		0,05	0,09	100,11
16	F19x	PZ98	DA01	50,70	51,40	51,60	51,40	4	51,28		0,39	0,77	100,14
17	A82	PZ98	DA02	51,28	51,37	51,26	51,22	4	51,28		0,06	0,12	100,15
18	F32x	PZ98	DA01	51,40	51,30	51,30	51,20	4	51,30		0,08	0,16	100,19
19	F16x	PC01	DB08	51,35	51,36	51,28	51,43	4	51,36		0,06	0,12	100,29
20	A57	PZ98	DA01	51,28	51,34	51,31	51,63	4	51,39		0,16	0,31	100,36
21	F07x	PZ98	DA01	52,74	51,06	51,09	50,75	4	51,41		0,90	1,75	100,40
22	F05x	PZ98	DA01	51,50	51,50	51,40	51,40	4	51,45		0,06	0,11	100,48
23	A55	PZ98	DA01	51,30	51,10	51,70	51,70	4	51,45		0,30	0,58	100,48
24	F33x	PZ98	DA02	51,34	51,56	51,68	51,45	4	51,51		0,15	0,28	100,59
25	F02x	PZ98	DA01	51,50	51,43	51,77	51,44	4	51,54		0,16	0,31	100,64
26	F27x	PZ98	DA01	51,90	51,90	51,16	51,37	4	51,58		0,38	0,73	100,74
27	F08x	PZ98	DA01	51,73	51,75	51,69	51,44	4	51,65		0,14	0,28	100,87
28	F14x	PZ98	DA01	51,90	51,80	51,30	51,70	4	51,68		0,26	0,51	100,92
29	F12x	PZ98	DA02	51,48	51,75	51,69	51,92	4	51,71		0,18	0,35	100,99
30	A51	PZ98	DA02	51,96	52,00	52,07	51,86	4	51,97		0,09	0,17	101,50
31	F15x	PZ98	DA01	52,20	52,56	52,02	52,15	4	52,23		0,23	0,44	102,01
32	A89	PZ98	DA01	52,29	52,30	52,28	52,31	4	52,30		0,01	0,03	102,13
33	A58x	PZ98	DA99	52,33	52,29	52,28	52,36	4	52,32		0,04	0,07	102,17
34	F24x	PZ98	DA01	52,41	52,44	52,57	52,92	4	52,59		0,23	0,44	102,70
35	F26x	PZ98	DA02	52,80	52,70	52,70	52,60	4	52,70		0,08	0,15	102,92
36	A56	PZ98	DA02	52,91	52,98	52,74	52,65	4	52,82		0,15	0,29	103,15
37	F18x	PZ98	DA99	54,00	52,00	53,00	53,00	4	53,00		0,82	1,54	103,51
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	N	Mean	SI	VI
all labs	148	**51,21**	**0,190**	**0,371**
5	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
37	**1,173**	**2,291**

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: C **Sample: 4** Unit: g/100g

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	F13x	PZ98	DA01	48,00	48,00	48,10	48,10	4	48,05	*	0,06	0,12	92,62
2	F14x	PZ98	DA01	48,30	48,60	49,40	48,20	4	48,63	*	0,54	1,12	93,73
3	F25	PZ98	DA01	48,71	48,74	48,73	48,74	4	48,73	*	0,01	0,03	93,93
4	A59x	PZ98	DA02	48,79	48,82	48,84	48,81	4	48,82	*	0,02	0,04	94,10
5	S18	PZ98	DA01	49,95	49,58	49,76	49,95	4	49,81		0,18	0,36	96,01
6	A62x	PZ98	DA01	50,63	50,53	50,79	50,65	4	50,65		0,11	0,21	97,63
7	A49x	PZ98	DA02	50,92	50,62	51,17	51,18	4	50,97		0,26	0,52	98,25
8	F22	PZ98	DA02	51,60	51,61	51,48	51,67	4	51,59		0,08	0,15	99,44
9	F03	PZ98	DA01	52,21	51,40	51,62	51,38	4	51,65		0,39	0,75	99,56
10	A39	PZ98	DA02	51,89	51,62	51,85	51,71	4	51,77		0,13	0,24	99,79
11	A60x	PZ98	DA02	51,62	52,05	51,92	51,94	4	51,88		0,18	0,35	100,01
12	F33x	PZ98	DA02	51,56	52,06	51,80	52,15	4	51,89		0,27	0,51	100,03
13	F21	PZ98	DA01	51,83	51,81	51,97	52,01	4	51,91		0,10	0,19	100,05
14	A65	PZ98	DA02	52,30	51,40	51,40	52,60	4	51,93		0,62	1,19	100,09
15	A42	PZ98	DA01	51,90	51,90	52,10	52,03	4	51,98		0,10	0,19	100,20
16	A82	PZ98	DA02	52,00	52,13	51,90	51,91	4	51,99		0,11	0,21	100,21
17	A45x	PZ98	DA02	52,10	52,00	52,00	52,10	4	52,05		0,06	0,11	100,33
18	F02x	PZ98	DA01	52,16	52,22	51,98	52,00	4	52,09		0,12	0,23	100,41
19	A61x	PZ98	DA02	52,04	51,99	52,20	52,16	4	52,10		0,10	0,18	100,42
20	A57	PZ98	DA01	52,16	52,17	52,17	52,15	4	52,16		0,01	0,02	100,55
21	F32x	PZ98	DA01	52,20	52,10	52,20	52,20	4	52,18		0,05	0,10	100,57
22	F05x	PZ98	DA01	52,20	52,20	52,20	52,20	4	52,20		0,00	0,00	100,62
23	F07x	PZ98	DA01	53,24	51,98	51,90	52,08	4	52,30		0,63	1,21	100,81
24	F08x	PZ98	DA01	52,21	52,38	52,45	52,24	4	52,32		0,11	0,22	100,85
25	F16x	PC01	DB08	52,44	52,32	52,07	52,47	4	52,33		0,18	0,35	100,86
26	F19x	PZ98	DA01	52,10	52,60	52,60	52,60	4	52,48		0,25	0,48	101,15
27	F27x	PZ98	DA01	52,85	52,42	52,53	52,74	4	52,64		0,20	0,37	101,46
28	A51	PZ98	DA02	52,84	52,66	52,64	52,44	4	52,65		0,16	0,31	101,48
29	F12x	PZ98	DA02	52,93	52,50	52,69	52,68	4	52,70		0,18	0,33	101,58
30	A55	PZ98	DA01	52,40	52,60	53,10	53,10	4	52,80		0,36	0,67	101,78
31	F15x	PZ98	DA01	53,04	52,67	53,21	52,69	4	52,90		0,27	0,50	101,97
32	A58x	PZ98	DA99	52,95	53,07	53,09	52,99	4	53,03		0,07	0,12	102,21
33	F26x	PZ98	DA02	53,10	53,20	53,20	53,30	4	53,20		0,08	0,15	102,55
34	F24x	PZ98	DA01	53,17	53,25	53,29	53,32	4	53,26		0,06	0,12	102,66
35	A56	PZ98	DA02	53,37	53,51	53,53	53,28	4	53,42		0,12	0,22	102,97
36	A89	PZ98	DA01	53,75	53,72	53,73	53,73	4	53,73		0,01	0,02	103,57
37	F18x	PZ98	DA99	55,30	54,20	55,30	54,20	4	54,75	*	0,64	1,16	105,54
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	N	Mean	SI	VI
all labs	148	**51,88**	**0,184**	**0,354**
5	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
37	**1,447**	**2,790**

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Zn **Sample: 1** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A89	PD02	DB10	23,33	24,12	23,10	23,86	0	23,60	*b*	*	0,47	1,99	76,36
2	A80	PD01	DB10	26,00	25,60	27,10	25,30	4	26,00		*	0,79	3,03	84,12
3	A79	PD03	DB10	26,31	26,30	26,05	26,25	4	26,23		*	0,12	0,46	84,86
4	A62x	PD02	DB99	26,79	30,02	24,94	29,42	4	27,79			2,36	8,50	89,92
5	F07x	PC01	DB08	28,99	28,39	27,37	27,94	4	28,17			0,69	2,44	91,15
6	F13x	PZ02	DD01	27,50	28,30	28,90	29,40	4	28,53			0,82	2,87	92,29
7	A60x	PC99	DB10	28,54	29,95	28,57	28,95	4	29,00			0,66	2,27	93,82
8	F19x	PD02	DB08	28,80	28,90	29,60	29,70	4	29,25			0,47	1,59	94,63
9	F20x	PD02	DB08	29,30	29,20	29,20	29,40	4	29,28			0,10	0,33	94,72
10	A49	PD05	DB08	30,80	30,80	30,10	27,10	4	29,70			1,76	5,94	96,09
11	A61x	PB02	DB08	30,30	29,30	30,40	29,80	4	29,95			0,51	1,69	96,90
12	F02x	PD02	DB08	31,10	29,40	30,60	29,20	4	30,08			0,92	3,06	97,30
13	A51	PD02	DB08	29,69	30,11	30,33	30,54	4	30,17			0,36	1,21	97,60
14	A39	PD02	DB08	29,65	30,15	31,05	29,91	4	30,19			0,61	2,01	97,68
15	F25	PB06	DB08	30,30	30,44	30,29	30,00	4	30,26			0,18	0,61	97,89
16	A55	PC01	DB10	30,66	30,16	30,11	30,43	4	30,34			0,26	0,84	98,16
17	F14x	PC01	DB08	31,09	30,87	30,31	30,68	4	30,74			0,33	1,08	99,45
18	A36	PD02	DB08	31,00	31,00	30,60	31,40	4	31,00			0,33	1,05	100,30
19	A65	PD01	DB08	31,40	31,40	31,10	31,00	4	31,23			0,21	0,66	101,02
20	F27	PD01	DB01	30,47	32,21	32,65	30,84	4	31,54			1,05	3,33	102,05
21	F03	PC02	DB08	32,08	31,61	32,07	31,75	4	31,88			0,24	0,74	103,14
22	F05x	PD02	DB08	32,90	31,50	31,70	31,50	4	31,90			0,67	2,11	103,21
23	F18x	PD01	DB10	32,00	32,30	31,90	31,70	4	31,98			0,25	0,78	103,45
24	F15x	PC01	DB08	31,00	33,00	33,00	31,00	4	32,00			1,15	3,61	103,53
25	F12x	PC01	DB09	32,34	31,87	32,35	31,89	4	32,11			0,27	0,84	103,90
26	A59x	PC01	DB08	31,77	33,04	31,20	32,58	4	32,15			0,82	2,55	104,01
27	A57	PZ98	DD02	32,60	32,50	32,50	32,30	4	32,48			0,13	0,39	105,07
28	F32	PD01	DB08	32,50	32,70	32,70	32,40	4	32,58			0,15	0,46	105,39
29	F08x	PC01	DB10	33,13	32,10	33,71	31,93	4	32,72			0,85	2,60	105,85
30	A45x	PZ99	DB08	32,80	33,50	32,80	32,40	4	32,88			0,46	1,39	106,36
31	F09	PZ02	DD02	32,80	33,91	33,42	32,64	4	33,19			0,58	1,76	107,39
32	F16x	PC01	DB08	33,19	32,36	34,91	32,49	4	33,24			1,17	3,53	107,54
33	A53	PZ02	DD01	33,10	33,20	33,30	33,40	4	33,25			0,13	0,39	107,58
34	F33x	PD01	DB10	33,85	33,98	35,48	34,29	4	34,40			0,74	2,16	111,30
35	A58x	PD02	DB01	33,26	35,12	34,64	35,89	4	34,73			1,11	3,18	112,36
36	A82	PC01	DB08	40,40	42,10	45,40	41,30	0	42,30	*b*	*	2,18	5,15	136,86
37	A56	PC01	DB08	69,23	84,62	61,36	64,45	0	69,91	*b*	*	10,33	14,77	226,20
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	N	Mean	SI	VI
all labs	136	**30,91**	**0,625**	**2,021**
15	% from the mean			
	L		SR	VR
	34		**2,102**	**6,802**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Zn **Sample: 2** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A80	PD01	DB10	23,80	21,40	16,80	21,30	4	20,83		*	2,92	14,03	75,09
2	A89	PD02	DB10	22,39	21,58	22,57	21,26	4	21,95		*	0,63	2,87	79,14
3	A79	PD03	DB10	24,18	23,65	23,85	23,64	4	23,83			0,25	1,06	85,92
4	A62x	PD02	DB99	23,12	21,36	27,17	24,08	4	23,93			2,43	10,17	86,29
5	F07x	PC01	DB08	25,27	24,72	24,39	24,64	4	24,76			0,37	1,50	89,26
6	F25	PB06	DB08	24,57	25,42	24,28	25,17	4	24,86			0,53	2,12	89,63
7	F20x	PD02	DB08	25,80	26,30	26,50	26,10	4	26,18			0,30	1,14	94,38
8	F33x	PD01	DB10	26,20	24,86	28,94	25,47	4	26,37			1,80	6,83	95,07
9	F19x	PD02	DB08	26,40	26,60	26,80	26,80	4	26,65			0,19	0,72	96,09
10	A39	PD02	DB08	27,36	26,95	27,47	27,17	4	27,24			0,23	0,83	98,21
11	A36	PD02	DB08	26,90	27,50	27,10	27,90	4	27,35			0,44	1,62	98,61
12	A60x	PC99	DB10	28,26	25,30	29,52	26,39	4	27,37			1,89	6,89	98,67
13	A45x	PZ99	DB08	27,50	27,60	27,80	27,00	4	27,48			0,34	1,24	99,06
14	F03	PC02	DB08	27,44	27,50	27,80	27,74	4	27,62			0,18	0,64	99,59
15	F05x	PD02	DB08	27,30	28,60	28,00	27,90	4	27,95			0,53	1,90	100,78
16	A49	PD05	DB08	26,60	27,80	29,40	28,10	4	27,98			1,15	4,11	100,87
17	A51	PD02	DB08	27,66	28,74	28,84	26,87	4	28,03			0,94	3,35	101,05
18	F13x	PZ02	DD01	27,50	28,00	28,40	28,30	4	28,05			0,40	1,44	101,14
19	F02x	PD02	DB08	29,00	29,40	26,60	27,80	4	28,20			1,26	4,49	101,68
20	F16x	PC01	DB08	28,68	27,99	27,81	28,46	4	28,24			0,40	1,43	101,80
21	A55	PC01	DB10	27,49	29,13	27,75	28,75	4	28,28			0,78	2,77	101,97
22	F12x	PC01	DB09	28,39	28,60	28,87	28,34	4	28,55			0,24	0,84	102,94
23	F09	PZ02	DD02	28,73	29,45	28,53	29,22	4	28,98			0,43	1,47	104,50
24	A61x	PB02	DB08	28,30	30,50	28,80	28,80	4	29,10			0,96	3,31	104,92
25	F14x	PC01	DB08	27,99	29,89	29,35	29,32	4	29,14			0,81	2,78	105,06
26	A59x	PC01	DB08	28,62	29,62	29,50	29,47	4	29,30			0,46	1,57	105,65
27	F08x	PC01	DB10	29,18	27,09	31,28	30,09	4	29,41			1,77	6,02	106,04
28	F27	PD01	DB01	25,85	35,39	28,59	28,31	4	29,54			4,09	13,86	106,49
29	A65	PD01	DB08	29,40	30,10	30,50	28,40	4	29,60			0,92	3,11	106,72
30	F18x	PD01	DB10	30,10	29,80	30,00	30,60	4	30,13			0,34	1,13	108,62
31	F32	PD01	DB08	30,50	29,70	30,80	29,80	4	30,20			0,54	1,77	108,89
32	F15x	PC01	DB08	30,00	30,00	29,00	32,00	4	30,25			1,26	4,16	109,07
33	A53	PZ02	DD01	30,70	30,70	30,60	30,30	4	30,58			0,19	0,62	110,24
34	A57	PZ98	DD02	31,00	30,00	31,00	30,70	4	30,68			0,47	1,54	110,60
35	A58x	PD02	DB01	32,57	30,04	32,34	33,72	4	32,17		*	1,54	4,79	115,98
36	A82	PC01	DB08	27,60	47,40	57,90	51,40	0	46,08	*b*	*	13,05	28,33	166,13
37	A56	PC01	DB08	53,90	51,38	47,53	42,47	0	48,82	*b*	*	4,98	10,20	176,03
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	N	Mean	SI	VI
all labs	140	**27,73**	**0,914**	**3,296**
15	% from the mean			
	L		SR	VR
	35		**2,472**	**8,912**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Zn **Sample: 3** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A89	PD02	DB10	35,13	37,68	36,87	36,66	0	36,59	*b*	*	1,07	2,91	77,73
2	A80	PD01	DB10	41,00	37,20	42,50	34,70	4	38,85		*	3,55	9,15	82,54
3	A79	PD03	DB10	39,48	39,64	39,50	39,27	4	39,47		*	0,15	0,39	83,87
4	F07x	PC01	DB08	44,52	43,97	42,96	43,52	4	43,74			0,66	1,52	92,94
5	F19x	PD02	DB08	43,10	43,60	44,90	44,70	4	44,08			0,87	1,96	93,64
6	A60x	PC99	DB10	44,79	44,34	43,81	44,71	4	44,41			0,45	1,00	94,36
7	A61x	PB02	DB08	44,50	44,30	43,70	45,40	4	44,48			0,70	1,58	94,49
8	F20x	PD02	DB08	44,80	45,10	45,00	45,50	4	45,10			0,29	0,65	95,82
9	F13x	PZ02	DD01	44,00	45,40	45,40	46,30	4	45,28			0,95	2,10	96,19
10	F25	PB06	DB08	45,74	46,04	44,71	45,62	4	45,53			0,57	1,26	96,73
11	A62x	PD02	DB99	54,39	47,78	40,27	40,37	0	45,70	*c*		6,78	14,83	97,10
12	A39	PD02	DB08	45,97	46,06	45,64	46,42	4	46,02			0,32	0,69	97,78
13	F18x	PD01	DB10	46,50	46,00	47,00	46,60	4	46,53			0,41	0,88	98,85
14	F05x	PD02	DB08	46,60	46,70	46,60	46,60	4	46,63			0,05	0,11	99,06
15	F02x	PD02	DB08	47,50	45,70	47,60	45,90	4	46,68			1,01	2,17	99,17
16	F03	PC02	DB08	46,45	47,15	46,73	46,56	4	46,72			0,31	0,66	99,27
17	A55	PC01	DB10	45,85	47,22	46,54	48,04	4	46,92			0,94	2,00	99,68
18	F27	PD01	DB01	46,39	46,52	47,73	47,23	4	46,97			0,63	1,34	99,79
19	A59x	PC01	DB08	47,35	47,28	46,53	46,73	4	46,97			0,40	0,86	99,80
20	F14x	PC01	DB08	47,49	46,79	47,30	47,87	4	47,36			0,45	0,95	100,63
21	A65	PD01	DB08	48,80	47,70	47,70	47,50	4	47,93			0,59	1,23	101,82
22	A36	PD02	DB08	47,20	47,40	48,30	48,80	4	47,93			0,75	1,57	101,82
23	A45x	PZ99	DB08	47,50	46,70	47,20	50,90	4	48,08			1,91	3,98	102,14
24	F15x	PC01	DB08	48,00	49,00	48,00	48,00	4	48,25			0,50	1,04	102,51
25	F08x	PC01	DB10	49,55	46,17	50,32	48,48	4	48,63			1,81	3,72	103,32
26	F09	PZ02	DD02	48,33	48,62	49,10	48,84	4	48,72			0,33	0,67	103,52
27	F16x	PC01	DB08	48,18	48,95	48,63	49,40	4	48,79			0,51	1,06	103,66
28	F12x	PC01	DB09	48,93	48,60	48,94	48,92	4	48,85			0,17	0,34	103,78
29	F32	PD01	DB08	50,00	49,60	50,00	49,50	4	49,78			0,26	0,53	105,75
30	A53	PZ02	DD01	49,90	50,00	50,20	49,90	4	50,00			0,14	0,28	106,23
31	A57	PZ98	DD02	50,00	50,30	50,00	49,90	4	50,05			0,17	0,35	106,34
32	A51	PD02	DB08	50,11	49,97	49,81	51,05	4	50,24			0,56	1,11	106,73
33	A58x	PD02	DB01	49,11	52,59	50,49	49,06	4	50,31			1,66	3,29	106,90
34	F33x	PD01	DB10	55,75	50,94	49,05	50,83	4	51,64			2,87	5,56	109,72
35	A49	PD05	DB08	47,50	49,60	55,20	56,90	4	52,30			4,47	8,54	111,12
36	A82	PC01	DB08	48,90	84,30	85,50	91,30	0	77,50	*b*	*	19,31	24,92	164,66
37	A56	PC01	DB08	97,27	74,89	65,95	72,56	0	77,67	*b*	*	13,60	17,51	165,02
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	N	Mean	SI	VI
all labs	132	**47,07**	**0,892**	**1,895**
15	% from the mean			
	L		SR	VR
	33		**2,955**	**6,277**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Zn **Sample: 4** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A89	PD02	DB10	23,50	23,55	24,12	24,09	0	23,82	*b*	*	0,34	1,41	76,96
2	A62x	PD02	DB99	25,30	23,69	27,59	26,35	4	25,73		*	1,65	6,42	83,16
3	A80	PD01	DB10	26,60	24,80	26,30	25,50	4	25,80		*	0,81	3,15	83,37
4	A79	PD03	DB10	27,60	26,59	26,52	26,48	4	26,80			0,54	2,00	86,60
5	F07x	PC01	DB08	28,60	28,32	28,37	28,81	4	28,53			0,23	0,79	92,18
6	F19x	PD02	DB08	29,20	29,50	29,00	29,20	4	29,23			0,21	0,71	94,44
7	A61x	PB02	DB08	30,10	29,90	28,70	29,00	4	29,43			0,68	2,31	95,09
8	F25	PB06	DB08	29,51	29,27	29,58	29,40	4	29,44			0,14	0,46	95,14
9	F20x	PD02	DB08	29,80	29,80	30,40	29,70	4	29,93			0,32	1,07	96,70
10	A60x	PC99	DB10	30,61	29,27	30,92	29,20	4	30,00			0,89	2,98	96,94
11	F18x	PD01	DB10	30,10	29,80	29,90	30,20	4	30,00			0,18	0,61	96,95
12	A39	PD02	DB08	29,84	29,13	30,17	30,92	4	30,02			0,74	2,48	96,99
13	F05x	PD02	DB08	30,50	30,60	30,40	30,50	4	30,50			0,08	0,27	98,56
14	A58x	PD02	DB01	30,60	30,80	31,13	30,03	4	30,64			0,46	1,51	99,01
15	A51	PD02	DB08	31,09	30,56	30,70	30,72	4	30,77			0,23	0,74	99,43
16	F02x	PD02	DB08	31,30	30,90	30,60	31,00	4	30,95			0,29	0,93	100,02
17	F14x	PC01	DB08	31,38	30,99	30,57	30,97	4	30,98			0,33	1,07	100,10
18	A55	PC01	DB10	30,99	31,00	30,96	31,00	4	30,99			0,02	0,07	100,13
19	A45x	PZ99	DB08	31,30	31,40	31,20	30,80	4	31,18			0,26	0,84	100,74
20	A65	PD01	DB08	31,30	31,30	31,40	31,10	4	31,28			0,13	0,40	101,07
21	F27	PD01	DB01	29,09	35,38	32,86	29,76	4	31,77			2,91	9,17	102,67
22	A36	PD02	DB08	32,10	31,50	31,40	32,30	4	31,83			0,44	1,39	102,84
23	F03	PC02	DB08	31,83	32,14	31,87	31,82	4	31,92			0,15	0,47	103,13
24	F16x	PC01	DB08	32,15	33,21	30,90	32,04	4	32,08			0,94	2,94	103,65
25	F12x	PC01	DB09	32,21	32,13	33,23	31,43	4	32,25			0,74	2,30	104,22
26	A49	PD05	DB08	33,00	30,90	35,70	29,80	4	32,35			2,60	8,03	104,54
27	F13x	PZ02	DD01	32,10	32,20	32,50	33,00	4	32,45			0,40	1,25	104,86
28	A57	PZ98	DD02	32,50	33,00	32,70	31,80	4	32,50			0,51	1,57	105,02
29	A59x	PC01	DB08	33,24	32,90	31,94	32,12	4	32,55			0,62	1,91	105,19
30	F15x	PC01	DB08	34,00	33,00	32,00	32,00	4	32,75			0,96	2,92	105,83
31	A53	PZ02	DD01	33,10	33,00	33,50	33,00	4	33,15			0,24	0,72	107,13
32	F32	PD01	DB08	33,20	33,10	33,20	33,30	4	33,20			0,08	0,25	107,29
33	F33x	PD01	DB10	31,80	31,70	36,98	34,07	4	33,64			2,48	7,38	108,70
34	F08x	PC01	DB10	33,12	36,22	31,91	33,54	4	33,70			1,82	5,40	108,90
35	F09	PZ02	DD02	33,14	34,21	33,63	34,44	4	33,86			0,59	1,73	109,40
36	A56	PC01	DB08	48,29	56,91	58,50	52,08	0	53,94	*b*	*	4,66	8,63	174,32
37	A82	PC01	DB08	*61,8a*	54,30	52,80	52,00	0	53,03	*b*	*	1,17	2,20	171,38
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	N	Mean	SI	VI
all labs	136	**30,95**	**0,696**	**2,251**
15	% from the mean			
	L		SR	VR
	34		**2,056**	**6,645**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Mn **Sample: 1** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	Replications 2	Replications 3	Replications 4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	A62x	PD02	DB99	605,80	695,30	555,90	636,70	0	623,43	*b*	*	58,35	9,36	73,70
2	A89	PD02	DB08	639,50	640,50	640,00	640,30	0	640,08	*b*	*	0,43	0,07	75,67
3	A79	PD03	DB10	759,80	756,30	745,00	752,80	4	753,48			6,33	0,84	89,08
4	A43	PB06	DB01	786,00	786,00	791,00	790,00	4	788,25			2,63	0,33	93,19
5	A45x	PZ99	DB08	801,00	804,00	792,00	802,00	4	799,75			5,32	0,66	94,55
6	A82	PD01	DB08	808,00	804,00	782,00	806,00	4	800,00			12,11	1,51	94,58
7	A61x	PB02	DB08	787,80	796,70	810,90	814,40	4	802,45			12,41	1,55	94,87
8	F18x	PD01	DB08	804,00	804,00	806,00	808,00	4	805,50			1,91	0,24	95,23
9	A56	PC01	DB08	817,00	812,85	814,38	803,28	4	811,88			5,98	0,74	95,98
10	F19x	PD02	DB08	827,00	824,00	827,00	822,00	4	825,00			2,45	0,30	97,53
11	F14x	PC01	DB08	828,60	823,40	839,20	823,70	4	828,73			7,38	0,89	97,97
12	F05x	PD02	DB08	832,00	827,00	833,00	829,00	4	830,25			2,75	0,33	98,15
13	A59x	PC01	DB08	822,42	835,34	836,82	838,11	4	833,17			7,26	0,87	98,50
14	A36	PD02	DB08	828,00	832,00	828,00	848,00	4	834,00			9,52	1,14	98,60
15	F07x	PC01	DB08	853,20	869,70	813,80	827,60	4	841,08			25,11	2,99	99,43
16	F13x	PD01	DB08	837,00	845,00	843,00	850,00	4	843,75			5,38	0,64	99,75
17	F15x	PC01	DB08	834,00	848,00	849,00	848,00	4	844,75			7,18	0,85	99,87
18	A58x	PD02	DB01	844,17	847,17	843,57	847,77	4	845,67			2,11	0,25	99,98
19	F20x	PD02	DB08	848,00	845,00	848,00	845,00	4	846,50			1,73	0,20	100,08
20	A51	PD02	DB08	827,60	844,30	837,50	876,90	4	846,58			21,35	2,52	100,08
21	F03	PC02	DB08	845,23	847,46	844,03	850,06	4	846,70			2,66	0,31	100,10
22	F12x	PC01	DB08	860,00	835,00	836,00	859,00	4	847,50			13,87	1,64	100,19
23	F27	PD01	DB01	820,90	827,80	894,60	881,70	4	856,25			37,32	4,36	101,23
24	A57	PZ98	DD02	859,50	857,20	863,30	854,10	4	858,53			3,88	0,45	101,50
25	F33x	PD01	DB10	833,90	848,30	861,60	890,70	4	858,63			24,19	2,82	101,51
26	F02x	PD02	DB08	883,00	843,00	874,00	835,00	4	858,75			23,33	2,72	101,52
27	A60x	PD01	DB10	833,65	884,11	899,23	832,86	4	862,46			34,29	3,98	101,96
28	A39	PC02	DB08	887,16	855,98	853,22	866,61	4	865,74			15,40	1,78	102,35
29	A65	PD01	DB08	869,00	865,00	866,00	863,00	4	865,75			2,50	0,29	102,35
30	F09	PZ02	DD02	865,90	879,40	872,80	869,30	4	871,85			5,77	0,66	103,07
31	A49	PD05	DB08	896,00	855,00	878,00	880,00	4	877,25			16,88	1,92	103,71
32	F08x	PC01	DB10	872,23	888,20	882,77	874,39	4	879,40			7,42	0,84	103,96
33	A80	PD01	DB10	877,00	866,00	913,00	865,00	4	880,25			22,50	2,56	104,07
34	A53	PZ02	DD01	878,00	880,00	886,00	879,00	4	880,75			3,59	0,41	104,12
35	F16x	PC01	DB08	913,90	892,40	862,50	887,50	4	889,08			21,10	2,37	105,11
36	F32	PD01	DB08	914,00	908,00	898,00	907,00	4	906,75			6,60	0,73	107,20
37	A55	PC01	DB08	917,52	922,56	919,36	915,69	4	918,78			2,93	0,32	108,62
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	N	Mean	SI	VI
all labs	140	**845,86**	**10,947**	**1,294**
15	% from the mean			
	L		SR	VR
	35		**34,214**	**4,045**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Mn **Sample: 2** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	Replications 2	Replications 3	Replications 4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	A62x	PD02	DB99	46,61	41,45	54,33	53,40	0	48,95	*b*	*	6,07	12,40	47,34
2	A58x	PD02	DB01	80,22	79,12	82,44	80,63	0	80,60	*b*	*	1,38	1,71	77,95
3	A89	PD02	DB08	83,50	85,30	85,40	83,50	0	84,43	*b*	*	1,07	1,27	81,65
4	A79	PD03	DB10	90,97	90,14	90,22	89,53	4	90,22			0,59	0,65	87,25
5	A43	PB06	DB01	98,60	94,80	92,10	96,70	4	95,55			2,77	2,90	92,41
6	F07x	PC01	DB08	95,60	96,55	102,60	92,44	4	96,80			4,25	4,39	93,61
7	F18x	PD01	DB08	97,90	97,10	95,30	98,30	4	97,15			1,33	1,37	93,96
8	A80	PD01	DB10	111,00	96,60	83,70	98,10	4	97,35			11,16	11,47	94,15
9	F20x	PD02	DB08	96,20	98,00	99,50	96,50	4	97,55			1,52	1,56	94,34
10	F14x	PC01	DB08	98,90	96,90	97,50	97,50	4	97,70			0,85	0,87	94,49
11	F09	PZ02	DD02	97,80	99,40	98,60	98,20	4	98,50			0,68	0,69	95,26
12	A45x	PZ99	DB08	99,70	99,40	98,00	97,30	4	98,60			1,14	1,16	95,36
13	F19x	PD02	DB08	99,60	99,50	101,00	97,90	4	99,50			1,27	1,27	96,23
14	F33x	PD01	DB10	96,00	95,90	106,90	100,00	4	99,70			5,17	5,18	96,42
15	F03	PC02	DB08	101,01	97,98	100,95	99,35	4	99,82			1,45	1,45	96,54
16	A49	PD05	DB08	97,70	104,40	101,10	97,30	4	100,13			3,32	3,32	96,83
17	A59x	PC01	DB08	101,91	101,48	104,73	102,74	4	102,72			1,44	1,40	99,34
18	A56	PC01	DB08	102,97	101,06	107,47	99,89	4	102,85			3,33	3,24	99,46
19	A36	PD02	DB08	101,00	104,00	103,00	105,00	4	103,25			1,71	1,65	99,85
20	F05x	PD02	DB08	104,00	103,00	104,00	104,00	4	103,75			0,50	0,48	100,34
21	A60x	PD01	DB10	103,62	103,17	104,87	103,83	4	103,87			0,72	0,69	100,46
22	F08x	PC01	DB10	108,43	106,91	103,06	97,89	4	104,07			4,70	4,51	100,65
23	F15x	PC01	DB08	106,00	101,00	101,00	112,00	4	105,00			5,23	4,98	101,55
24	F02x	PD02	DB08	105,00	112,00	99,00	105,00	4	105,25			5,32	5,05	101,79
25	A51	PD02	DB08	105,40	103,20	106,50	108,00	4	105,78			2,02	1,91	102,30
26	F27	PD01	DB01	100,10	102,30	110,80	110,00	4	105,80			5,40	5,10	102,32
27	F12x	PC01	DB08	106,00	107,00	106,00	106,00	4	106,25			0,50	0,47	102,76
28	A82	PD01	DB08	96,30	105,00	112,00	112,00	4	106,33			7,45	7,01	102,83
29	F16x	PC01	DB08	106,50	108,50	106,20	108,30	4	107,38			1,19	1,11	103,84
30	F13x	PD01	DB08	110,00	105,00	108,00	108,00	4	107,75			2,06	1,91	104,21
31	A39	PC02	DB08	108,82	109,32	108,13	106,80	4	108,27			1,09	1,01	104,71
32	A57	PZ98	DD02	111,10	105,70	110,80	109,70	4	109,33			2,49	2,28	105,73
33	A65	PD01	DB08	110,00	111,00	115,00	106,00	4	110,50			3,70	3,35	106,87
34	A55	PC01	DB08	111,76	110,54	108,97	112,31	4	110,90			1,48	1,34	107,25
35	A53	PZ02	DD01	114,00	112,00	110,00	111,00	4	111,75			1,71	1,53	108,08
36	A61x	PB02	DB08	113,60	110,30	113,20	110,00	4	111,78			1,89	1,69	108,10
37	F32	PD01	DB08	117,00	112,00	112,00	117,00	4	114,50			2,89	2,52	110,73
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	N	Mean	SI	VI
all labs	136	**103,40**	**2,715**	**2,626**
15	% from the mean			
	L		SR	VR
	34		**5,559**	**5,376**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Mn **Sample: 3** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A62x	PD02	DB99	*1132a*	871	868	872	0	870,1	*b*	*	2,42	0,28	54,34
2	A89	PD02	DB08	1036	1158	1157	1037	0	1097,0	*b*	*	69,86	6,37	68,51
3	A79	PD03	DB10	1393	1399	1397	1391	0	1395,0	*b*		3,65	0,26	87,12
4	A45x	PZ99	DB08	1450	1500	1460	1490	4	1475,0			23,80	1,61	92,11
5	A43	PB06	DB01	1489	1500	1489	1492	4	1492,5			5,20	0,35	93,20
6	A82	PD01	DB08	1486	1526	1517	1504	4	1508,3			17,37	1,15	94,19
7	A56	PC01	DB08	1500	1526	1502	1518	4	1511,6			12,51	0,83	94,40
8	F18x	PD01	DB08	1530	1520	1530	1530	4	1527,5			5,00	0,33	95,39
9	A39	PC02	DB08	1543	1619	1539	1534	4	1558,7			40,65	2,61	97,34
10	F27	PD01	DB01	1529	1531	1641	1608	4	1577,2			56,16	3,56	98,49
11	F15x	PC01	DB08	1567	1600	1560	1585	4	1578,0			18,06	1,14	98,54
12	F14x	PC01	DB08	1572	1575	1590	1577	4	1578,5			7,94	0,50	98,57
13	F19x	PD02	DB08	1550	1570	1600	1600	4	1580,0			24,49	1,55	98,67
14	A61x	PB02	DB08	1587	1591	1581	1567	4	1581,5			10,30	0,65	98,76
15	A59x	PC01	DB08	1571	1585	1625	1564	4	1586,0			27,05	1,71	99,04
16	F13x	PD01	DB08	1615	1573	1586	1585	4	1589,8			17,84	1,12	99,28
17	A53	PZ02	DD01	1590	1590	1600	1580	4	1590,0			8,16	0,51	99,29
18	F09	PZ02	DD02	1599	1602	1592	1596	4	1597,4			4,26	0,27	99,75
19	A80	PD01	DB10	1697	1528	1739	1440	0	1601,0	*c*		140,84	8,80	99,98
20	F07x	PC01	DB08	1621	1668	1550	1587	4	1606,5			50,22	3,13	100,32
21	F08x	PC01	DB10	1621	1597	1614	1602	4	1608,3			11,06	0,69	100,44
22	F12x	PC01	DB08	1602	1592	1626	1616	4	1609,0			15,01	0,93	100,48
23	A57	PZ98	DD02	1607	1621	1607	1606	4	1610,3			6,91	0,43	100,56
24	F05x	PD02	DB08	1620	1610	1610	1610	4	1612,5			5,00	0,31	100,70
25	A36	PD02	DB08	1603	1600	1623	1630	4	1614,0			14,76	0,91	100,79
26	F20x	PD02	DB08	1610	1610	1630	1610	4	1615,0			10,00	0,62	100,85
27	F16x	PC01	DB08	1584	1578	1593	1706	4	1615,3			60,81	3,76	100,87
28	A65	PD01	DB08	1647	1599	1608	1611	4	1616,3			21,12	1,31	100,93
29	F03	PC02	DB08	1628	1620	1621	1615	4	1620,8			5,10	0,31	101,22
30	A60x	PD01	DB10	1641	1644	1566	1657	4	1627,2			41,02	2,52	101,61
31	F33x	PD01	DB10	1720	1685	1616	1516	4	1634,2			89,81	5,50	102,05
32	F02x	PD02	DB08	1662	1598	1675	1628	4	1640,8			34,71	2,12	102,46
33	A58x	PD02	DB01	1647	1650	1645	1655	4	1649,1			4,22	0,26	102,98
34	A51	PD02	DB08	1666	1663	1645	1675	4	1662,1			12,88	0,78	103,79
35	A55	PC01	DB08	1699	1718	1702	1702	4	1705,2			8,96	0,53	106,49
36	A49	PD05	DB08	1738	1723	1671	1726	4	1714,5			29,72	1,73	107,07
37	F32	PD01	DB08	1765	1743	1743	1754	4	1751,3			10,53	0,60	109,36
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	N	Mean	SI	VI
all labs	132	**1601,33**	**21,535**	**1,345**
15	% from the mean			
	L		SR	VR
	33		**59,061**	**3,688**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Mn **Sample: 4** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A62x	PD02	DB99	596,40	568,60	546,60	560,50	0	568,03	*b*	*	20,99	3,69	64,92
2	A89	PD02	DB08	669,00	*648a*	667,00	667,00	0	667,67	*b*	*	1,15	0,17	76,30
3	A79	PD03	DB10	776,20	768,70	769,50	772,90	4	771,83			3,44	0,45	88,21
4	A56	PC01	DB08	829,75	822,08	810,61	809,87	4	818,08			9,58	1,17	93,49
5	A39	PC02	DB08	823,14	827,20	822,36	833,50	4	826,55			5,10	0,62	94,46
6	F18x	PD01	DB08	828,00	833,00	835,00	833,00	4	832,25			2,99	0,36	95,11
7	A82	PD01	DB08	838,00	843,00	836,00	834,00	4	837,75			3,86	0,46	95,74
8	A43	PB06	DB01	824,00	845,00	836,00	850,00	4	838,75			11,41	1,36	95,86
9	A45x	PZ99	DB08	833,00	844,00	838,00	852,00	4	841,75			8,18	0,97	96,20
10	F27	PD01	DB01	843,30	813,60	870,10	865,40	4	848,10			25,80	3,04	96,93
11	A61x	PB02	DB08	857,30	845,70	852,60	853,70	4	852,33			4,85	0,57	97,41
12	F14x	PC01	DB08	857,50	852,80	856,20	855,10	4	855,40			1,99	0,23	97,76
13	F19x	PD02	DB08	868,00	864,00	859,00	869,00	4	865,00			4,55	0,53	98,86
14	F15x	PC01	DB08	851,00	889,00	854,00	868,00	4	865,50			17,33	2,00	98,91
15	F03	PC02	DB08	877,24	864,70	871,15	850,00	4	865,77			11,70	1,35	98,94
16	F05x	PD02	DB08	866,00	873,00	870,00	866,00	4	868,75			3,40	0,39	99,29
17	A65	PD01	DB08	872,00	872,00	877,00	864,00	4	871,25			5,38	0,62	99,57
18	F13x	PD01	DB08	877,00	871,00	859,00	878,00	4	871,25			8,73	1,00	99,57
19	A58x	PD02	DB01	880,27	877,13	877,64	873,94	4	877,25			2,60	0,30	100,26
20	F20x	PD02	DB08	880,00	873,00	893,00	870,00	4	879,00			10,23	1,16	100,46
21	A59x	PC01	DB08	889,56	883,80	857,84	887,35	4	879,64			14,72	1,67	100,53
22	A57	PZ98	DD02	881,90	887,40	890,70	872,80	4	883,20			7,83	0,89	100,94
23	F33x	PD01	DB10	852,40	868,10	885,60	931,80	4	884,48			34,34	3,88	101,08
24	F07x	PC01	DB08	885,50	892,40	882,50	883,50	4	885,98			4,46	0,50	101,25
25	F12x	PC01	DB08	893,00	868,00	900,00	884,00	4	886,25			13,82	1,56	101,29
26	A36	PD02	DB08	892,00	886,00	886,00	896,00	4	890,00			4,90	0,55	101,71
27	A60x	PD01	DB10	906,73	893,20	889,45	886,33	4	893,93			8,99	1,01	102,16
28	F09	PZ02	DD02	884,30	907,90	893,10	903,70	4	897,25			10,65	1,19	102,54
29	A49	PD05	DB08	896,00	903,00	890,00	902,00	4	897,75			6,02	0,67	102,60
30	A80	PD01	DB10	930,00	865,00	927,00	883,00	4	901,25			32,34	3,59	103,00
31	A53	PZ02	DD01	899,00	907,00	901,00	900,00	4	901,75			3,59	0,40	103,06
32	A51	PD02	DB08	892,09	890,10	903,80	925,80	4	902,95			16,39	1,82	103,19
33	F08x	PC01	DB10	922,63	901,04	891,36	916,13	4	907,79			14,20	1,56	103,75
34	F02x	PD02	DB08	930,00	905,00	901,00	906,00	4	910,50			13,18	1,45	104,06
35	F16x	PC01	DB08	929,00	860,40	923,40	931,80	4	911,15			34,01	3,73	104,13
36	F32	PD01	DB08	963,00	934,00	916,00	925,00	4	934,50			20,37	2,18	106,80
37	A55	PC01	DB08	980,22	970,32	962,12	968,56	4	970,31			7,49	0,77	110,89
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	N	Mean	SI	VI
all labs	140	**875,01**	**11,097**	**1,268**
15	% from the mean			
	L		SR	VR
	35		**36,107**	**4,126**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Fe **Sample: 1** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A61x	PB02	DB08	107,50	99,90	98,70	99,90	4	101,50			4,04	3,98	89,44
2	A79	PD03	DB10	102,70	101,70	101,50	102,70	4	102,15			0,64	0,63	90,01
3	F20x	PD02	DB08	105,00	104,00	103,00	104,00	4	104,00			0,82	0,79	91,64
4	A62x	PD02	DB99	103,50	116,60	91,96	110,20	4	105,57			10,53	9,97	93,02
5	F15x	PC01	DB08	104,00	*138a*	108,00	105,00	3	105,67			2,08	1,97	93,11
6	F02x	PD02	DB08	109,00	103,00	109,00	103,00	4	106,00			3,46	3,27	93,40
7	A45x	PZ99	DB08	107,00	108,00	109,00	106,00	4	107,50			1,29	1,20	94,73
8	A39	PD02	DB08	107,82	110,37	111,95	110,31	4	110,11			1,71	1,55	97,03
9	A36	PD02	DB08	112,00	108,00	110,00	113,00	4	110,75			2,22	2,00	97,59
10	A55	PC01	DB08	112,01	110,10	110,50	110,39	4	110,75			0,86	0,77	97,59
11	F19x	PD02	DB08	109,00	118,00	106,00	110,00	4	110,75			5,12	4,63	97,59
12	F03	PC02	DB08	113,74	112,09	109,28	109,19	4	111,08			2,23	2,01	97,88
13	F13x	PD01	DB08	112,00	112,00	109,00	112,00	4	111,25			1,50	1,35	98,03
14	F18x	PD99	DB08	111,00	112,00	112,00	111,00	4	111,50			0,58	0,52	98,25
15	F07x	PC01	DB08	111,30	113,40	112,80	108,70	4	111,55			2,10	1,88	98,30
16	A49	PD03	DB08	117,00	112,00	113,00	107,00	4	112,25			4,11	3,66	98,91
17	F05x	PD02	DB08	113,00	113,00	113,00	112,00	4	112,75			0,50	0,44	99,35
18	A51	PD02	DB08	110,80	113,00	114,20	113,70	4	112,93			1,50	1,33	99,51
19	F27	PD01	DB01	105,20	110,70	119,50	116,70	4	113,03			6,38	5,64	99,59
20	F14x	PC01	DB08	112,70	112,90	112,80	113,70	4	113,03			0,46	0,40	99,59
21	A59x	PC01	DB08	114,89	114,58	112,38	112,67	4	113,63			1,29	1,13	100,13
22	F25	PB06	DB08	115,20	114,30	114,10	113,70	4	114,33			0,63	0,55	100,74
23	F16x	PC01	DB08	116,30	112,00	112,10	120,80	4	115,30			4,18	3,62	101,60
24	A89	PD02	DB08	115,50	117,80	113,60	122,20	4	117,28			3,71	3,16	103,34
25	F09	PZ02	DD02	117,90	115,50	116,20	119,70	4	117,33			1,88	1,60	103,38
26	F12x	PC01	DB08	118,00	118,00	117,00	118,00	4	117,75			0,50	0,42	103,76
27	F08x	PC01	DB10	125,03	113,43	120,46	116,57	4	118,87			5,01	4,22	104,75
28	A80	PD01	DB10	122,00	112,00	124,00	118,00	4	119,00			5,29	4,45	104,86
29	A53	PZ02	DD01	119,00	119,00	120,00	120,00	4	119,50			0,58	0,48	105,30
30	A65	PD01	DB08	118,60	123,80	120,30	119,20	4	120,48			2,33	1,93	106,16
31	A82	PD01	DB08	121,00	120,00	120,00	123,00	4	121,00			1,41	1,17	106,62
32	A58x	PD02	DB01	120,38	121,85	125,18	122,49	4	122,48			2,01	1,64	107,92
33	F32x	PD01	DB08	124,00	122,00	120,00	125,00	4	122,75			2,22	1,81	108,16
34	A57	PZ98	DD02	122,40	122,90	124,00	122,50	4	122,95			0,73	0,60	108,34
35	A60x	PD01	DB10	118,14	125,85	124,17	125,00	4	123,29			3,50	2,84	108,64
36	A56	PC01	DB08	119,82	127,54	128,52	156,76	0	133,16	*c*		16,21	12,17	117,34
37	F33x	PD01	DB10	137,43	140,74	143,27	146,58	0	142,01	*b*	*	3,88	2,73	125,13
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	N	Mean	SI	VI
all labs	139	**113,48**	**2,497**	**2,200**
20	% from the mean			
	L		SR	VR
	35		**6,033**	**5,319**

* = non tolerable mean because more than +/-

17th Needle/Leaf Interlaboratory Comparison Test 2014/2015

Element: Fe **Sample: 2** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	Replications 2	Replications 3	Replications 4	n	Lab.mean		Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	F25	PB06	DB08	107,10	106,70	108,60	107,00	0	107,35	*b* *	0,85	0,79	40,57
2	A62x	PD02	DB99	164,60	152,20	196,60	170,30	4	170,93	*	18,71	10,95	64,60
3	F20x	PD02	DB08	180,00	197,00	202,00	181,00	4	190,00	*	11,17	5,88	71,81
4	F02x	PD02	DB08	205,00	214,00	181,00	195,00	4	198,75	*	14,15	7,12	75,12
5	F03	PC02	DB08	202,10	196,40	198,87	201,03	4	199,60	*	2,52	1,26	75,44
6	F33x	PD01	DB10	198,12	200,92	229,91	202,26	4	207,80	*	14,84	7,14	78,54
7	A80	PD01	DB10	243,00	214,00	163,00	216,00	4	209,00	*	33,40	15,98	78,99
8	F13x	PD01	DB08	214,00	246,00	217,00	228,00	4	226,25		14,48	6,40	85,51
9	F19x	PD02	DB08	228,00	229,00	237,00	221,00	4	228,75		6,55	2,86	86,46
10	A51	PD02	DB08	226,70	233,40	245,00	231,70	4	234,20		7,74	3,31	88,52
11	A39	PD02	DB08	238,75	239,57	224,49	240,04	4	235,71		7,50	3,18	89,09
12	F05x	PD02	DB08	233,00	237,00	239,00	235,00	4	236,00		2,58	1,09	89,20
13	F27	PD01	DB01	205,90	267,00	238,90	239,90	4	237,93		25,01	10,51	89,93
14	F18x	PD99	DB08	231,00	244,00	231,00	247,00	4	238,25		8,46	3,55	90,05
15	A36	PD02	DB08	257,00	246,00	268,00	263,00	4	258,50		9,47	3,66	97,70
16	A79	PD03	DB10	254,10	264,30	262,70	257,50	4	259,65		4,70	1,81	98,14
17	F07x	PC01	DB08	275,90	264,80	257,70	254,80	4	263,30		9,39	3,57	99,52
18	A45x	PZ99	DB08	268,00	258,00	267,00	268,00	4	265,25		4,86	1,83	100,25
19	A61x	PB02	DB08	262,30	269,50	265,10	267,00	4	265,98		3,04	1,14	100,53
20	A89	PD02	DB08	271,20	266,40	270,90	260,80	4	267,33		4,87	1,82	101,04
21	A60x	PD01	DB10	278,78	265,17	265,77	273,36	4	270,77		6,51	2,40	102,34
22	A58x	PD02	DB01	280,12	277,65	279,52	281,70	4	279,75		1,67	0,60	105,73
23	F12x	PC01	DB08	280,00	282,00	283,00	281,00	4	281,50		1,29	0,46	106,40
24	F16x	PC01	DB08	292,40	272,30	285,50	278,00	4	282,05		8,77	3,11	106,60
25	A59x	PC01	DB08	276,29	280,00	276,79	298,53	4	282,90		10,55	3,73	106,93
26	F15x	PC01	DB08	301,00	293,00	277,00	296,00	4	291,75		10,37	3,56	110,27
27	A49	PD03	DB08	289,00	300,00	295,00	285,00	4	292,25		6,60	2,26	110,46
28	A53	PZ02	DD01	301,00	303,00	287,00	297,00	4	297,00		7,12	2,40	112,25
29	F09	PZ02	DD02	307,23	318,12	304,58	313,60	4	310,88		6,13	1,97	117,50
30	F32x	PD01	DB08	314,00	303,00	311,00	318,00	4	311,50		6,35	2,04	117,74
31	A56	PC01	DB08	323,68	301,73	324,40	306,71	4	314,13		11,63	3,70	118,73
32	A57	PZ98	DD02	320,50	302,30	322,40	316,50	4	315,43		9,09	2,88	119,22
33	A65	PD01	DB08	291,50	323,50	344,90	309,70	4	317,40		22,54	7,10	119,97
34	A82	PD01	DB08	262,00	328,00	343,00	342,00	4	318,75	*	38,45	12,06	120,48
35	F08x	PC01	DB10	319,60	332,40	309,80	317,88	4	319,92	*	9,35	2,92	120,92
36	A55	PC01	DB08	328,68	321,61	308,93	324,87	4	321,02	*	8,56	2,67	121,33
37	F14x	PC01	DB08	304,30	334,70	332,80	326,60	4	324,60	*	13,97	4,30	122,69
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	N	Mean	SI	VI
all labs	144	**264,58**	**10,622**	**4,015**
20	% from the mean			
	L		SR	VR
	36		**43,000**	**16,253**

* = non tolerable mean because more than +/-

17th Needle/Leaf Interlaboratory Comparison Test 2014/2015

Element: Fe **Sample: 3** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A62x	PD02	DB99	*29,65a*	20,41	21,61	21,24	0	21,09	*b*	*	0,61	2,91	44,36
2	A57	PZ98	DD02	32,60	*33,1a*	32,60	32,70	0	32,63	*b*	*	0,06	0,18	68,66
3	A58x	PD02	DB01	33,43	33,11	*36,43a*	33,18	0	33,24	*b*	*	0,17	0,51	69,93
4	A79	PD03	DB10	41,06	41,32	41,11	41,13	4	41,16			0,11	0,28	86,58
5	F20x	PD02	DB08	43,10	42,30	42,40	44,40	4	43,05			0,97	2,25	90,57
6	F19x	PD02	DB08	42,90	44,10	43,50	42,80	4	43,33			0,60	1,39	91,15
7	F25	PB06	DB08	42,00	44,50	44,80	43,70	4	43,75			1,26	2,87	92,04
8	A45x	PZ99	DB08	44,60	44,50	46,00	44,10	4	44,80			0,83	1,85	94,25
9	F13x	PD01	DB08	45,80	45,00	43,80	45,70	4	45,08			0,92	2,04	94,83
10	A53	PZ02	DD01	45,00	45,00	46,00	45,00	4	45,25			0,50	1,10	95,20
11	F02x	PD02	DB08	47,00	46,00	47,00	44,00	4	46,00			1,41	3,07	96,78
12	F12x	PC01	DB08	46,00	47,00	47,00	45,00	4	46,25			0,96	2,07	97,30
13	A39	PD02	DB08	46,88	46,15	46,01	48,92	4	46,99			1,34	2,86	98,86
14	F16x	PC01	DB08	45,71	48,03	46,22	48,61	4	47,14			1,40	2,96	99,18
15	A36	PD02	DB08	47,10	46,80	47,10	48,10	4	47,28			0,57	1,20	99,46
16	A55	PC01	DB08	47,33	47,90	47,94	47,47	4	47,66			0,31	0,65	100,27
17	F27	PD01	DB01	43,10	47,20	52,70	47,70	4	47,68			3,93	8,25	100,30
18	A59x	PC01	DB08	47,97	48,09	46,53	48,98	4	47,89			1,01	2,12	100,76
19	F09	PZ02	DD02	48,03	49,14	47,86	46,72	4	47,94			0,99	2,07	100,85
20	F05x	PD02	DB08	47,70	47,20	48,80	48,10	4	47,95			0,68	1,41	100,88
21	F08x	PC01	DB10	48,58	50,39	47,27	45,77	4	48,00			1,96	4,09	100,98
22	A89	PD02	DB08	47,90	50,90	48,10	46,20	4	48,28			1,95	4,03	101,56
23	A65	PD01	DB08	48,70	49,00	47,90	48,60	4	48,55			0,47	0,96	102,14
24	F18x	PD99	DB08	46,60	50,60	47,00	50,20	4	48,60			2,09	4,30	102,25
25	A61x	PB02	DB08	49,90	50,20	47,50	47,50	4	48,78			1,48	3,03	102,62
26	F32x	PD01	DB08	49,10	49,20	47,90	48,90	4	48,78			0,60	1,22	102,62
27	A51	PD02	DB08	48,25	49,09	48,06	50,01	4	48,85			0,89	1,83	102,78
28	A80	PD01	DB10	51,20	46,60	54,00	44,20	4	49,00			4,42	9,02	103,09
29	F14x	PC01	DB08	50,36	49,00	48,89	48,29	4	49,14			0,87	1,78	103,37
30	F07x	PC01	DB08	51,74	48,91	54,07	46,39	4	50,28			3,34	6,65	105,78
31	F03	PC02	DB08	48,14	50,03	52,70	50,45	4	50,33			1,87	3,72	105,89
32	A49	PD03	DB08	46,80	52,40	51,60	53,10	4	50,98			2,85	5,59	107,24
33	A60x	PD01	DB10	52,57	48,49	52,12	52,29	4	51,37			1,93	3,75	108,07
34	A82	PD01	DB08	50,20	54,20	54,90	54,30	4	53,40			2,16	4,04	112,35
35	A56	PC01	DB08	66,58	51,91	49,96	54,65	0	55,78	*c*		7,46	13,37	117,35
36	F33x	PD01	DB10	65,23	64,33	58,95	55,91	0	61,11	*b*	*	4,44	7,26	128,56
37	F15x	PC01	DB08	40,00	81,00	84,00	53,00	0	64,50	*c*	*	21,49	33,31	135,70
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	N	Mean	SI	VI
all labs	124	**47,53**	**1,441**	**3,031**
20	% from the mean			
	L		SR	VR
	31		**2,616**	**5,504**

* = non tolerable mean because more than +/-

17th Needle/Leaf Interlaboratory Comparison Test 2014/2015

Element: Fe **Sample: 4** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	Replications 2	Replications 3	Replications 4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	A62x	PD02	DB99	66,70	63,06	59,82	63,03	0	63,15	*b*	*	2,81	4,45	62,68
2	F25	PB06	DB08	81,70	85,60	85,20	84,00	0	84,13	*b*		1,75	2,08	83,50
3	A79	PD03	DB10	90,95	88,27	89,41	87,38	4	89,00			1,54	1,73	88,34
4	F15x	PC01	DB08	95,00	*119a*	96,00	92,00	3	94,33			2,08	2,21	93,63
5	A89	PD02	DB08	94,10	96,20	96,00	91,70	4	94,50			2,09	2,21	93,80
6	F20x	PD02	DB08	94,00	99,60	95,40	94,40	4	95,85			2,57	2,68	95,14
7	F19x	PD02	DB08	92,80	100,00	94,90	96,80	4	96,13			3,06	3,18	95,41
8	A39	PD02	DB08	96,00	96,01	96,46	100,73	4	97,30			2,30	2,36	96,58
9	F02x	PD02	DB08	102,00	94,00	97,00	98,00	4	97,75			3,30	3,38	97,03
10	F12x	PC01	DB08	95,00	101,00	101,00	94,00	4	97,75			3,77	3,86	97,03
11	F13x	PD01	DB08	99,50	98,70	95,50	98,20	4	97,98			1,73	1,77	97,25
12	A59x	PC01	DB08	93,75	98,91	101,65	98,57	4	98,22			3,28	3,34	97,49
13	F18x	PD99	DB08	96,90	100,00	97,90	100,00	4	98,70			1,56	1,58	97,97
14	A45x	PZ99	DB08	99,70	98,40	99,60	100,00	4	99,43			0,70	0,71	98,69
15	F05x	PD02	DB08	97,00	102,00	99,00	99,80	4	99,45			2,07	2,08	98,71
16	F27	PD01	DB01	88,40	98,90	110,90	101,30	4	99,88			9,24	9,25	99,13
17	F07x	PC01	DB08	101,10	99,31	100,80	99,64	4	100,21			0,87	0,87	99,47
18	A65	PD01	DB08	101,30	99,90	102,90	99,30	4	100,85			1,60	1,59	100,10
19	F03	PC02	DB08	100,65	100,76	100,25	102,41	4	101,02			0,95	0,94	100,27
20	F33x	PD01	DB10	98,64	98,01	101,51	106,82	4	101,25			4,02	3,97	100,49
21	A49	PD03	DB08	102,00	100,00	98,50	105,00	4	101,38			2,81	2,77	100,62
22	F32x	PD01	DB08	103,00	100,00	103,00	100,00	4	101,50			1,73	1,71	100,75
23	A36	PD02	DB08	104,00	99,20	101,00	102,00	4	101,55			2,00	1,97	100,80
24	F14x	PC01	DB08	100,76	108,14	98,54	100,11	4	101,89			4,27	4,19	101,13
25	F08x	PC01	DB10	103,26	101,48	99,40	105,37	4	102,38			2,54	2,48	101,62
26	F16x	PC01	DB08	101,80	105,30	100,10	103,10	4	102,58			2,19	2,14	101,81
27	A53	PZ02	DD01	101,00	104,00	105,00	102,00	4	103,00			1,83	1,77	102,24
28	A55	PC01	DB08	103,08	102,26	102,70	104,30	4	103,09			0,88	0,85	102,32
29	A80	PD01	DB10	106,00	101,00	106,00	101,00	4	103,50			2,89	2,79	102,73
30	A61x	PB02	DB08	106,80	100,40	101,40	105,80	4	103,60			3,17	3,06	102,83
31	A51	PD02	DB08	102,50	103,10	105,20	104,90	4	103,93			1,33	1,28	103,15
32	F09	PZ02	DD02	102,90	104,23	106,12	105,24	4	104,62			1,38	1,32	103,85
33	A58x	PD02	DB01	105,30	105,66	106,37	104,63	4	105,49			0,73	0,69	104,71
34	A60x	PD01	DB10	104,45	106,77	106,88	103,90	4	105,50			1,54	1,46	104,72
35	A57	PZ98	DD02	106,70	108,80	108,50	106,80	4	107,70			1,10	1,03	106,90
36	A56	PC01	DB08	101,79	113,10	111,00	124,21	4	112,53			9,21	8,19	111,69
37	A82	PD01	DB08	*125a*	115,00	115,00	116,00	0	115,33	*b*		0,58	0,50	114,48
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	N	Mean	SI	VI
all labs	135	**100,75**	**2,540**	**2,521**
20	% from the mean			
	L		SR	VR
	34		**4,295**	**4,265**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Cu **Sample: 1** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A79	PD03	DB10	5,20	5,23	5,19	5,23	4	5,21			0,02	0,37	81,89
2	F07x	PC01	DB08	5,76	5,85	5,65	5,61	4	5,72			0,11	1,90	89,82
3	A49	PD05	DB08	5,76	5,85	5,67	*4,96a*	3	5,76			0,09	1,56	90,48
4	A60	PD01	DB10	5,95	6,09	5,83	5,87	4	5,93			0,11	1,92	93,18
5	A61x	PB02	DB08	5,89	6,05	5,86	6,03	4	5,96			0,10	1,62	93,58
6	A55	PC01	DB10	6,10	6,01	6,08	6,03	4	6,06			0,04	0,67	95,12
7	A89	PD02	DB10	6,06	6,21	6,16	5,98	4	6,10			0,10	1,68	95,86
8	A59x	PC01	DB08	6,28	6,14	5,90	6,10	4	6,11			0,16	2,57	95,90
9	A80	PD01	DB10	6,14	5,97	6,39	5,96	4	6,12			0,20	3,29	96,05
10	A39	PD02	DB08	6,16	6,19	6,17	6,13	4	6,16			0,03	0,42	96,82
11	A58x	PD02	DB05	6,36	6,13	6,23	6,20	4	6,23			0,10	1,55	97,86
12	F20x	PD02	DB08	6,36	6,15	6,33	6,33	4	6,29			0,10	1,53	98,84
13	F03	PC02	DB08	6,33	6,49	6,05	6,31	4	6,30			0,18	2,89	98,88
14	F19x	PD02	DB08	6,16	6,37	6,42	6,26	4	6,30			0,12	1,84	99,00
15	F32x	PD01	DB08	6,39	6,35	6,31	6,28	4	6,33			0,05	0,76	99,47
16	A45x	PZ99	DB08	6,53	6,33	6,09	6,40	4	6,34			0,18	2,91	99,55
17	A51	PD02	DB08	6,27	6,46	6,35	6,28	4	6,34			0,09	1,43	99,58
18	A82	PC01	DB10	6,43	6,27	6,39	6,31	4	6,35			0,07	1,16	99,73
19	A53	PZ02	DD01	6,44	6,33	6,37	6,35	4	6,37			0,05	0,75	100,10
20	F14x	PC01	DB10	6,36	6,46	6,40	6,31	4	6,38			0,06	0,98	100,23
21	F08x	PC01	DB10	6,40	6,52	6,27	6,43	4	6,40			0,11	1,64	100,60
22	A57	PZ98	DD02	6,30	6,43	6,40	6,57	4	6,43			0,11	1,74	100,92
23	F18x	PD01	DB10	6,49	6,49	6,39	6,48	4	6,46			0,05	0,75	101,51
24	F12x	PC01	DB09	6,50	6,41	6,38	6,64	4	6,48			0,12	1,80	101,83
25	F25	PB06	DB08	6,56	6,47	6,60	6,54	4	6,54			0,05	0,83	102,77
26	A65	PD01	DB08	6,60	6,80	6,60	6,50	4	6,63			0,13	1,90	104,06
27	F09	PZ02	DD02	6,69	6,64	6,62	6,58	4	6,63			0,05	0,69	104,18
28	F16x	PC01	DB08	6,40	6,68	6,72	6,85	4	6,66			0,19	2,81	104,62
29	F27	PD01	DB05	6,67	*8,773a*	6,73	6,79	3	6,73			0,06	0,89	105,72
30	F13x	PD01	DB08	6,97	6,82	6,64	6,77	4	6,80			0,14	2,01	106,81
31	F33x	PD01	DB10	6,29	6,47	6,87	7,67	4	6,83			0,61	8,99	107,21
32	F15x	PC01	DB09	7,30	5,10	7,80	7,60	4	6,95			1,25	17,99	109,17
33	F02	PD02	DB08	6,95	6,95	7,32	6,64	4	6,97			0,28	3,99	109,40
34	A36	PD02	DB08	6,84	7,25	6,87	7,02	4	7,00			0,19	2,68	109,88
35	F05	PD02	DB08	7,30	*10,8a*	6,65	7,30	3	7,08			0,38	5,30	111,26
36	A56	PC01	DB08	9,32	8,20	9,82	8,08	0	8,85	*b*	*	0,85	9,63	139,08
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	N	Mean	SI	VI
all labs	137	**6,37**	**0,161**	**2,535**
20	% from the mean			
	L		SR	VR
	35		**0,394**	**6,180**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Cu **Sample: 2** Unit: µg/g

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	A79	PD03	DB10	2,27	2,31	2,33	2,32	4	2,31			0,03	1,20	82,79
2	A57	PZ98	DD02	2,40	2,30	2,40	2,47	4	2,39			0,07	2,92	85,92
3	A39	PD02	DB08	2,49	2,51	2,45	2,40	4	2,46			0,05	1,88	88,47
4	F33x	PD01	DB10	2,35	2,32	2,78	2,42	4	2,47			0,21	8,61	88,61
5	A80	PD01	DB10	3,00	2,49	2,06	2,61	4	2,54			0,39	15,24	91,21
6	F02	PD02	DB08	2,57	2,67	2,42	2,53	4	2,55			0,10	4,06	91,48
7	F07x	PC01	DB08	2,56	2,57	2,53	2,54	4	2,55			0,02	0,75	91,49
8	A45x	PZ99	DB08	2,59	2,55	2,58	2,49	4	2,55			0,04	1,76	91,66
9	F16x	PC01	DB08	2,54	2,66	2,58	2,66	4	2,61			0,06	2,23	93,68
10	A89	PD02	DB10	2,67	2,72	2,61	2,63	4	2,66			0,05	1,83	95,43
11	F32x	PD01	DB08	2,73	2,65	2,63	2,72	4	2,68			0,05	1,86	96,33
12	A82	PC01	DB10	2,41	2,77	2,83	2,84	4	2,71			0,20	7,48	97,43
13	F14x	PC01	DB10	2,60	2,80	2,63	2,84	4	2,72			0,12	4,45	97,60
14	A61x	PB02	DB08	2,74	2,78	2,77	2,63	4	2,73			0,07	2,52	98,04
15	F25	PB06	DB08	2,75	2,70	2,75	2,73	4	2,73			0,02	0,86	98,13
16	A55	PC01	DB10	2,70	2,78	2,74	2,79	4	2,75			0,04	1,46	98,92
17	A58x	PD02	DB05	2,75	2,79	2,81	2,74	4	2,77			0,03	1,19	99,56
18	F12x	PC01	DB09	2,86	2,87	2,61	2,86	4	2,80			0,13	4,53	100,55
19	F09	PZ02	DD02	2,76	2,87	2,78	2,83	4	2,81			0,05	1,70	100,97
20	A60	PD01	DB10	2,99	2,68	2,89	2,78	4	2,84			0,14	4,86	101,81
21	A59x	PC01	DB08	3,05	2,68	2,69	2,95	4	2,84			0,19	6,56	102,08
22	A53	PZ02	DD01	2,94	2,86	2,77	2,81	4	2,85			0,07	2,57	102,17
23	A51	PD02	DB08	2,87	2,84	2,99	2,75	4	2,86			0,10	3,48	102,87
24	F20x	PD02	DB08	2,88	2,86	3,03	2,88	4	2,91			0,08	2,71	104,59
25	F19x	PD02	DB08	2,95	3,08	2,94	2,90	4	2,97			0,08	2,63	106,56
26	A49	PD05	DB08	2,82	2,94	3,24	2,89	4	2,97			0,18	6,22	106,74
27	F08x	PC01	DB10	2,95	2,94	3,07	3,01	4	2,99			0,06	1,97	107,44
28	F03	PC02	DB08	2,87	2,94	3,09	3,20	4	3,03			0,15	4,91	108,63
29	F05	PD02	DB08	3,11	2,89	2,98	3,16	4	3,04			0,12	4,05	108,99
30	F18x	PD01	DB10	3,07	3,02	3,11	3,12	4	3,08			0,05	1,48	110,60
31	A36	PD02	DB08	3,09	3,10	2,93	3,20	4	3,08			0,11	3,63	110,60
32	A65	PD01	DB08	3,00	3,20	3,20	3,00	4	3,10			0,12	3,72	111,32
33	F13x	PD01	DB08	3,20	3,14	3,11	3,07	4	3,13			0,05	1,75	112,40
34	F15x	PC01	DB09	3,30	3,10	2,90	3,50	4	3,20			0,26	8,07	114,91
35	F27	PD01	DB05	2,44	4,22	4,90	2,07	0	3,41	*c*	*	1,37	40,13	122,38
36	A56	PC01	DB08	6,96	4,04	3,15	5,11	0	4,81	*b*	*	1,64	34,04	172,88
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	N	Mean	SI	VI
all labs	136	**2,78**	**0,103**	**3,683**
20	% from the mean			
	L		SR	VR
	34		**0,228**	**8,194**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Cu **Sample: 3** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	A79	PD03	DB10	1,90	1,92	1,90	1,90	4	1,90			0,01	0,59	80,02
2	A89	PD02	DB10	2,17	1,96	1,94	1,95	4	2,01			0,11	5,50	84,38
3	A39	PD02	DB08	2,08	2,09	2,11	2,09	4	2,09			0,01	0,45	88,09
4	A55	PC01	DB10	2,00	2,22	2,27	2,01	4	2,12			0,14	6,62	89,39
5	F25	PB06	DB08	1,97	2,20	2,27	2,14	4	2,15			0,13	5,98	90,27
6	A57	PZ98	DD02	2,17	2,13	2,17	2,17	4	2,16			0,02	0,93	90,90
7	A61x	PB02	DB08	2,23	2,21	2,06	2,25	4	2,19			0,09	3,96	92,06
8	F15x	PC01	DB09	2,20	2,10	2,30	2,20	4	2,20			0,08	3,71	92,59
9	A80	PD01	DB10	2,37	2,12	2,43	2,01	4	2,23			0,20	8,96	93,96
10	A82	PC01	DB10	2,22	2,22	2,24	2,27	4	2,24			0,02	1,02	94,08
11	F33x	PD01	DB10	2,34	2,30	2,22	2,09	4	2,24			0,11	4,93	94,17
12	F12x	PC01	DB09	2,36	2,32	2,28	2,32	4	2,32			0,03	1,41	97,64
13	A60	PD01	DB10	2,34	2,22	2,50	2,25	4	2,33			0,13	5,42	97,93
14	A58x	PD02	DB05	2,31	2,34	2,34	2,32	4	2,33			0,01	0,64	97,95
15	F32x	PD01	DB08	2,37	2,31	2,36	2,29	4	2,33			0,04	1,66	98,16
16	A59x	PC01	DB08	2,26	2,45	2,49	2,33	4	2,38			0,11	4,46	100,27
17	F16x	PC01	DB08	2,41	2,36	2,39	2,40	4	2,39			0,02	0,80	100,51
18	F07x	PC01	DB08	2,85	2,39	2,19	2,13	4	2,39			0,33	13,78	100,51
19	F09	PZ02	DD02	2,36	2,43	2,41	2,39	4	2,40			0,03	1,23	100,92
20	F08x	PC01	DB10	2,40	2,49	2,35	2,44	4	2,42			0,06	2,41	101,84
21	F02	PD02	DB08	2,50	2,35	2,49	2,35	4	2,42			0,08	3,46	101,95
22	A65	PD01	DB08	2,40	2,50	2,40	2,40	4	2,43			0,05	2,06	102,06
23	F19x	PD02	DB08	2,41	2,42	2,44	2,49	4	2,44			0,04	1,46	102,69
24	A53	PZ02	DD01	2,47	2,47	2,44	2,42	4	2,45			0,02	1,00	103,11
25	F14x	PC01	DB10	2,46	2,51	2,38	2,45	4	2,45			0,05	2,12	103,12
26	F13x	PD01	DB08	2,51	2,44	2,54	2,45	4	2,49			0,05	1,93	104,58
27	F20x	PD02	DB08	2,56	2,48	2,57	2,52	4	2,53			0,04	1,62	106,58
28	A51	PD02	DB08	2,62	2,65	2,57	2,44	4	2,57			0,10	3,76	108,16
29	A45x	PZ99	DB08	2,62	2,71	2,71	2,40	4	2,61			0,15	5,60	109,84
30	F27	PD01	DB05	2,58	1,62	2,36	3,88	0	2,61	*c*		0,94	36,07	109,90
31	F18x	PD01	DB10	2,52	2,71	2,64	2,58	4	2,61			0,08	3,12	109,95
32	F03	PC02	DB08	2,61	2,62	2,41	2,93	4	2,64			0,21	8,12	111,21
33	A36	PD02	DB08	2,56	2,74	2,76	2,90	4	2,74			0,14	5,09	115,31
34	A49	PD05	DB08	2,48	2,90	3,01	2,65	4	2,76			0,24	8,69	116,16
35	F05	PD02	DB08	2,81	2,86	2,68	3,02	4	2,84			0,14	4,95	119,63
36	A56	PC01	DB08	5,80	4,63	4,68	7,46	0	5,65	*b*	*	1,33	23,47	237,60
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	N	Mean	SI	VI
all labs	136	**2,38**	**0,090**	**3,800**
20	% from the mean			
	L		SR	VR
	34		**0,214**	**9,027**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Cu **Sample: 4** Unit: µg/g

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	A79	PD03	DB10	2,20	2,16	2,19	2,20	4	2,19			0,02	0,72	81,75
2	A49	PD05	DB08	2,48	2,19	2,70	1,80	4	2,29			0,39	16,97	85,70
3	A89	PD02	DB10	2,38	2,31	2,39	2,32	4	2,35			0,04	1,74	87,85
4	A57	PZ98	DD02	2,33	2,40	2,37	2,35	4	2,36			0,03	1,26	88,32
5	A39	PD02	DB08	2,41	2,38	2,38	2,35	4	2,38			0,02	1,01	89,02
6	A61x	PB02	DB08	2,56	2,54	2,52	2,44	4	2,52			0,05	2,09	94,02
7	F33x	PD01	DB10	2,42	2,46	2,60	2,68	4	2,54			0,12	4,77	94,95
8	A55	PC01	DB10	2,55	2,57	2,56	2,57	4	2,56			0,01	0,32	95,86
9	A80	PD01	DB10	2,66	2,45	2,65	2,51	4	2,57			0,10	4,05	95,98
10	A60	PD01	DB10	2,73	2,61	2,49	2,69	4	2,63			0,10	3,94	98,35
11	F07x	PC01	DB08	2,48	2,55	2,84	2,67	4	2,63			0,16	6,00	98,49
12	A82	PC01	DB10	2,60	2,65	2,64	2,66	4	2,64			0,03	0,95	98,61
13	A58x	PD02	DB05	2,64	2,62	2,64	2,67	4	2,64			0,02	0,78	98,78
14	F16x	PC01	DB08	2,47	2,62	2,70	2,81	4	2,65			0,14	5,37	99,03
15	F02	PD02	DB08	2,54	2,93	2,52	2,72	4	2,68			0,19	7,13	100,09
16	F25	PB06	DB08	2,64	2,74	2,67	2,68	4	2,68			0,04	1,56	100,28
17	F12x	PC01	DB09	2,88	2,66	2,65	2,69	4	2,72			0,11	3,97	101,68
18	F13x	PD01	DB08	2,82	2,78	2,75	2,62	4	2,74			0,09	3,16	102,52
19	A45x	PZ99	DB08	2,72	2,81	2,74	2,75	4	2,76			0,04	1,41	102,99
20	F14x	PC01	DB10	2,67	2,77	2,72	2,87	4	2,76			0,08	3,05	103,14
21	F32x	PD01	DB08	2,76	2,75	2,79	2,75	4	2,76			0,02	0,69	103,27
22	F19x	PD02	DB08	2,76	2,77	2,83	2,75	4	2,78			0,04	1,29	103,83
23	F03	PC02	DB08	2,75	2,80	2,80	2,78	4	2,78			0,02	0,85	104,02
24	A53	PZ02	DD01	2,76	2,86	2,78	2,74	4	2,79			0,05	1,89	104,11
25	A59x	PC01	DB08	2,90	2,89	2,72	2,70	4	2,80			0,11	3,83	104,77
26	A51	PD02	DB08	2,84	2,77	2,84	2,77	4	2,81			0,04	1,40	104,95
27	F18x	PD01	DB10	2,78	2,83	2,84	2,79	4	2,81			0,03	1,05	105,05
28	A65	PD01	DB08	3,00	2,70	2,80	2,80	4	2,83			0,13	4,45	105,61
29	F20x	PD02	DB08	2,92	2,82	2,96	2,80	4	2,88			0,08	2,69	107,48
30	A36	PD02	DB08	2,86	2,85	2,79	3,06	4	2,89			0,12	4,06	108,04
31	F08x	PC01	DB10	2,85	2,92	2,88	2,93	4	2,89			0,04	1,22	108,20
32	F15x	PC01	DB09	3,00	2,30	2,80	3,60	0	2,93	*c*		0,54	18,38	109,34
33	F09	PZ02	DD02	2,98	3,02	2,96	2,97	4	2,98			0,03	0,84	111,42
34	F05	PD02	DB08	2,92	2,82	3,02	3,21	4	2,99			0,17	5,56	111,87
35	F27	PD01	DB05	3,07	3,54	4,81	4,38	0	3,95	*b*	*	0,79	20,04	147,67
36	A56	PC01	DB08	4,38	5,47	9,14	9,80	0	7,20	*b*	*	2,67	37,14	269,09
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	N	Mean	SI	VI
all labs	132	**2,68**	**0,080**	**2,990**
20	% from the mean			
	L		SR	VR
	33		**0,195**	**7,280**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Pb **Sample: 1** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F33x	PD01	DB10	0,26	0,26	0,26	0,27	4	0,26			0,01	2,23	61,11
2	F15x	PC01	DB09	0,24	0,36	0,29	0,35	4	0,31			0,06	18,06	72,72
3	A55	PC01	DB05	0,31	0,32	0,31	0,32	4	0,31			0,00	1,56	73,55
4	A89	PD02	DB10	0,37	0,35	0,35	0,37	4	0,36			0,01	2,81	84,16
5	A79	PD03	DB10	0,37	0,37	0,37	0,38	4	0,37			0,00	1,23	87,06
6	F16x	PC01	DB10	0,37	0,40	0,35	0,38	4	0,37			0,02	5,16	87,73
7	A80	PD01	DB10	0,38	0,37	0,40	0,39	4	0,38			0,01	3,22	90,20
8	A36	PD02	DB10	0,40	0,40	0,39	0,39	4	0,39			0,01	1,81	92,31
9	A82	PC01	DB10	0,40	0,38	0,42	0,38	4	0,40			0,02	4,83	92,72
10	A45x	PZ99	DB08	0,44	0,42	0,39	0,39	4	0,41			0,02	5,70	95,83
11	F13x	PD01	DB05	0,43	0,42	0,43	0,43	4	0,42			0,01	1,35	99,52
12	F27	PD01	DB05	0,41	0,52	0,44	0,40	4	0,44			0,06	12,80	103,39
13	F07x	PC01	DB08	0,41	0,40	0,55	0,41	4	0,44			0,07	15,47	103,90
14	A60	PD01	DB10	0,42	0,47	0,44	0,44	4	0,44			0,02	4,55	104,15
15	F18x	PD01	DB10	0,47	0,42	0,43	0,46	4	0,45			0,02	5,00	104,56
16	A51	PD02	DB08	0,42	0,50	0,45	0,46	4	0,46			0,03	7,02	107,50
17	F32x	PD01	DB10	0,48	0,47	0,48	0,47	4	0,48			0,01	1,16	111,48
18	F08x	PC01	DB10	0,49	0,49	0,48	0,49	4	0,49			0,00	0,78	113,95
19	F14x	PC01	DB10	0,45	0,55	0,47	0,48	4	0,49			0,05	9,44	114,42
20	A39	PD02	DB08	0,51	0,51	0,52	0,53	4	0,52			0,01	1,86	122,01
21	F02	PD02	DB05	0,52	0,61	0,67	0,50	4	0,58			0,08	13,80	134,88
22	F05x	PD02	DB05	0,51	0,67	0,63	0,62	4	0,61		*	0,07	11,49	142,86
23	F12x	PC01	DB09	0,70	0,71	0,70	0,71	0	0,71	*b*	*	0,01	0,82	165,38
24	A65	PD01	DB08	0,80	0,80	0,90	0,70	0	0,80	*b*	*	0,08	10,21	187,66
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27	F03	PC02	DB08	<,5	<,5	<,5	<,5							
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	N	Mean	SI	VI
all labs	88	**0,43**	**0,026**	**6,208**
40	% from the mean			
	L		SR	VR
	22		**0,083**	**19,451**

* = non tolerable mean because more than +/-

limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Pb **Sample: 2** Unit: µg/g

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	A89	PD02	DB10	0,03	0,04	0,03	0,03	0	0,03	*b*	*	0,00	1,73	0,49
2	F07x	PC01	DB08	5,16	5,19	4,98	5,69	4	5,25			0,30	5,78	74,95
3	F27	PD01	DB05	5,59	7,36	5,22	5,59	4	5,94			0,96	16,16	84,77
4	A79	PD03	DB10	5,87	6,47	5,65	6,00	4	6,00			0,35	5,82	85,56
5	A51	PD02	DB08	6,18	6,18	6,33	6,48	4	6,29			0,14	2,29	89,77
6	A39	PD02	DB08	6,58	6,47	6,07	6,24	4	6,34			0,23	3,58	90,46
7	A80	PD01	DB10	6,69	6,79	5,25	6,90	4	6,41			0,78	12,12	91,43
8	A45x	PZ99	DB08	6,85	5,82	6,74	6,29	4	6,43			0,47	7,32	91,68
9	F18x	PD01	DB10	6,00	6,98	5,98	6,76	4	6,43			0,52	8,03	91,75
10	A36	PD02	DB10	6,83	6,50	7,10	6,53	4	6,74			0,28	4,22	96,14
11	A82	PC01	DB10	5,80	*34,876a*	6,41	8,37	3	6,86			1,34	19,57	97,91
12	F15x	PC01	DB09	6,32	5,94	5,87	9,34	4	6,87			1,66	24,17	98,00
13	F08x	PC01	DB10	6,83	6,88	7,01	6,92	4	6,91			0,07	1,06	98,59
14	F14x	PC01	DB10	6,19	6,28	6,83	8,38	4	6,92			1,01	14,62	98,76
15	F32x	PD01	DB10	7,03	6,82	7,13	6,99	4	6,99			0,13	1,85	99,78
16	A65	PD01	DB08	6,60	6,30	7,60	7,60	4	7,03			0,68	9,61	100,24
17	F05x	PD02	DB05	7,27	7,20	7,30	6,65	4	7,11			0,31	4,31	101,39
18	F02	PD02	DB05	7,13	7,55	8,34	5,79	4	7,20			1,07	14,81	102,78
19	F12x	PC01	DB09	7,84	6,53	7,80	6,67	4	7,21			0,71	9,80	102,88
20	F13x	PD01	DB05	7,48	7,04	7,44	7,32	4	7,32			0,20	2,71	104,45
21	F16x	PC01	DB10	5,82	10,43	6,78	9,04	4	8,02			2,10	26,20	114,40
22	A55	PC01	DB05	11,66	7,21	8,40	7,12	4	8,60			2,12	24,69	122,69
23	A60	PD01	DB10	9,03	9,07	9,11	8,53	4	8,94			0,27	3,07	127,52
24	F03	PC02	DB08	8,73	8,71	10,41	9,59	4	9,36		*	0,81	8,67	133,56
25	F33x	PD01	DB10	14,35	7,91	18,57	6,64	0	11,87	*b*	*	5,60	47,19	169,35
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	N	Mean	SI	VI
all labs	91	**7,01**	**0,718**	**10,243**
30	% from the mean			
	L		SR	VR
	23		**0,962**	**13,729**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Pb **Sample: 3** Unit: µg/g

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	A89	PD02	DB10	0,14	0,13	0,13	0,13	4	0,13	*	0,00	2,80	48,05
2	F33x	PD01	DB10	0,14	0,13	0,14	0,12	4	0,13	*	0,01	8,37	48,35
3	A82	PC01	DB10	0,20	0,18	0,19	0,20	4	0,19		0,01	3,22	70,43
4	A55	PC01	DB05	0,19	0,20	0,19	0,19	4	0,19		0,00	0,94	70,84
5	A79	PD03	DB10	0,20	0,20	0,19	0,20	4	0,20		0,00	2,49	72,40
6	A80	PD01	DB10	0,21	0,21	0,22	0,19	4	0,21		0,01	5,02	75,82
7	F16x	PC01	DB10	0,23	0,22	0,21	0,21	4	0,22		0,01	5,35	79,22
8	F18x	PD01	DB10	0,23	0,23	0,22	0,24	4	0,23		0,01	3,32	82,84
9	A36	PD02	DB10	0,22	0,23	0,23	0,22	4	0,23		0,00	2,19	82,84
10	F27	PD01	DB05	0,24	0,22	0,27	0,23	4	0,24		0,02	9,10	87,40
11	A60	PD01	DB10	0,23	0,26	0,26	0,24	4	0,24		0,01	5,76	89,14
12	A51	PD02	DB08	0,27	0,22	0,22	0,28	4	0,24		0,03	13,44	89,14
13	F13x	PD01	DB05	0,24	0,27	0,24	0,24	4	0,25		0,02	7,31	90,32
14	F08x	PC01	DB10	0,25	0,27	0,26	0,26	4	0,26		0,01	2,84	94,70
15	F32x	PD01	DB10	0,27	0,26	0,27	0,26	4	0,27		0,01	2,18	96,71
16	A45x	PZ99	DB08	0,26	0,26	0,29	0,29	4	0,27		0,02	5,56	99,45
17	F14x	PC01	DB10	0,26	0,28	0,27	0,30	4	0,28		0,02	6,08	100,91
18	F05x	PD02	DB05	0,26	0,30	0,28	0,29	4	0,28		0,02	6,20	103,92
19	F07x	PC01	DB08	0,55	0,32	0,41	0,34	4	0,40	*	0,11	26,47	147,14
20	A39	PD02	DB08	0,45	0,50	0,47	0,48	4	0,47	*	0,02	4,23	173,14
21	F12x	PC01	DB09	0,57	0,56	0,58	0,57	4	0,57	*	0,01	1,43	208,02
22	A65	PD01	DB08	0,60	0,60	0,60	*0,7a*	3	0,60	*	0,00	0,00	218,97
23													
24													
25	F03	PC02	DB08	<,5	<,5	<,5	<,5						
26	F02	PD02	DB05	<,5	<,5	<,5	<,5						
27	F15x	PC01	DB09	<,2	0,24	0,31	0,25						
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	N	Mean	SI	VI
all labs	87	**0,27**	**0,016**	**5,753**
40	% from the mean			

L	SR	VR
22	**0,125**	**44,829**

* = non tolerable mean because more than +/-

limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Pb **Sample: 4** Unit: µg/g

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	F33x	PD01	DB10	0,09	0,09	0,10	0,10	4	0,09	*	0,01	8,17	52,35
2	A89	PD02	DB10	0,13	0,13	0,13	0,13	4	0,13		0,00	2,83	72,29
3	A55	PC01	DB05	0,14	0,14	0,14	0,14	4	0,14		0,00	1,53	78,93
4	A79	PD03	DB10	0,17	0,15	0,15	0,15	4	0,16		0,01	7,77	86,09
5	A80	PD01	DB10	0,16	0,16	0,17	0,15	4	0,16		0,01	6,05	87,67
6	F13x	PD01	DB05	0,15	0,16	0,18	0,17	4	0,16		0,01	6,22	91,27
7	A82	PC01	DB10	0,16	0,20	0,15	0,16	4	0,17		0,02	14,41	92,10
8	F16x	PC01	DB10	0,15	0,18	0,17	0,17	4	0,17		0,01	6,23	92,74
9	F18x	PD01	DB10	0,17	0,18	0,17	0,18	4	0,17		0,01	3,04	95,28
10	A36	PD02	DB10	0,17	0,17	0,17	0,17	4	0,17		0,00	0,73	95,42
11	F32x	PD01	DB10	0,19	0,19	0,19	0,19	4	0,19		0,00	1,13	105,81
12	A60	PD01	DB10	0,21	0,19	0,20	0,19	4	0,20		0,01	4,19	108,58
13	F08x	PC01	DB10	0,18	0,20	0,21	0,19	4	0,20		0,01	6,98	108,86
14	A39	PD02	DB08	0,20	0,22	0,21	0,22	4	0,21		0,01	4,27	118,54
15	F14x	PC01	DB10	0,22	0,22	0,21	0,21	4	0,22		0,01	2,41	119,24
16	A45x	PZ99	DB08	0,22	0,24	0,22	0,23	4	0,23		0,01	4,74	126,72
17	A51	PD02	DB08	0,25	0,26	0,23	0,20	4	0,23		0,03	10,73	129,91
18	F27	PD01	DB05	0,24	0,32	0,25	0,19	4	0,25		0,05	21,00	138,22
19	F05x	PD02	DB05	0,27	0,33	0,32	0,34	0	0,31	*b* *	0,03	9,76	173,39
20													
21													
22	F02	PD02	DB05	<,5	<,5	<,5	<,5						
23	F03	PC02	DB08	<,5	<,5	<,5	<,5						
24	A65	PD01	DB08	<,4	<,4	<,4	<,4						
25	F12x	PC01	DB09	<,37	<,37	<,37	<,37						
26	F15x	PC01	DB09	0,22	<,2	<,2	<,2						
27	F07x	PC01	DB08	0,21	<,2	0,31	0,23						
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	N	Mean	SI	VI
all labs	72	**0,18**	**0,012**	**6,561**
40	% from the mean			

L	SR	VR
18	**0,039**	**21,735**

* = non tolerable mean because more than +/-

lower than the lowest evaluated result

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Cd **Sample: 1** Unit: ng/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	F07x	PC01	DB08	55,70	56,70	38,10	44,30	4	48,70		*	9,03	18,55	66,70
2	F03	PC02	DB08	56,00	55,00	56,00	54,00	4	55,25			0,96	1,73	75,67
3	A51	PD02	DB08	64,92	62,88	59,51	59,19	4	61,63			2,76	4,48	84,40
4	F16x	PC01	DB10	67,55	64,02	56,37	65,71	4	63,41			4,91	7,75	86,84
5	A79	PD03	DB10	64,50	65,00	64,00	64,50	4	64,50			0,41	0,63	88,33
6	A61x	PD01	DB08	65,00	71,00	67,00	67,00	4	67,50			2,52	3,73	92,44
7	F05	PD02	DB05	73,60	63,50	67,60	68,70	4	68,35			4,15	6,08	93,61
8	A36	PD02	DB10	70,00	68,00	67,00	70,00	4	68,75			1,50	2,18	94,15
9	A45x	PZ99	DB10	67,80	73,10	68,20	71,10	4	70,05			2,51	3,58	95,93
10	A80	PD01	DB10	71,70	68,70	73,40	70,80	4	71,15			1,96	2,75	97,44
11	A39	PD02	DB08	71,40	71,40	73,20	72,00	4	72,00			0,85	1,18	98,60
12	A55	PC01	DB10	72,60	70,90	72,00	72,80	4	72,08			0,85	1,18	98,71
13	F14x	PC01	DB10	76,85	72,37	72,20	71,93	4	73,34			2,35	3,20	100,44
14	F18x	PD01	DB10	72,00	75,70	74,70	74,50	4	74,23			1,57	2,12	101,65
15	F02	PD02	DB05	80,00	80,00	70,00	70,00	4	75,00			5,77	7,70	102,71
16	F12x	PC01	DB09	74,00	77,00	75,00	75,00	4	75,25			1,26	1,67	103,06
17	F08x	PC01	DB10	75,75	80,11	74,89	76,92	4	76,92			2,28	2,97	105,34
18	F15x	PC01	DB09	75,00	83,00	78,00	75,00	4	77,75			3,77	4,86	106,48
19	F33x	PD01	DB10	78,47	80,58	79,47	78,55	4	79,27			0,99	1,24	108,56
20	F25	PB06	DB08	82,40	82,30	80,90	81,00	4	81,65			0,81	0,99	111,82
21	F32x	PD01	DB10	82,00	82,00	82,00	80,90	4	81,73			0,55	0,67	111,92
22	A58x	PD02	DB05	80,39	83,03	83,07	84,76	4	82,81			1,81	2,18	113,41
23	A60	PD01	DB10	81,03	83,25	85,26	84,10	4	83,41			1,79	2,14	114,23
24	F27	PD01	DB05	84,71	*99,14a*	84,02	83,37	3	84,03			0,67	0,80	115,08
25	F13x	PD01	DB05	86,00	86,00	82,00	84,00	4	84,50			1,91	2,27	115,72
26	A82	PC01	DB10	90,80	87,71	88,04	85,45	4	88,00			2,19	2,49	120,52
27	A89	PD02	DB10	1223	1234	1255	1247	0	1240	*b*	*	14,13	1,14	1697,85
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30	A49	PD05	DB08	<,3	<,3	<,3	<,3				*			
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	N	Mean	SI	VI
all labs	103	**73,02**	**2,313**	**3,168**
30	% from the mean			
	L		SR	VR
	26		**9,392**	**12,843**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Cd **Sample: 2** Unit: ng/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A49	PD05	DB08	0,28	0,44	0,62	0,56	0	0,47	*b*	*	0,15	31,20	0,19
2	A89	PD02	DB10	171,80	209,60	189,10	196,00	4	191,63			15,72	8,21	77,81
3	F07x	PC01	DB08	218,80	220,20	188,50	202,90	4	207,60			14,96	7,20	84,30
4	F02	PD02	DB05	210,00	220,00	220,00	200,00	4	212,50			9,57	4,51	86,29
5	A79	PD03	DB10	226,00	219,50	224,00	220,50	4	222,50			3,03	1,36	90,35
6	A36	PD02	DB10	230,00	234,00	233,00	228,00	4	231,25			2,75	1,19	93,90
7	A45x	PZ99	DB10	227,00	237,00	235,00	231,00	4	232,50			4,43	1,91	94,41
8	A39	PD02	DB08	234,30	234,30	234,00	232,50	4	233,78			0,86	0,37	94,93
9	F03	PC02	DB08	242,00	232,00	228,00	239,00	4	235,25			6,40	2,72	95,53
10	F05	PD02	DB05	229,00	246,00	230,00	240,00	4	236,25			8,18	3,46	95,93
11	F16x	PC01	DB10	226,50	233,20	247,90	246,40	4	238,50			10,37	4,35	96,85
12	A80	PD01	DB10	245,00	296,00	190,00	235,00	4	241,50			43,50	18,01	98,07
13	F33x	PD01	DB10	238,50	228,20	267,10	236,20	4	242,50			16,98	7,00	98,47
14	A55	PC01	DB10	240,00	250,00	240,00	240,00	4	242,50			5,00	2,06	98,47
15	A51	PD02	DB08	248,30	234,20	244,80	245,50	4	243,20			6,19	2,54	98,76
16	F18x	PD01	DB10	251,00	245,00	250,00	255,00	4	250,25			4,11	1,64	101,62
17	F12x	PC01	DB09	250,00	252,00	261,00	245,00	4	252,00			6,68	2,65	102,33
18	F25	PB06	DB08	255,80	252,80	256,80	253,00	4	254,60			2,01	0,79	103,39
19	A61x	PD01	DB08	247,00	270,00	247,00	255,00	4	254,75			10,84	4,26	103,45
20	A82	PC01	DB10	238,00	254,51	285,36	273,88	4	262,94			20,94	7,96	106,77
21	A58x	PD02	DB05	266,16	264,73	264,79	262,26	4	264,49			1,62	0,61	107,40
22	F13x	PD01	DB05	260,00	265,00	268,00	275,00	4	267,00			6,27	2,35	108,42
23	F32x	PD01	DB10	271,00	270,00	267,00	268,00	4	269,00			1,83	0,68	109,23
24	F15x	PC01	DB09	270,00	260,00	*366a*	279,00	3	269,67			9,50	3,52	109,50
25	F27	PD01	DB05	253,60	282,00	269,10	278,60	4	270,83			12,71	4,69	109,97
26	F14x	PC01	DB10	258,00	280,00	271,00	277,00	4	271,50			9,75	3,59	110,25
27	F08x	PC01	DB10	273,26	271,42	274,57	272,51	4	272,94			1,32	0,48	110,83
28	A60	PD01	DB10	281,56	260,72	307,62	284,25	4	283,54			19,19	6,77	115,14
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	N	Mean	SI	VI
all labs	107	**246,26**	**9,435**	**3,831**
30	% from the mean			
	L		SR	VR
	27		**22,130**	**8,978**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Cd **Sample: 3** Unit: ng/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A49	PD05	DB08	0,58	0,78	0,90	0,82	0	0,77	*b*	*	0,13	17,40	0,42
2	F02	PD02	DB05	160,00	160,00	140,00	130,00	4	147,50			15,00	10,17	79,76
3	A79	PD03	DB10	164,00	163,00	163,00	161,50	4	162,88			1,03	0,63	88,08
4	F16x	PC01	DB10	162,70	163,50	165,00	165,70	4	164,23			1,37	0,83	88,81
5	F07x	PC01	DB08	170,20	174,30	151,40	161,60	4	164,38			10,14	6,17	88,89
6	F05	PD02	DB05	170,00	168,00	168,00	168,00	4	168,50			1,00	0,59	91,12
7	F03	PC02	DB08	174,00	170,00	165,00	172,00	4	170,25			3,86	2,27	92,07
8	A61x	PD01	DB08	183,00	179,00	172,00	178,00	4	178,00			4,55	2,55	96,26
9	A51	PD02	DB08	181,10	180,70	175,40	176,10	4	178,33			2,99	1,68	96,43
10	A45x	PZ99	DB10	181,00	177,00	176,00	182,00	4	179,00			2,94	1,64	96,80
11	A39	PD02	DB08	178,20	183,00	186,90	176,10	4	181,05			4,85	2,68	97,91
12	A36	PD02	DB10	182,00	181,00	183,00	179,00	4	181,25			1,71	0,94	98,02
13	F33x	PD01	DB10	187,30	182,60	179,70	176,20	4	181,45			4,70	2,59	98,12
14	A80	PD01	DB10	189,00	180,00	197,00	162,00	4	182,00			15,03	8,26	98,42
15	F12x	PC01	DB09	186,00	182,00	182,00	182,00	4	183,00			2,00	1,09	98,96
16	A55	PC01	DB10	183,10	183,60	180,60	186,10	4	183,35			2,25	1,23	99,15
17	F18x	PD01	DB10	185,00	188,00	184,00	189,00	4	186,50			2,38	1,28	100,85
18	F14x	PC01	DB10	188,50	190,10	189,70	185,90	4	188,55			1,89	1,00	101,96
19	F15x	PC01	DB09	187,00	190,00	187,00	193,00	4	189,25			2,87	1,52	102,34
20	F08x	PC01	DB10	195,87	193,53	194,68	192,58	4	194,16			1,42	0,73	105,00
21	A58x	PD02	DB05	196,42	193,64	195,71	196,46	4	195,56			1,32	0,68	105,75
22	F27	PD01	DB05	203,50	192,70	189,80	207,90	4	198,48			8,62	4,34	107,33
23	F25	PB06	DB08	197,10	203,40	202,40	195,90	4	199,70			3,75	1,88	107,99
24	F32x	PD01	DB10	198,00	199,00	203,00	200,00	4	200,00			2,16	1,08	108,15
25	A82	PC01	DB10	202,21	207,94	206,04	195,40	4	202,90			5,54	2,73	109,72
26	F13x	PD01	DB05	207,00	202,00	204,00	204,00	4	204,25			2,06	1,01	110,45
27	A60	PD01	DB10	209,17	205,38	206,40	207,87	4	207,21			1,66	0,80	112,05
28	A89	PD02	DB10	246,10	252,30	194,40	191,80	4	221,15			32,51	14,70	119,59
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	N	Mean	SI	VI
all labs	108	**184,92**	**5,171**	**2,796**
30	% from the mean			
	L		SR	VR
	27		**16,138**	**8,727**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: Cd **Sample: 4** Unit: ng/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean		Lab.standard dev. Si	Vi	Recovery %
1	F33x	PD01	DB10	17,63	19,31	21,30	20,01	4	19,56		1,53	7,82	71,61
2	A61x	PD01	DB08	20,00	20,00	20,00	20,00	4	20,00		0,00	0,00	73,21
3	A51	PD02	DB08	24,13	22,70	20,36	19,50	4	21,67		2,12	9,80	79,34
4	A79	PD03	DB10	22,70	21,90	22,00	22,20	4	22,20		0,36	1,60	81,27
5	F16x	PC01	DB10	21,83	22,31	22,78	22,70	4	22,41		0,43	1,94	82,02
6	F18x	PD01	DB10	25,60	24,10	23,30	24,60	4	24,40		0,96	3,95	89,32
7	F12x	PC01	DB09	29,00	23,00	21,00	25,00	4	24,50		3,42	13,94	89,69
8	A36	PD02	DB10	25,00	25,00	25,00	24,00	4	24,75		0,50	2,02	90,60
9	A45x	PZ99	DB10	25,50	26,00	26,00	26,20	4	25,93		0,30	1,15	94,90
10	F14x	PC01	DB10	27,05	25,84	26,36	25,17	4	26,11		0,80	3,05	95,56
11	F32x	PD01	DB10	25,80	27,90	26,80	26,80	4	26,83		0,86	3,20	98,20
12	F08x	PC01	DB10	27,47	25,11	29,08	27,25	4	27,23		1,63	5,99	99,67
13	A60	PD01	DB10	31,08	28,62	27,20	29,75	4	29,16		1,65	5,66	106,75
14	A58x	PD02	DB05	30,94	30,83	27,87	29,75	4	29,85		1,42	4,77	109,26
15	A39	PD02	DB08	29,70	32,10	30,00	30,00	4	30,45		1,11	3,64	111,47
16	A55	PC01	DB10	27,20	26,90	34,60	33,20	4	30,48		4,00	13,12	111,56
17	A80	PD01	DB10	32,50	23,20	25,40	41,80	4	30,73		8,38	27,28	112,47
18	F13x	PD01	DB05	31,00	31,00	32,00	30,00	4	31,00		0,82	2,63	113,48
19	F27	PD01	DB05	32,94	33,14	29,81	35,25	4	32,79		2,24	6,84	120,01
20	F15x	PC01	DB09	38,00	*53a*	34,00	35,00	3	35,67	*	2,08	5,84	130,56
21	A82	PC01	DB10	40,21	40,33	39,94	39,82	4	40,07	*	0,23	0,58	146,70
22	A89	PD02	DB10	184,60	206,90	259,80	242,50	0	223,45 *b*	*	34,00	15,21	817,97
23													
24													
25	F03	PC02	DB08	<50	<50	<50	<50						
26	F25	PB06	DB08	<50	<50	<50	<50						
27	F02	PD02	DB05	<50	<50	<50	<50						
28	F05	PD02	DB05	<25	<25	<25	<25						
29	F07x	PC01	DB08	<20	<20	<20	<20						
30	A49	PD05	DB08	<,3	<,3	<,3	<,3			*			
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	N	Mean	SI	VI
all labs	83	**27,32**	**1,659**	**6,074**
30	% from the mean			
	L		SR	VR
	21		**5,194**	**18,943**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: B **Sample: 1** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	Replications 2	Replications 3	Replications 4	n	Lab.mean			Lab.standard dev. Si	Lab.standard dev. Vi	Recovery %
1	F33x	PD01	DB10	38,96	40,31	42,02	41,93	0	40,81	*b*	*	1,46	3,58	71,23
2	F16x	PC01	DB10	52,11	52,90	47,96	55,38	4	52,09			3,08	5,92	90,92
3	A55	PC01	DB10	52,06	52,08	52,39	52,11	4	52,16			0,15	0,29	91,05
4	F18x	PD01	DB08	53,10	52,90	53,20	53,80	4	53,25			0,39	0,73	92,95
5	A89	PD02	DB08	54,10	53,70	53,20	53,40	4	53,60			0,39	0,73	93,56
6	A79	PD03	DB10	53,98	54,38	54,16	54,43	4	54,24			0,21	0,38	94,67
7	F07x	PC01	DB08	54,97	57,26	53,93	54,61	4	55,19			1,44	2,62	96,34
8	F05	PD02	DB08	55,80	55,00	55,00	55,80	4	55,40			0,46	0,83	96,70
9	A59x	PC01	DB08	55,46	56,34	55,92	56,13	4	55,96			0,38	0,67	97,68
10	A65	PD01	DB08	56,80	56,80	56,60	55,90	4	56,53			0,43	0,76	98,66
11	F08x	PC01	DB09	55,82	57,76	57,09	55,54	4	56,55			1,05	1,85	98,71
12	A49	PD05	DB08	57,50	59,60	59,50	53,90	4	57,63			2,67	4,62	100,58
13	F32	PD01	DB08	58,60	59,00	58,60	58,60	4	58,70			0,20	0,34	102,46
14	F14x	PC01	DB08	59,69	59,34	58,35	59,01	4	59,10			0,57	0,97	103,16
15	F19	PD02	DB08	59,60	59,00	59,10	59,70	4	59,35			0,35	0,59	103,60
16	A39	PD02	DB08	63,06	62,43	56,81	55,21	4	59,38			3,95	6,65	103,64
17	F20x	PD02	DB08	59,60	59,40	59,70	59,90	4	59,65			0,21	0,35	104,12
18	A36	PD02	DB08	60,00	59,20	60,30	59,70	4	59,80			0,47	0,78	104,38
19	A60	PD01	DB10	62,50	62,09	60,30	59,84	4	61,18			1,31	2,14	106,80
20	A51	PD02	DB08	62,31	62,09	61,94	63,37	4	62,43			0,65	1,04	108,97
21	F02	PD02	DB08	66,80	61,80	65,00	60,90	4	63,63			2,75	4,33	111,06
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	N	Mean	SI	VI
all labs	80	**57,29**	**1,055**	**1,842**
20	% from the mean			
	L		SR	VR
	20		**3,333**	**5,817**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: B **Sample: 2** Unit: µg/g

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	A49	PD05	DB08	1,30	1,40	1,90	1,60	4	1,55	*	0,26	17,07	43,79
2	A55	PC01	DB10	2,98	2,75	2,88	2,75	4	2,84		0,11	3,93	80,16
3	A51	PD02	DB08	3,08	2,45	2,55	3,41	4	2,87		0,45	15,82	81,21
4	F08x	PC01	DB09	2,90	3,01	2,94	2,97	4	2,95		0,05	1,55	83,47
5	A79	PD03	DB10	3,12	2,99	2,85	2,92	4	2,97		0,11	3,85	83,89
6	F32	PD01	DB08	2,98	3,03	2,92	3,03	4	2,99		0,05	1,75	84,48
7	A65	PD01	DB08	3,30	2,90	3,20	2,80	4	3,05		0,24	7,80	86,17
8	F05	PD02	DB08	3,00	3,16	3,26	3,07	4	3,12		0,11	3,61	88,22
9	F14x	PC01	DB08	3,25	3,13	3,09	3,15	4	3,16		0,07	2,16	89,14
10	F16x	PC01	DB10	3,26	3,22	3,13	3,14	4	3,19		0,07	2,05	90,02
11	F20x	PD02	DB08	3,31	3,27	3,37	3,26	4	3,30		0,05	1,51	93,31
12	F19	PD02	DB08	3,60	3,38	3,51	3,10	4	3,40		0,22	6,41	95,99
13	A59x	PC01	DB08	3,59	3,31	3,42	3,37	4	3,42		0,12	3,52	96,70
14	F07x	PC01	DB08	3,71	3,58	3,46	3,62	4	3,59		0,10	2,80	101,46
15	A60	PD01	DB10	4,81	3,72	4,03	3,02	4	3,89		0,74	19,01	109,98
16	F02	PD02	DB08	3,80	4,90	3,40	4,30	4	4,10		0,65	15,81	115,84
17	A36	PD02	DB08	4,80	4,80	5,00	4,70	4	4,83	*	0,13	2,61	136,32
18	A39	PD02	DB08	5,97	5,76	5,79	5,59	4	5,78	*	0,16	2,70	163,20
19	A89	PD02	DB08	6,26	6,24	6,25	6,26	4	6,25	*	0,01	0,15	176,65
20	F33x	PD01	DB10	8,83	7,48	7,74	7,29	0	7,84	*b* *	0,69	8,79	221,36
21													
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23	F18x	PD01	DB08	<5	<5	<5	<5			**			
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	N	Mean	SI	VI
all labs	76	**3,54**	**0,195**	**5,495**
30	% from the mean			

L	SR	VR
19	**1,083**	**30,588**

* = non tolerable mean because more than +/-

limit for the lower concentartion range

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: B **Sample: 3** Unit: µg/g

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	A89	PD02	DB08	10,40	10,30	12,40	10,40	4	10,88	1,02	9,36	87,07
2	A55	PC01	DB10	11,20	10,87	11,21	11,11	4	11,10	0,16	1,43	88,85
3	A79	PD03	DB10	11,26	11,30	11,28	11,17	4	11,25	0,06	0,51	90,09
4	F05	PD02	DB08	11,80	11,80	11,80	11,70	4	11,78	0,05	0,42	94,28
5	F07x	PC01	DB08	11,92	11,51	11,94	11,88	4	11,81	0,20	1,72	94,58
6	A65	PD01	DB08	12,20	11,90	11,80	11,70	4	11,90	0,22	1,82	95,28
7	A59x	PC01	DB08	11,94	12,02	11,84	11,84	4	11,91	0,09	0,73	95,36
8	F16x	PC01	DB10	11,63	11,84	11,97	12,27	4	11,93	0,27	2,26	95,51
9	F08x	PC01	DB09	11,80	12,50	11,88	12,16	4	12,08	0,32	2,63	96,75
10	F19	PD02	DB08	12,10	12,30	12,20	12,20	4	12,20	0,08	0,67	97,68
11	F32	PD01	DB08	12,20	12,20	12,30	12,40	4	12,28	0,10	0,78	98,28
12	F18x	PD01	DB08	11,90	12,40	12,30	12,50	4	12,28	0,26	2,14	98,28
13	A49	PD05	DB08	11,20	11,50	13,50	13,40	4	12,40	1,22	9,83	99,28
14	F14x	PC01	DB08	12,49	12,44	12,65	12,56	4	12,54	0,09	0,73	100,36
15	F20x	PD02	DB08	12,60	12,60	12,60	12,60	4	12,60	0,00	0,00	100,88
16	A51	PD02	DB08	12,75	13,21	12,39	12,48	4	12,71	0,37	2,90	101,74
17	A36	PD02	DB08	13,40	13,70	13,50	12,00	4	13,15	0,78	5,91	105,29
18	F02	PD02	DB08	14,10	12,70	14,10	12,80	4	13,43	0,78	5,81	107,49
19	A39	PD02	DB08	14,01	14,56	14,64	14,10	4	14,33	0,32	2,22	114,72
20	A60	PD01	DB10	14,86	14,37	14,56	15,38	4	14,79	0,44	2,98	118,43
21	F33x	PD01	DB10	15,20	14,77	15,37	14,51	4	14,96	0,39	2,63	119,80
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	N	Mean	SI	VI
all labs	84	**12,49**	**0,343**	**2,748**
20	% from the mean			
	L		SR	VR
	21		**1,108**	**8,873**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Element: B **Sample: 4** Unit: µg/g

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	A79	PD03	DB10	9,10	9,06	9,03	9,04	4	9,06			0,03	0,34	92,52
2	A55	PC01	DB10	9,02	9,18	9,19	8,89	4	9,07			0,15	1,61	92,64
3	A49	PD05	DB08	9,73	8,71	9,80	8,12	4	9,09			0,82	8,98	92,85
4	F05	PD02	DB08	9,30	9,27	9,25	9,38	4	9,30			0,06	0,61	95,00
5	A65	PD01	DB08	9,30	9,40	9,40	9,70	4	9,45			0,17	1,83	96,53
6	F16x	PC01	DB10	9,38	9,58	9,84	9,52	4	9,58			0,19	2,00	97,85
7	F07x	PC01	DB08	9,55	9,58	9,95	9,87	4	9,74			0,20	2,09	99,47
8	F08x	PC01	DB09	9,83	9,89	9,59	9,74	4	9,76			0,13	1,33	99,73
9	A59x	PC01	DB08	10,06	9,75	9,88	9,56	4	9,81			0,21	2,15	100,23
10	F19	PD02	DB08	9,95	9,91	9,98	9,82	4	9,92			0,07	0,70	101,28
11	F32	PD01	DB08	9,70	10,10	10,10	9,96	4	9,97			0,19	1,89	101,79
12	F18x	PD01	DB08	10,10	10,10	9,84	10,00	4	10,01			0,12	1,23	102,25
13	F14x	PC01	DB08	10,17	10,02	9,99	10,02	4	10,05			0,08	0,81	102,66
14	A51	PD02	DB08	10,74	10,12	9,65	9,79	4	10,08			0,48	4,80	102,93
15	F20x	PD02	DB08	10,20	10,10	10,20	10,10	4	10,15			0,06	0,57	103,68
16	A36	PD02	DB08	10,40	10,70	10,20	9,40	4	10,18			0,56	5,46	103,93
17	A89	PD02	DB08	10,45	10,45	10,44	10,42	4	10,44			0,01	0,14	106,64
18	F02	PD02	DB08	11,30	10,30	10,00	10,70	4	10,58			0,56	5,31	108,02
19	A39	PD02	DB08	12,57	12,90	12,86	12,73	0	12,76	*b*	*	0,15	1,14	130,39
20	F33x	PD01	DB10	12,86	12,52	13,22	13,00	0	12,90	*b*	*	0,29	2,28	131,77
21	A60	PD01	DB10	12,15	19,42	19,81	14,09	0	16,37	*b*	*	3,84	23,43	167,20
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	N	Mean	SI	VI
all labs	72	**9,79**	**0,227**	**2,323**
20	% from the mean			
	L		SR	VR
	18		**0,454**	**4,642**

* = non tolerable mean because more than +/-

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Ag	(ng/g)	1	A89	PD02	DB10	<10	<10	<10	<10			
			A82	PC01	DB10	17,915	14,654	20,829	16,771	17,54	2,574	14,674
Ag	(ng/g)	2	A82	PC01	DB10	63,38	67,122	66,288	64,07	65,22	1,776	2,724
			A89	PD02	DB10	103,2	102,3	108,9	101,9	104,08	3,262	3,135
Ag	(ng/g)	3	A89	PD02	DB10	<10	<10	<10	<10			
			A82	PC01	DB10	10,396	10,296	9,667	10,191	10,14	0,325	3,202
Ag	(ng/g)	4	A89	PD02	DB10	<10	<10	<10	<10			
			A82	PC01	DB10	5,06	4,793	5,032	5,359	5,06	0,232	4,584
Al	(µg/g)	1	F18x	PD01	DB08	64,9	58,6	60	59,5	60,75	2,827	4,653
			A89	PD02	DB08	68,1	64,1	61,9	62	64,03	2,900	4,529
			F19	PD02	DB08	69,5	64,8	66,9	66,1	66,83	1,982	2,966
			A51	PD02	DB08	67,57	69,13	72,05	70,19	69,74	1,881	2,698
			F03	PC02	DB08	73,69	74,95	75,9	75,07	74,90	0,912	1,218
			A80	PD01	DB10	78,6	71,7	86,1	75,6	78,00	6,094	7,813
			F05x	PD02	DB08	79,5	78,2	78,5	77,6	78,45	0,794	1,012
			F33x	PD01	DB10	82,5	78,6	78,7	76,5	79,08	2,498	3,160
			A79	PD03	DB10	86,32	84,75	83,95	87,63	85,66	1,640	1,914
			A36	PD02	DB08	88,5	86,7	85,9	94,4	88,88	3,840	4,321
			A39	PD02	DB08	87,276	90,213	88,23	90,078	88,95	1,436	1,615
			A55	PC01	DB08	91,265	89,877	91,026	89,946	90,53	0,720	0,795
			F15x	PC01	DB08	84	107	87	85	90,75	10,905	12,016
			A65	PD01	DB08	90	91	92	91	91,00	0,816	0,897
			A60	PD01	DB10	89,338	97,92	95,732	88,509	92,87	4,661	5,019
			F25	PB06	DB08	96,3	93,9	91,6	92,2	93,50	2,106	2,252
			F12x	PC01	DB08	99	98	98	95	97,50	1,732	1,776
			F16x	PC01	DB08	96,07	97,65	101,3	103,9	99,73	3,539	3,549
			A45x	PZ99	DB08	99,4	101	100	101	100,35	0,790	0,787
			A49x	PD05	DB08	101	100	100	102	100,75	0,957	0,950
			A56	PC01	DB08	107,457	109,431	132,919	102,976	113,20	13,423	11,859

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Al	(µg/g)	1	A53	PZ02	DD01	164	169	169	169	167,75	2,500	1,490
			A57	PZ98	DD02	174,4	170,1	192,8	154,9	173,05	15,599	9,014
Al	(µg/g)	2	F18x	PD01	DB08	219	217	216	211	215,75	3,403	1,577
			F25	PB06	DB08	248,4	242,4	245,9	251,2	246,98	3,740	1,514
			F33x	PD01	DB10	240,3	241,4	275,4	247,2	251,08	16,497	6,570
			F05x	PD02	DB08	252	262	251	254	254,75	4,992	1,959
			F03	PC02	DB08	263,75	258,61	264,34	278,49	266,30	8,526	3,202
			A39	PD02	DB08	274,28	273,86	266,08	258,1	268,08	7,647	2,853
			A80	PD01	DB10	310	277	222	284	273,25	36,999	13,540
			F19	PD02	DB08	277	284	279	266	276,50	7,594	2,746
			A89	PD02	DB08	321,3	320,6	300,6	300,7	310,80	11,724	3,772
			F12x	PC01	DB08	309	313	310	316	312,00	3,162	1,014
			A51	PD02	DB08	309,4	308,4	319,9	316,1	313,45	5,493	1,753
			A36	PD02	DB08	336	313	335	329	328,25	10,626	3,237
			F15x	PC01	DB08	341	330	316	339	331,50	11,387	3,435
			A60	PD01	DB10	345,489	346,376	355,682	346,376	348,48	4,819	1,383
			A65	PD01	DB08	333	365	394	372	366,00	25,232	6,894
			A56	PC01	DB08	375,622	357,816	373,23	370	369,17	7,910	2,143
			F16x	PC01	DB08	383,3	361,1	370,3	386,2	375,23	11,682	3,113
			A79	PD03	DB10	389,1	396	385,8	385,2	389,03	4,956	1,274
			A45x	PZ99	DB08	462	475	462	470	467,25	6,397	1,369
			A55	PC01	DB08	495,97	512,42	511,87	522,03	510,57	10,795	2,114
			A49x	PD05	DB08	523	524	545	508	525,00	15,210	2,897
			A57	PZ98	DD02	579,6	582	610,2	568,6	585,10	17,721	3,029
			A53	PZ02	DD01	661	654	643	638	649,00	10,424	1,606
Al	(µg/g)	3	A89	PD02	DB08	82,9	86,8	88,9	78,8	84,35	4,458	5,285
			F19	PD02	DB08	88,9	89,6	88,7	88,7	88,98	0,427	0,480
			F18x	PD01	DB08	91,4	98,2	97,8	95,8	95,80	3,116	3,252
			A79	PD03	DB10	95,11	98,64	95,85	95,87	96,37	1,556	1,614

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Al	(µg/g)	3	F25	PB06	DB08	100,4	106,1	101	103,4	102,73	2,597	2,528
			F33x	PD01	DB10	112,4	109,2	101,8	94	104,35	8,205	7,863
			F05x	PD02	DB08	105	106	106	104	105,25	0,957	0,910
			A51	PD02	DB08	107,3	104,7	104,8	106,4	105,80	1,268	1,198
			A55	PC01	DB08	106,5	107,79	107,82	108,44	107,64	0,815	0,758
			A80	PD01	DB10	114	104	116	97	107,75	8,884	8,245
			A65	PD01	DB08	113	108	108	112	110,25	2,630	2,385
			A36	PD02	DB08	109	109	109	115	110,50	3,000	2,715
			F16x	PC01	DB08	115,7	110,7	115,9	110,1	113,10	3,128	2,766
			F12x	PC01	DB08	115	116	111	111	113,25	2,630	2,322
			A39	PD02	DB08	109,19	116,84	118,04	109,88	113,49	4,599	4,052
			F15x	PC01	DB08	101	123	120	117	115,25	9,811	8,513
			A45x	PZ99	DB08	117	117	115	119	117,00	1,633	1,396
			A60	PD01	DB10	109,311	115,681	109,373	134,707	117,27	12,004	10,236
			F03	PC02	DB08	118,83	128,6	119,6	121,52	122,14	4,454	3,647
			A56	PC01	DB08	134,551	131,011	122,84	122,72	127,78	5,952	4,658
			A49x	PD05	DB08	121	145	126	124	129,00	10,863	8,421
			A53	PZ02	DD01	144	141	144	143	143,00	1,414	0,989
			A57	PZ98	DD02	153,5	164,8	153,5	138,6	152,60	10,746	7,042
Al	(µg/g)	4	F19	PD02	DB08	214	216	213	219	215,50	2,646	1,228
			F18x	PD01	DB08	238	216	220	220	223,50	9,849	4,407
			A89	PD02	DB08	238,3	238	216,8	216,7	227,45	12,356	5,432
			F05x	PD02	DB08	235	234	233	233	233,75	0,957	0,410
			A79	PD03	DB10	238,7	238,9	241,7	238,7	239,50	1,470	0,614
			F25	PB06	DB08	242,1	233,2	243,2	245,9	241,10	5,503	2,283
			F33x	PD01	DB10	242	239,2	244,5	253,8	244,88	6,332	2,586
			A80	PD01	DB10	259	241	253	242	248,75	8,732	3,510
			A51	PD02	DB08	245,1	242,3	249	264,9	250,33	10,098	4,034
			A39	PD02	DB08	260,21	255,03	252,44	251,66	254,84	3,862	1,515

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Al	(µg/g)	4	A65	PD01	DB08	263	262	263	257	261,25	2,872	1,099
			A36	PD02	DB08	267	264	262	272	266,25	4,349	1,634
			F03	PC02	DB08	269,85	267,93	272,19	270,1	270,02	1,743	0,645
			F15x	PC01	DB08	266	282	273	281	275,50	7,506	2,724
			F16x	PC01	DB08	273,3	273,8	285,7	275,6	277,10	5,818	2,100
			F12x	PC01	DB08	273	285	281	271	277,50	6,608	2,381
			A60	PD01	DB10	260,783	307,897	277,168	270,239	279,02	20,388	7,307
			A55	PC01	DB08	287,67	289,05	289,42	288,4	288,64	0,769	0,266
			A49x	PD05	DB08	307	306	291	283	296,75	11,730	3,953
			A56	PC01	DB08	294,9468	303,874	294,572	326,18	304,89	14,828	4,863
			A57	PZ98	DD02	301,7	307	306,9	305,3	305,23	2,476	0,811
			A45x	PZ99	DB08	342	299	307	292	310,00	22,196	7,160
			A53	PZ02	DD01	348	353	360	347	352,00	5,944	1,689
As	(ng/g)	1	F05	PD02	DB05	<413	<413	<413	<413			
			F33x	PD01	DB10	13,73	23,31	17,95	9,86	16,21	5,771	35,595
			A79	PD03	DB10	23,5	21	22,5	21,5	22,13	1,109	5,011
			F14x	PC01	DB10	27	25	25	26	25,75	0,957	3,718
			A55	PC01	DB04	26,9	27,3	26,6	25,9	26,68	0,591	2,215
			F16x	PC01	DB10	29,13	28,32	27,6	29,79	28,71	0,953	3,321
			A36	PC02	DB10	30,1	28,9	29	29,5	29,38	0,550	1,872
			A82	PC01	DB10	31,524	34,989	33,338	33,951	33,45	1,454	4,346
			A80	PD01	DB10	36	32,9	35,8	31,1	33,95	2,370	6,981
			F08x	PC01	DB10	34	33	35,1	34	34,03	0,858	2,521
			F32	PD01	DB10	35	35	33	34	34,25	0,957	2,795
			A89	PD02	DB10	32,87	34,54	38,57	34,85	35,21	2,404	6,829
			A39	PD02	DB08	57,3	60,9	54,9	57,08	57,55	2,485	4,319
As	(ng/g)	2	F05	PD02	DB05	<413	<413	<413	<413			
			A55	PC01	DB04	75,2	82	92,1	75,3	81,15	7,963	9,813
			A79	PD03	DB10	107	109,5	105,5	107,3	107,33	1,650	1,537

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
As	(ng/g)	2	A80	PD01	DB10	120	123	83,4	103	107,35	18,234	16,986
			A36	PC02	DB10	118	121,5	120,1	116,6	119,05	2,176	1,828
			F16x	PC01	DB10	128,3	141,1	123,4	131	130,95	7,462	5,698
			F33x	PD01	DB10	167,99	96,15	167,8	93,97	131,48	42,061	31,991
			A89	PD02	DB10	130,8	130,7	135,7	130,3	131,88	2,559	1,941
			F08x	PC01	DB10	131,6	133,7	132,6	132,6	132,63	0,858	0,647
			F14x	PC01	DB10	128	140	137	133	134,50	5,196	3,863
			A39	PD02	DB08	132,3	139,5	139,2	134,4	136,35	3,571	2,619
			F32	PD01	DB10	139	132	137	140	137,00	3,559	2,598
			A82	PC01	DB10	114,479	477,96	144,868	162,147	224,86	169,878	75,547
As	(ng/g)	3	F05	PD02	DB05	<413	<413	<413	<413			
			A89	PD02	DB10	23,98	24,93	28,92	26,41	26,06	2,153	8,261
			A79	PD03	DB10	31,5	33,5	36	34,5	33,88	1,887	5,572
			A80	PD01	DB10	38	36,3	39,8	32,6	36,68	3,070	8,370
			F14x	PC01	DB10	38	36	39	41	38,50	2,082	5,407
			A36	PC02	DB10	40,7	39,9	41,2	40,7	40,63	0,538	1,324
			F16x	PC01	DB10	42,64	42,72	38,37	42,87	41,65	2,189	5,255
			A55	PC01	DB04	41,9	42,3	41,9	42,8	42,23	0,427	1,012
			F33x	PD01	DB10	43,72	42,35	40,53	49,24	43,96	3,755	8,541
			F08x	PC01	DB10	47	45,9	44,9	45,9	45,93	0,858	1,868
			A82	PC01	DB10	44,454	43,498	49,337	47,559	46,21	2,710	5,865
			F32	PD01	DB10	45	50	47	46	47,00	2,160	4,596
			A39	PD02	DB08	73,2	72,9	66,9	80,7	73,43	5,652	7,697
As	(ng/g)	4	F05	PD02	DB05	<413	<413	<413	<413			
			A79	PD03	DB10	32,2	32	32,9	34,5	32,90	1,134	3,448
			F14x	PC01	DB10	37	35	38	39	37,25	1,708	4,585
			F33x	PD01	DB10	41,13	33,37	38,68	37,47	37,66	3,241	8,607
			A55	PC01	DB04	39,4	39,3	39,6	41	39,83	0,793	1,992
			A36	PC02	DB10	41,3	39,9	41,3	39,9	40,60	0,808	1,991

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
As	(ng/g)	4	A80	PD01	DB10	40,9	40,8	42,5	39,8	41,00	1,117	2,723
			F16x	PC01	DB10	40,36	41,59	43,74	42,01	41,93	1,398	3,334
			F32	PD01	DB10	44	42	41	45	43,00	1,826	4,246
			F08x	PC01	DB10	46,1	41,8	42,9	45,1	43,98	1,972	4,485
			A89	PD02	DB10	47,01	51,24	44,81	46,03	47,27	2,794	5,910
			A82	PC01	DB10	49,762	45,934	49,431	52,367	49,37	2,642	5,352
			A39	PD02	DB08	69	65,8	65,4	59,7	64,98	3,868	5,953
Ba	(µg/g)	1	F16x	PC01	DB10	84,411	83,189	73,284	85,345	81,56	5,586	6,849
			A89	PD02	DB10	93,4	95,9	96,5	96,1	95,48	1,406	1,472
			A49	PD03	DB08	106	107	105	94	103,00	6,055	5,879
			A80	PD01	DB10	106	106	111	103	106,50	3,317	3,114
			A65	PD01	DB08	110,5	109	109,3	111	109,95	0,954	0,868
			A61x	PC01	DB08	111	114,2	109,7	111,6	111,63	1,891	1,694
			A39	PD02	DB08	113,4	109,82	111,77	111,61	111,65	1,464	1,311
			A82	PD01	DB08	174	178	177	177	176,50	1,732	0,981
Ba	(µg/g)	2	A89	PD02	DB10	5,53	5,59	5,54	5,37	5,51	0,095	1,731
			F16x	PC01	DB10	5,49	5,922	5,544	5,965	5,73	0,248	4,325
			A80	PD01	DB10	6,62	5,91	4,95	5,9	5,85	0,685	11,725
			A39	PD02	DB08	5,997	6,48	6,063	6,012	6,14	0,230	3,743
			A61x	PC01	DB08	6,6	6,9	6,2	6,6	6,58	0,287	4,368
			A65	PD01	DB08	6,7	6,9	7,5	7,1	7,05	0,342	4,845
			A82	PD01	DB08	6,07	7,36	8,16	7,89	7,37	0,928	12,594
			A49	PD03	DB08	7,15	7,6	7,99	7,56	7,58	0,343	4,533
Ba	(µg/g)	3	F16x	PC01	DB10	27,835	28,358	28,551	29,563	28,58	0,724	2,533
			A89	PD02	DB10	32,4	32,8	33,3	32,3	32,70	0,455	1,390
			A39	PD02	DB08	35,47	34,49	34,8	34,36	34,78	0,496	1,425
			A80	PD01	DB10	37,9	34,5	39,3	32,2	35,98	3,224	8,962
			A65	PD01	DB08	36,7	35,8	36	36	36,13	0,395	1,093
			A61x	PC01	DB08	38,1	37,9	35,8	37,3	37,28	1,040	2,791

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Ba	(µg/g)	3	A49	PD03	DB08	35,5	37,2	40,4	41,2	38,58	2,681	6,951
			A82	PD01	DB08	35,1	59,8	59,7	58,8	53,35	12,175	22,821
Ba	(µg/g)	4	F16x	PC01	DB10	10,423	10,28	10,591	10,719	10,50	0,192	1,827
			A89	PD02	DB10	11,46	10,87	11,39	11,15	11,22	0,267	2,380
			A65	PD01	DB08	12,9	12,7	13,1	12,8	12,88	0,171	1,326
			A39	PD02	DB08	12,77	13,3	12,88	13,01	12,99	0,229	1,761
			A80	PD01	DB10	13,7	12,8	13,6	13	13,28	0,443	3,334
			A61x	PC01	DB08	13,6	13,5	13,6	13,6	13,58	0,050	0,368
			A49	PD03	DB08	14,5	13,6	14,3	12,7	13,78	0,814	5,909
			A82	PD01	DB08	19,9	19,7	19,7	19,4	19,68	0,206	1,048
Be	(µg/g)	1	F16x	PC01	DB10	0,0223	0,0218	0,0194	0,0232	0,02	0,002	7,490
			A89	PD02	DB10	0,0292	0,0269	0,0226	0,0253	0,03	0,003	10,673
Be	(µg/g)	2	A89	PD02	DB10	<,01	<,01	<,01	<,01			
			F16x	PC01	DB10	0,0051	0,0059	0,0054	0,0061	0,01	0,000	8,131
Be	(µg/g)	3	A89	PD02	DB10	<,01	<,01	<,01	<,01			
			F16x	PC01	DB10	0,0111	0,0112	0,011	0,0116	0,01	0,000	2,343
Be	(µg/g)	4	A89	PD02	DB10	<,01	<,01	<,01	<,01			
			F16x	PC01	DB10	0,0497	0,0504	0,0501	0,0523	0,05	0,001	2,277
Bi	(ng/g)	1	A89	PD02	DB10	<10	<10	<10	<10			
			A80	PD01	DB10	10,5	10	12	10,3	10,70	0,891	8,324
			F16x	PC01	DB10	11,29	11,61	11,2	10,69	11,20	0,381	3,406
Bi	(ng/g)	2	A89	PD02	DB10	<10	<10	<10	<10			
			A80	PD01	DB10	12,7	12,2	8,6	11,2	11,18	1,826	16,344
			F16x	PC01	DB10	11,34	12,53	11,5	13,98	12,34	1,215	9,851
Bi	(ng/g)	3	A89	PD02	DB10	<10	<10	<10	<10			
			A80	PD01	DB10	4,1	4,7	4,1	<3,5	4,30	0,346	8,056
			F16x	PC01	DB10	3,735	3,865	3,989	3,628	3,80	0,157	4,120

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Bi	(ng/g)	4	A89	PD02	DB10	<10	<10	<10	<10			
			A80	PD01	DB10	4,5	4,8	4,5	<3,5	4,60	0,173	3,765
			F16x	PC01	DB10	4,061	3,929	4,164	4,592	4,19	0,287	6,854
Br	(µg/g)	1	A53	PZ02	DD01	<1	<1	<1	<1			
Br	(µg/g)	2	A53	PZ02	DD01	5,4	5,4	5,4	5,3	5,38	0,050	0,930
Br	(µg/g)	3	A53	PZ02	DD01	<1	<1	<1	<1			
Br	(µg/g)	4	A53	PZ02	DD01	<1	<1	<1	<1			
Ce	(ng/g)	1	A80	PD01	DB10	289	267	307	286	287,25	16,378	5,702
Ce	(ng/g)	2	A80	PD01	DB10	334	313	225	289	290,25	47,226	16,271
Ce	(ng/g)	3	A80	PD01	DB10	59,7	56,9	60,4	50,8	56,95	4,370	7,673
Ce	(ng/g)	4	A80	PD01	DB10	125	154	114	142	133,75	17,746	13,268
Cl	(µg/g)	1	A53	PZ02	DD01	50	50	46	46	48,00	2,309	4,811
			F02	PA06	DF08	60	40	50	50	50,00	8,165	16,330
			F05	PZ99	DF08	100	86,9	89,1	80,3	89,08	8,187	9,191
			A57	PZ98	DD02	180	170	190	150	172,50	17,078	9,900
Cl	(µg/g)	2	F02	PA06	DF08	60	30	40	40	42,50	12,583	29,607
			F05	PZ99	DF08	178	148	157	144	156,75	15,174	9,680
			A53	PZ02	DD01	160	164	157	159	160,00	2,944	1,840
			A57	PZ98	DD02	270	270	280	260	270,00	8,165	3,024
Cl	(µg/g)	3	F02	PA06	DF08	500	480	470	480	482,50	12,583	2,608
			F05	PZ99	DF08	518	498	559	529	526,00	25,469	4,842
			A53	PZ02	DD01	582	584	581	583	582,50	1,291	0,222
			A57	PZ98	DD02	660	670	660	640	657,50	12,583	1,914
Cl	(µg/g)	4	F05	PZ99	DF08	507	523	517	527	518,50	8,699	1,678
			F02	PA06	DF08	510	540	530	540	530,00	14,142	2,668
			A53	PZ02	DD01	617	605	607	606	608,75	5,560	0,913
			A57	PZ98	DD02	680	680	680	660	675,00	10,000	1,481

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Co	(µg/g)	1	A49	PD05	DB08	<,3	<,3	<,3	<,3			
			F12x	PD01	DB09	<,28	<,28	<,28	<,28			
			F33	PD01	DB10	0,044	0,047	0,042	0,043	0,04	0,002	4,910
			A61x	PD01	DB08	0,055	0,049	0,042	0,053	0,05	0,006	11,532
			A79	PD03	DB10	0,0585	0,057	0,058	0,058	0,06	0,001	1,087
			A55	PC01	DB10	0,0589	0,0575	0,0592	0,0586	0,06	0,001	1,267
			F16x	PC01	DB10	0,0612	0,0596	0,0528	0,062	0,06	0,004	7,109
			A36	PD02	DB10	0,065	0,064	0,064	0,064	0,06	0,001	0,778
			F14x	PC01	DB10	0,066	0,065	0,064	0,063	0,06	0,001	2,002
			A60	PD01	DB10	0,0595	0,0662	0,0663	0,0684	0,07	0,004	5,943
			A45x	PZ99	DB10	0,0649	0,0668	0,0646	0,0659	0,07	0,001	1,528
			A80	PD01	DB10	0,0713	0,0645	0,0692	0,0668	0,07	0,003	4,333
			F32	PD01	DB10	0,07	0,071	0,071	0,072	0,07	0,001	1,150
			A82	PD01	DB10	0,072	0,071	0,075	0,073	0,07	0,002	2,348
			F08	PC01	DB10	0,0787	0,0755	0,066	0,0734	0,07	0,005	7,348
			A39	PD02	DB08	0,0831	0,0882	0,084	0,0856	0,09	0,002	2,624
			A89	PD02	DB10	0,0803	0,0813	0,0871	0,0927	0,09	0,006	6,730
Co	(µg/g)	2	A49	PD05	DB08	<,3	<,3	<,3	<,3			
			F12x	PD01	DB09	<,28	<,28	<,28	<,28			
			F33	PD01	DB10	0,102	0,098	0,112	0,1	0,10	0,006	6,037
			A80	PD01	DB10	0,179	0,158	0,127	0,16	0,16	0,022	13,798
			A36	PD02	DB10	0,173	0,169	0,181	0,176	0,17	0,005	2,894
			A79	PD03	DB10	0,175	0,175	0,176	0,174	0,18	0,001	0,467
			A45x	PZ99	DB10	0,184	0,176	0,178	0,176	0,18	0,004	2,121
			F16x	PC01	DB10	0,1974	0,1747	0,2002	0,1755	0,19	0,014	7,347
			A60	PD01	DB10	0,197	0,186	0,199	0,182	0,19	0,008	4,339
			A55	PC01	DB10	0,1897	0,1966	0,1847	0,1945	0,19	0,005	2,772
			F08	PC01	DB10	0,1947	0,1904	0,2	0,1882	0,19	0,005	2,692
			A89	PD02	DB10	0,1986	0,1978	0,2006	0,1905	0,20	0,004	2,240

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Co	(µg/g)	2	A82	PD01	DB10	0,171	0,205	0,207	0,208	0,20	0,018	9,040
			A39	PD02	DB08	0,2067	0,2091	0,1965	0,1971	0,20	0,006	3,206
			F32	PD01	DB10	0,208	0,206	0,206	0,207	0,21	0,001	0,463
			F14x	PC01	DB10	0,204	0,225	0,221	0,217	0,22	0,009	4,201
			A61x	PD01	DB08	0,215	0,242	0,218	0,225	0,23	0,012	5,370
Co	(µg/g)	3	A49	PD05	DB08	<,3	<,3	<,3	<,3			
			F12x	PD01	DB09	<,28	<,28	<,28	<,28			
			F33	PD01	DB10	0,102	0,097	0,097	0,092	0,10	0,004	4,209
			A79	PD03	DB10	0,1265	0,1285	0,1275	0,1275	0,13	0,001	0,640
			A61x	PD01	DB08	0,145	0,144	0,122	0,137	0,14	0,011	7,748
			F16x	PC01	DB10	0,1375	0,1365	0,139	0,1418	0,14	0,002	1,664
			A55	PC01	DB10	0,1437	0,1393	0,1408	0,1436	0,14	0,002	1,528
			A36	PD02	DB10	0,148	0,148	0,145	0,145	0,15	0,002	1,182
			A45x	PZ99	DB10	0,142	0,149	0,149	0,146	0,15	0,003	2,264
			F14x	PC01	DB10	0,146	0,151	0,146	0,146	0,15	0,003	1,698
			A60	PD01	DB10	0,147	0,151	0,15	0,148	0,15	0,002	1,225
			A80	PD01	DB10	0,159	0,143	0,164	0,132	0,15	0,015	9,838
			F08	PC01	DB10	0,1485	0,1517	0,1506	0,1528	0,15	0,002	1,216
			A39	PD02	DB08	0,1608	0,1482	0,1518	0,1509	0,15	0,005	3,576
			A89	PD02	DB10	0,1506	0,1594	0,1577	0,1529	0,16	0,004	2,640
			A82	PD01	DB10	0,157	0,155	0,158	0,163	0,16	0,003	2,151
			F32	PD01	DB10	0,158	0,158	0,161	0,16	0,16	0,002	0,942
Co	(µg/g)	4	A49	PD05	DB08	<,3	<,3	<,3	<,3			
			F12x	PD01	DB09	<,28	<,28	<,28	<,28			
			F33	PD01	DB10	0,075	0,075	0,077	0,08	0,08	0,002	3,079
			A79	PD03	DB10	0,1141	0,1128	0,1101	0,1093	0,11	0,002	2,019
			F16x	PC01	DB10	0,1157	0,1164	0,1146	0,1141	0,12	0,001	0,905
			A55	PC01	DB10	0,1188	0,1183	0,1211	0,1218	0,12	0,002	1,426
			A45x	PZ99	DB10	0,12	0,122	0,119	0,119	0,12	0,001	1,179

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Co	(µg/g)	4	A36	PD02	DB10	0,124	0,123	0,124	0,121	0,12	0,001	1,150
			A80	PD01	DB10	0,131	0,124	0,134	0,122	0,13	0,006	4,445
			F08	PC01	DB10	0,1277	0,1288	0,132	0,1255	0,13	0,003	2,106
			A39	PD02	DB08	0,1266	0,1281	0,132	0,1278	0,13	0,002	1,820
			A61x	PD01	DB08	0,138	0,134	0,12	0,131	0,13	0,008	5,904
			F14x	PC01	DB10	0,126	0,123	0,126	0,15	0,13	0,013	9,585
			A60	PD01	DB10	0,137	0,133	0,127	0,128	0,13	0,005	3,540
			A89	PD02	DB10	0,1324	0,1309	0,1326	0,1337	0,13	0,001	0,870
			F32	PD01	DB10	0,136	0,135	0,131	0,136	0,13	0,002	1,770
			A82	PD01	DB10	0,135	0,134	0,138	0,135	0,14	0,002	1,278
Cr	(µg/g)	1	F03	PC02	DB08	<1	<1	<1	<1			
			A65	PD01	DB08	<1,1	1,4	<1,1	<1,1			
			F15x	PC01	DB09	<,25	<,25	<,25	<,25			
			F16x	PC01	DB10	0,6718	0,7196	0,6449	0,7412	0,69	0,044	6,325
			A79	PD03	DB10	0,682	0,698	0,717	0,723	0,71	0,019	2,649
			F18x	PD99	DB10	0,729	0,72	0,715	0,718	0,72	0,006	0,837
			A55	PD01	DB05	0,7	0,71	0,76	0,774	0,74	0,036	4,956
			F05	PD02	DB05	0,737	0,79	0,756	0,726	0,75	0,028	3,729
			A36	PC02	DB10	0,77	0,782	0,758	0,766	0,77	0,010	1,300
			F14x	PC01	DB10	0,75	0,816	0,794	0,785	0,79	0,027	3,491
			A39	PD02	DB08	0,7944	0,7845	0,822	0,8175	0,80	0,018	2,243
			F08	PC01	DB10	0,8255	0,834	0,8436	0,833	0,83	0,007	0,890
			F32	PD01	DB10	0,845	0,841	0,889	0,816	0,85	0,030	3,580
			A82	PC01	DB10	0,92	0,87	0,909	0,822	0,88	0,044	5,040
			A51	PD02	DB08	0,845	0,911	0,901	0,873	0,88	0,030	3,368
			A80	PD01	DB10	1,18	0,728	0,844	0,804	0,89	0,200	22,483
			A60	PC01	DB10	0,902	0,929	0,849	0,899	0,89	0,033	3,727
			F33x	PD01	DB10	0,88	1,02	0,88	1,03	0,95	0,084	8,800
			A49	PD05	DB08	0,96	1,13	0,94	0,83	0,97	0,124	12,846

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Cr	(µg/g)	1	F12x	PC01	DB09	0,93	1,09	1	1,09	1,03	0,078	7,554
			A61x	PB02	DB08	1,082	1,08	1,143	0,917	1,06	0,097	9,176
			A45x	PZ99	DB08	1,08	1,29	1,17	1,27	1,20	0,097	8,073
			A89	PD02	DB10	1,72	1,38	1,57	1,75	1,61	0,169	10,555
Cr	(µg/g)	2	F03	PC02	DB08	3	2,87	3,03	2,89	2,95	0,079	2,691
			F05	PD02	DB05	3,04	3,24	3,06	3,18	3,13	0,096	3,064
			A39	PD02	DB08	3,418	3,542	3,687	3,517	3,54	0,111	3,137
			F33x	PD01	DB10	3,62	3,43	3,82	3,61	3,62	0,159	4,403
			A51	PD02	DB08	3,589	3,621	3,912	3,662	3,70	0,147	3,979
			A80	PD01	DB10	4,3	3,63	3,08	3,82	3,71	0,504	13,607
			F15x	PC01	DB09	3,8	3,58	3,54	3,98	3,73	0,205	5,500
			A79	PD03	DB10	3,627	3,805	3,793	3,874	3,77	0,105	2,775
			A89	PD02	DB10	3,95	3,63	3,91	3,7	3,80	0,156	4,121
			A36	PC02	DB10	3,864	3,593	4,079	3,716	3,81	0,209	5,484
			F18x	PD99	DB10	4,04	4,06	3,63	3,78	3,88	0,209	5,378
			A45x	PZ99	DB08	3,99	3,77	3,95	3,84	3,89	0,101	2,593
			F16x	PC01	DB10	4,079	3,62	4,751	3,878	4,08	0,484	11,856
			A55	PD01	DB05	4,1194	4,3104	4,0124	4,1219	4,14	0,124	2,992
			F12x	PC01	DB09	4,03	4,39	4,26	4,22	4,23	0,149	3,524
			F32	PD01	DB10	4,36	4,27	4,27	4,33	4,31	0,045	1,045
			A82	PC01	DB10	3,918	4,45	4,502	4,561	4,36	0,297	6,807
			F08	PC01	DB10	4,3187	4,3455	4,4096	4,3658	4,36	0,038	0,879
			A49	PD05	DB08	4,35	4,22	4,5	4,37	4,36	0,115	2,628
			F14x	PC01	DB10	4,125	4,564	4,492	4,624	4,45	0,224	5,034
			A61x	PB02	DB08	4,359	4,483	4,547	4,444	4,46	0,079	1,763
			A65	PD01	DB08	4,2	4,5	4,7	4,7	4,53	0,236	5,222
			A60	PC01	DB10	4,4452	4,725	4,533	4,479	4,55	0,125	2,749

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Cr	(µg/g)	3	A65	PD01	DB08	<1,1	<1,1	<1,1	<1,1			
			F03	PC02	DB08	<1	<1	<1	<1			
			F15x	PC01	DB09	<,25	<,25	<,25	<,25			
			F12x	PC01	DB09	<,3	<,3	0,4	0,4	0,40	0,000	0,000
			A79	PD03	DB10	0,272	0,284	0,277	0,274	0,28	0,005	1,898
			F05	PD02	DB05	0,277	0,294	0,256	0,301	0,28	0,020	7,110
			A55	PD01	DB05	0,305	0,307	0,294	0,309	0,30	0,007	2,206
			A80	PD01	DB10	0,351	0,292	0,343	0,274	0,32	0,038	12,005
			A36	PC02	DB10	0,301	0,326	0,306	0,327	0,32	0,013	4,267
			A82	PC01	DB10	0,325	0,295	0,326	0,332	0,32	0,017	5,203
			F18x	PD99	DB10	0,332	0,336	0,303	0,309	0,32	0,016	5,135
			F32	PD01	DB10	0,329	0,337	0,332	0,325	0,33	0,005	1,529
			F16x	PC01	DB10	0,3154	0,3076	0,3819	0,3271	0,33	0,034	10,081
			A39	PD02	DB08	0,3339	0,3363	0,3219	0,3479	0,34	0,011	3,182
			A60	PC01	DB10	0,309	0,395	0,36	0,356	0,36	0,035	9,949
			F14x	PC01	DB10	0,368	0,35	0,387	0,343	0,36	0,020	5,446
			F08	PC01	DB10	0,359	0,3654	0,3643	0,3686	0,36	0,004	1,095
			A89	PD02	DB10	0,431	0,365	0,406	0,416	0,40	0,028	6,988
			F33x	PD01	DB10	0,56	0,64	0,44	0,32	0,49	0,140	28,571
			A51	PD02	DB08	0,569	0,579	0,595	0,549	0,57	0,019	3,360
			A45x	PZ99	DB08	0,779	0,832	0,762	0,879	0,81	0,053	6,537
			A49	PD05	DB08	0,8	0,81	0,97	0,92	0,88	0,083	9,539
			A61x	PB02	DB08	0,857	0,893	0,874	0,896	0,88	0,018	2,064
Cr	(µg/g)	4	A65	PD01	DB08	<1,1	<1,1	<1,1	<1,1			
			F03	PC02	DB08	<1	<1	<1	<1			
			A61x	PB02	DB08	<,5	<,5	<,5	<,5			
			F12x	PC01	DB09	<,3	<,3	<,3	<,3			
			A39	PD02	DB08	<,25	<,25	<,25	<,25			
			F15x	PC01	DB09	<,25	<,25	<,25	<,25			

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Cr	(µg/g)	4	F05	PD02	DB05	0,129	0,112	0,122	0,13	0,12	0,008	6,736
			A79	PD03	DB10	0,1387	0,145	0,131	0,14	0,14	0,006	4,177
			A89	PD02	DB10	0,148	0,151	0,141	0,143	0,15	0,005	3,138
			A36	PC02	DB10	0,164	0,148	0,153	0,166	0,16	0,009	5,487
			A80	PD01	DB10	0,203	0,156	0,205	0,138	0,18	0,034	19,219
			F32	PD01	DB10	0,189	0,168	0,197	0,185	0,18	0,012	6,620
			F16x	PC01	DB10	0,1524	0,229	0,1857	0,1815	0,19	0,032	16,877
			A55	PD01	DB05	0,176	0,226	0,199	0,169	0,19	0,026	13,376
			F18x	PD99	DB10	0,179	0,23	0,2	0,197	0,20	0,021	10,492
			A82	PC01	DB10	0,186	0,203	0,236	0,188	0,20	0,023	11,372
			F14x	PC01	DB10	0,194	0,215	0,199	0,205	0,20	0,009	4,444
			F08	PC01	DB10	0,2006	0,2124	0,206	0,2039	0,21	0,005	2,418
			A60	PC01	DB10	0,252	0,236	0,211	0,197	0,22	0,025	11,014
			F33x	PD01	DB10	0,3	0,33	0,29	0,35	0,32	0,028	8,673
			A49	PD05	DB08	0,397	0,357	0,384	0,325	0,37	0,032	8,713
			A51	PD02	DB08	0,406	0,334	0,395	0,375	0,38	0,032	8,401
			A45x	PZ99	DB08	0,627	0,627	0,618	0,5358	0,60	0,044	7,360
Cs	(ng/g)	1	A89	PD02	DB10	<10	<10	<10	<10			
			A80	PD01	DB10	15,5	14,4	15,7	14,6	15,05	0,645	4,289
			A82	PC01	DB10	24,858	23,716	23,67	23,464	23,93	0,630	2,634
Cs	(ng/g)	2	A89	PD02	DB10	<10	<10	<10	<10			
			A80	PD01	DB10	25,4	22,5	17,6	22,9	22,10	3,263	14,764
			A82	PC01	DB10	30,339	34,183	37,001	36,558	34,52	3,050	8,835
Cs	(ng/g)	3	A89	PD02	DB10	<10	<10	<10	<10			
			A80	PD01	DB10	99,6	90,9	104	85,1	94,90	8,504	8,961
			A82	PC01	DB10	113,561	114,056	113,699	112,249	113,39	0,790	0,696
Cs	(ng/g)	4	A89	PD02	DB10	32,7	31,9	30,8	32,1	31,88	0,793	2,488
			A80	PD01	DB10	59,3	55,4	59,2	56	57,48	2,065	3,592
			A82	PC01	DB10	71,534	69,12	71,525	71,343	70,88	1,177	1,660

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
F	(µg/g)	1	F02	PE01	DF03	<2	<2	<2	<2			
			F05	PZ99	DF03	2,02	2,1	1,95	2,12	2,05	0,078	3,812
			F32x	PB99	DF03	2,74	2,76	3,07	2,06	2,66	0,426	16,031
F	(µg/g)	2	F05	PZ99	DF03	1,76	2,09	2,17	2,11	2,03	0,185	9,093
			F32x	PB99	DF03	3,11	3,01	3,03	2,78	2,98	0,142	4,753
			F02	PE01	DF03	3,3	3,6	3,6	4	3,63	0,287	7,924
F	(µg/g)	3	F02	PE01	DF03	<2	2,4	<2	<2			
			F05	PZ99	DF03	1,73	2,1	2,04	1,91	1,95	0,164	8,422
			F32x	PB99	DF03	3,4	3,18	2,68	2,74	3,00	0,348	11,585
F	(µg/g)	4	F05	PZ99	DF03	2,19	1,89	2,06	2,09	2,06	0,125	6,062
			F02	PE01	DF03	3	3	2,3	2,3	2,65	0,404	15,251
			F32x	PB99	DF03	3,81	3,3	3	4,04	3,54	0,473	13,380
Hg	(ng/g)	1	F16x	PC01	DB10	25,94	29,53	26,6	31,09	28,29	2,433	8,600
			A55	PC01	DB03	29,252	27,706	28,99	28,748	28,67	0,677	2,362
			A39	PZ98	DA05	27,88	32,95	29,41	32,95	30,80	2,563	8,321
			A36	PD02	DB03	31,9	32,1	29,9	29,6	30,88	1,307	4,234
			A79	PD03	DB10	31,3	31,3	30,7	31,5	31,20	0,346	1,110
			F02	PZ98	DA05	31,7	31,9	31,9	31,6	31,78	0,150	0,472
			A45x	PZ98	DB99	31,9	32	32,2	32,6	32,18	0,310	0,962
			A82	PZ98	DA05	33,2	32,3	33,5	33,3	33,08	0,532	1,607
			A89	PZ98	DA05	32,09	35,19	33,13	34,16	33,64	1,334	3,964
			F03	PZ98	DA05	34,15	34,69	34,26	35,22	34,58	0,486	1,406
			F18x	PD99	DA05	44,5	45,6	44,1	45,6	44,95	0,768	1,709
Hg	(ng/g)	2	F02	PZ98	DA05	59,3	58,2	66,3	61,7	61,38	3,594	5,856
			A36	PD02	DB03	62,8	60,7	63,3	60,8	61,90	1,344	2,171
			A79	PD03	DB10	64,4	66,6	65,2	67,2	65,85	1,279	1,943
			A39	PZ98	DA05	67,97	66,44	65,94	68,98	67,33	1,397	2,075
			A55	PC01	DB03	70,354	69,607	68,605	70,226	69,70	0,798	1,145
			A45x	PZ98	DB99	70,8	68,6	71,8	71	70,55	1,370	1,942

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Hg	(ng/g)	2	A89	PZ98	DA05	74,19	68,96	75,23	67,92	71,58	3,669	5,127
			F16x	PC01	DB10	78,31	66,06	69,75	78,76	73,22	6,322	8,634
			F18x	PD99	DA05	74,4	78,8	74,4	77,9	76,38	2,310	3,024
			F03	PZ98	DA05	80,63	77,77	76,92	78,17	78,37	1,593	2,032
			A82	PZ98	DA05	82,1	79,8	81,3	79,7	80,73	1,173	1,453
Hg	(ng/g)	3	A55	PC01	DB03	24,852	25,25	25,842	25,788	25,43	0,471	1,850
			A36	PD02	DB03	26,9	28	26	23,8	26,18	1,782	6,808
			A79	PD03	DB10	27,1	26,6	26,2	25,7	26,40	0,594	2,252
			F02	PZ98	DA05	26,3	27,2	26,7	26,6	26,70	0,374	1,401
			F16x	PC01	DB10	25,71	27,29	27,96	28,08	27,26	1,090	3,999
			A39	PZ98	DA05	26,42	27,64	28,46	27,44	27,49	0,839	3,051
			A45x	PZ98	DB99	28,4	28,1	28	27,9	28,10	0,216	0,769
			A82	PZ98	DA05	28,1	28,3	29,1	28	28,38	0,499	1,759
			F03	PZ98	DA05	32,17	31,74	29,68	30,22	30,95	1,191	3,849
			F18x	PD99	DA05	32,6	34,2	35,7	31,3	33,45	1,912	5,717
			A89	PZ98	DA05	51,87	47,17	43,57	39,41	45,51	5,297	11,641
Hg	(ng/g)	4	F03	PZ98	DA05	35,22	34,69	34,26	35,5	34,92	0,552	1,582
			A36	PD02	DB03	38,3	37,9	36,9	38,3	37,85	0,661	1,746
			A39	PZ98	DA05	40,11	36,35	37,37	39,4	38,31	1,747	4,560
			F02	PZ98	DA05	38,2	38,4	38,8	39,1	38,63	0,403	1,044
			A79	PD03	DB10	39,4	38,8	38,8	38,8	38,95	0,300	0,770
			A55	PC01	DB03	40,198	40,241	40,61	40,708	40,44	0,257	0,637
			F16x	PC01	DB10	40,65	40,45	41,34	40,14	40,65	0,509	1,251
			A45x	PZ98	DB99	40,6	40,8	40,6	41,7	40,93	0,525	1,283
			A82	PZ98	DA05	48	47,7	46,8	41,3	45,95	3,142	6,837
			A89	PZ98	DA05	49,17	48,11	44,98	47,07	47,33	1,787	3,776
			F18x	PD99	DA05	53,5	53,1	52,4	53	53,00	0,455	0,858
La	(ng/g)	1	A80	PD01	DB10	156	145	165	154	155,00	8,206	5,294
La	(ng/g)	2	A80	PD01	DB10	174	162	118	150	151,00	24,083	15,949

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
La	(ng/g)	3	A80	PD01	DB10	46,4	43,5	49,7	41,3	45,23	3,642	8,053
La	(ng/g)	4	A80	PD01	DB10	73,5	93,9	67,8	79,3	78,63	11,213	14,262
Mo	(ng/g)	1	A49	PD05	DB08	<,3	<,3	<,3	<,3			
			F08	PC01	DB10	58,5	62,8	55,3	53,2	57,45	4,180	7,275
			A55	PD01	DB10	61,9	59,5	58,6	58,9	59,73	1,497	2,507
			F16x	PC01	DB10	63,22	61,91	53,43	62,72	60,32	4,625	7,667
			A36	PD02	DB10	61,7	61,9	61,4	61,8	61,70	0,216	0,350
			F32	PD01	DB10	68	64	60	64	64,00	3,266	5,103
			A80	PD01	DB10	75,7	73,1	80,5	73,6	75,73	3,377	4,459
			A89	PD02	DB10	79,3	75,1	80,7	92,9	82,00	7,646	9,325
			F14x	PC01	DB10	81	120	113	141	113,75	24,865	21,859
Mo	(ng/g)	2	A49	PD05	DB08	<,3	<,3	<,3	<,3			
			A89	PD02	DB10	111,16	110,04	112,99	107,29	110,37	2,386	2,162
			A55	PD01	DB10	131,4	135,3	133,1	134,6	133,60	1,730	1,295
			A36	PD02	DB10	134,9	133,1	136,7	134,9	134,90	1,470	1,089
			F08	PC01	DB10	142,2	136,9	139	144,4	140,63	3,329	2,367
			F16x	PC01	DB10	132,1	137,1	151	150,1	142,58	9,439	6,621
			F32	PD01	DB10	138	147	145	141	142,75	4,031	2,824
			F14x	PC01	DB10	151	168	171	170	165,00	9,416	5,707
			A80	PD01	DB10	439	283	235	312	317,25	87,156	27,472
Mo	(ng/g)	3	A49	PD05	DB08	<,3	<,3	<,3	<,3			
			F32	PD01	DB10	31	33	30	30	31,00	1,414	4,562
			F08	PC01	DB10	31	36,3	32,1	34,2	33,40	2,345	7,022
			A55	PD01	DB10	38,4	35,1	35,8	35,3	36,15	1,529	4,229
			A36	PD02	DB10	35,7	36,2	36,6	37,5	36,50	0,762	2,087
			A89	PD02	DB10	35,75	40,07	39,12	37,8	38,19	1,871	4,901
			F16x	PC01	DB10	37,07	38,12	40,76	38,99	38,74	1,562	4,032
			F14x	PC01	DB10	61	55	50	56	55,50	4,509	8,125
			A80	PD01	DB10	66,7	57,1	74,3	54,7	63,20	9,035	14,297

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Mo	(ng/g)	4	A55	PD01	DB10	<25	<25	<25	<25			
			F32	PD01	DB10	<15	<15	<15	<15			
			A49	PD05	DB08	<,3	<,3	<,3	<,3			
			F08	PC01	DB10	10,7	11,8	9,7	10,7	10,73	0,858	7,998
			A36	PD02	DB10	15,6	14,4	15,4	15,3	15,18	0,532	3,503
			A89	PD02	DB10	15,13	15,26	15,72	14,87	15,25	0,356	2,334
			F16x	PC01	DB10	15,01	15,37	16,35	16,46	15,80	0,718	4,546
			A80	PD01	DB10	39,7	31,1	38	27,1	33,98	5,902	17,372
			F14x	PC01	DB10	40	31	33	34	34,50	3,873	11,226
Na	(µg/g)	1	F03	PC02	DB08	<50	<50	<50	<50			
			A55	PD01	DB08	<25	<25	<25	<25			
			A53	PZ02	DD01	<35	<35	<35	35			
			A60	PD01	DB10	10,725	8,129	7,277	7,465	8,40	1,593	18,968
			A79	PD03	DB10	10,01	10,28	9,851	10,21	10,09	0,195	1,932
			F18x	PD01	DB08	10,2	10,7	10,2	10,4	10,38	0,236	2,278
			F16x	PC01	DB10	10,97	10,841	9,968	11,336	10,78	0,580	5,379
			A65	PD01	DB08	16,2	14,9	16,2	16,5	15,95	0,714	4,477
			F12x	PC01	DB08	26	29	29	<20	28,00	1,732	6,186
			A36	PD02	DB08	16,3	17,1	18,8	15,6	16,95	1,377	8,125
			F15x	PC01	DB08	<20	45	23	28	32,00	11,533	36,039
			A89	PD02	DB06	23,44	25,55	21,41	21,41	22,95	1,978	8,620
			F25	PB06	DB08	27,9	23	25,2	27,5	25,90	2,270	8,765
			A51	PD02	DB08	28,41	30,42	31,97	29,95	30,19	1,466	4,856
			A39	PD02	DB08	30,15	29,95	31,93	28,73	30,19	1,319	4,369
			F05	PD02	DB01	29,7	31,1	35,4	29,3	31,38	2,792	8,899
Na	(µg/g)	2	F03	PC02	DB08	<50	<50	<50	<50			
			A60	PD01	DB10	22,235	24,428	22,619	22,084	22,84	1,081	4,734
			F18x	PD01	DB08	26,1	25,7	26,4	25,7	25,98	0,340	1,310
			F05	PD02	DB01	38,3	35	35,6	35,8	36,18	1,457	4,027

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Na	(µg/g)	2	F15x	PC01	DB08	34	42	37	32	36,25	4,349	11,998
			F25	PB06	DB08	39,3	37,8	36,7	37,5	37,83	1,087	2,875
			F12x	PC01	DB08	41	46	41	26	38,50	8,660	22,494
			A39	PD02	DB08	41,25	40,76	41,48	37,7	40,30	1,758	4,361
			A89	PD02	DB06	42,69	44,52	40,4	36,26	40,97	3,562	8,695
			A36	PD02	DB08	53,3	47,9	44,8	38,3	46,08	6,261	13,589
			A65	PD01	DB08	44,8	47,2	49,9	55,6	49,38	4,644	9,405
			F16x	PC01	DB10	51,087	51,203	55,846	55,149	53,32	2,529	4,744
			A51	PD02	DB08	62,82	64,73	64,69	63,35	63,90	0,963	1,507
			A79	PD03	DB10	85,45	86,26	81,62	81	83,58	2,657	3,179
			A53	PZ02	DD01	126	123	122	115	121,50	4,655	3,831
			A55	PD01	DB08	152,83	150,74	148,17	143,81	148,89	3,885	2,609
Na	(µg/g)	3	F03	PC02	DB08	<50	<50	<50	<50			
			A53	PZ02	DD01	<35	<35	<35	<35			
			A55	PD01	DB08	<25	<25	<25	<25			
			F15x	PC01	DB08	22	<20	25	21	22,67	2,082	9,184
			F18x	PD01	DB08	12,8	13	13,1	13	12,98	0,126	0,970
			A79	PD03	DB10	13,17	13,65	12,65	13,6	13,27	0,465	3,502
			F16x	PC01	DB10	13,557	13,746	14,377	14,102	13,95	0,366	2,623
			A60	PD01	DB10	14,979	13,366	15,296	12,254	13,97	1,424	10,193
			F12x	PC01	DB08	32	30	<20	18	26,67	7,572	28,395
			A89	PD02	DB06	17,32	17,29	15,22	17,34	16,79	1,049	6,244
			A36	PD02	DB08	16,6	19	15,9	20,2	17,93	2,016	11,244
			A65	PD01	DB08	20,3	18,8	16,5	19,3	18,73	1,609	8,593
			F25	PB06	DB08	28,9	26,9	24,9	27	26,93	1,634	6,068
			A39	PD02	DB08	33,28	30,75	31,87	29,29	31,30	1,692	5,406
			F05	PD02	DB01	35,7	28,7	31,7	32	32,03	2,867	8,954
			A51	PD02	DB08	35,03	34,38	34,42	33,93	34,44	0,452	1,312

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Na	(µg/g)	4	A79	PD03	DB10	60,77	60,84	61,1	60,72	60,86	0,169	0,278
			F18x	PD01	DB08	65,4	65,2	65,4	65,4	65,35	0,100	0,153
			A53	PZ02	DD01	71,3	67,7	67,5	64,7	67,80	2,706	3,990
			A89	PD02	DB06	73,92	71,83	71,75	73,68	72,80	1,165	1,600
			F16x	PC01	DB10	71,903	71,056	76,78	74,801	73,64	2,640	3,585
			A60	PD01	DB10	74,414	74,787	76,748	79,067	76,25	2,137	2,802
			A36	PD02	DB08	77,4	79,8	80	80,2	79,35	1,310	1,651
			A55	PD01	DB08	79,614	80,536	80,52	79,896	80,14	0,461	0,575
			A65	PD01	DB08	82,8	80,1	79,3	82	81,05	1,626	2,006
			F12x	PC01	DB08	87	89	82	72	82,50	7,594	9,205
			F15x	PC01	DB08	80	80	79	96	83,75	8,180	9,767
			F05	PD02	DB01	95,9	89	86,2	85,8	89,23	4,672	5,236
			A39	PD02	DB08	90,39	92	100,73	90,08	93,30	5,024	5,385
			A51	PD02	DB08	91,71	90,19	95,55	96,31	93,44	2,958	3,165
			F25	PB06	DB08	97	97,8	95	92,4	95,55	2,408	2,520
			F03	PC02	DB08	109,14	105,94	105,8	110,45	107,83	2,329	2,160
Nb	(ng/g)	1	A80	PD01	DB10	<10	<10	<10	<10			
Nb	(ng/g)	2	A80	PD01	DB10	33,2	30,3	23	31,6	29,53	4,509	15,271
Nb	(ng/g)	3	A80	PD01	DB10	<10	<10	<10	<10			
Nb	(ng/g)	4	A80	PD01	DB10	11,6	12,5	12,9	10,7	11,93	0,981	8,227
Ni	(µg/g)	1	A79	PD03	DB10	1,861	1,887	1,868	1,876	1,87	0,011	0,596
			F15x	PC01	DB09	1,88	1,96	1,91	1,9	1,91	0,034	1,780
			F16x	PC01	DB10	2,046	1,945	1,883	2,019	1,97	0,074	3,739
			A49	PD05	DB08	2,05	2,12	2,03	1,8	2,00	0,139	6,940
			F03	PC02	DB08	2,02	2,02	2,09	2,09	2,06	0,040	1,967
			F19	PD02	DB08	2,12	2,11	2,11	2,14	2,12	0,014	0,667
			A55	PC01	DB10	2,2369	2,1826	2,1913	2,2126	2,21	0,024	1,099
			A61x	PB02	DB08	2,08	2,24	2,36	2,15	2,21	0,121	5,478
			A36	PD02	DB10	2,21	2,21	2,18	2,24	2,21	0,024	1,108

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Ni	(µg/g)	1	F14x	PC01	DB10	2,221	2,226	2,232	2,199	2,22	0,014	0,648
			F05	PD02	DB08	1,97	2,15	2,53	2,25	2,23	0,234	10,518
			F33x	PD01	DB10	2,22	2,24	2,17	2,29	2,23	0,050	2,227
			A51	PD02	DB08	2,22	2,223	2,243	2,251	2,23	0,015	0,677
			F18x	PD01	DB10	2,25	2,17	2,4	2,19	2,25	0,104	4,619
			A45x	PZ99	DB10	2,23	2,31	2,23	2,25	2,26	0,038	1,679
			F08	PC01	DB10	2,3149	2,2074	2,2734	2,2277	2,26	0,048	2,131
			F25	PB06	DB08	2,3	2,27	2,32	2,33	2,31	0,026	1,148
			A80	PD01	DB10	2,59	2,25	2,31	2,11	2,32	0,202	8,707
			A65	PD01	DB08	2,3	2,3	2,3	2,4	2,33	0,050	2,151
			A82	PC01	DB10	2,364	2,354	2,388	2,365	2,37	0,014	0,608
			A89	PD02	DB08	2,67	2,11	2,91	1,93	2,41	0,461	19,173
			F12x	PC01	DB09	2,36	2,44	2,38	2,44	2,41	0,041	1,714
			A39	PD02	DB08	2,446	2,418	2,45	2,567	2,47	0,066	2,674
			A60	PD01	DB10	2,64	2,859	2,661	2,842	2,75	0,116	4,217
Ni	(µg/g)	2	F18x	PD01	DB10	1,68	1,61	1,75	1,88	1,73	0,115	6,658
			F03	PC02	DB08	2,12	2,26	2,22	2,19	2,20	0,059	2,689
			F05	PD02	DB08	2,14	2,22	2,23	2,29	2,22	0,062	2,777
			A79	PD03	DB10	2,228	2,298	2,326	2,356	2,30	0,055	2,377
			F19	PD02	DB08	2,31	2,36	2,26	2,28	2,30	0,043	1,889
			A36	PD02	DB10	2,37	2,3	2,31	2,25	2,31	0,049	2,134
			F25	PB06	DB08	2,24	2,29	2,37	2,39	2,32	0,070	3,011
			F33x	PD01	DB10	2,51	2,18	2,42	2,28	2,35	0,146	6,235
			A80	PD01	DB10	2,77	2,37	1,97	2,51	2,41	0,334	13,888
			A51	PD02	DB08	2,416	2,366	2,526	2,329	2,41	0,086	3,553
			A49	PD05	DB08	2,39	2,36	2,49	2,41	2,41	0,056	2,305
			A45x	PZ99	DB10	2,49	2,49	2,45	2,43	2,47	0,030	1,217
			F16x	PC01	DB10	2,612	2,23	2,451	2,877	2,54	0,272	10,717
			F08	PC01	DB10	2,5936	2,3754	2,384	2,8503	2,55	0,224	8,770

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Ni	(µg/g)	2	A39	PD02	DB08	2,565	2,53	2,587	2,548	2,56	0,024	0,951
			A61x	PB02	DB08	2,51	2,59	2,61	2,62	2,58	0,050	1,933
			A55	PC01	DB10	2,6086	2,6725	2,5212	2,6074	2,60	0,062	2,386
			F12x	PC01	DB09	2,66	2,7	2,6	2,64	2,65	0,042	1,571
			F15x	PC01	DB09	2,68	2,64	2,68	2,82	2,71	0,079	2,919
			A82	PC01	DB10	2,412	2,772	2,834	2,835	2,71	0,203	7,481
			A89	PD02	DB08	2,86	2,89	2,83	2,74	2,83	0,065	2,290
			F14x	PC01	DB10	2,7	3,021	2,922	3,069	2,93	0,164	5,596
			A65	PD01	DB08	2,9	2,9	3,3	2,9	3,00	0,200	6,667
			A60	PD01	DB10	4,318	3,537	3,958	3,693	3,88	0,342	8,817
Ni	(µg/g)	3	A79	PD03	DB10	1,762	1,79	1,73	1,724	1,75	0,031	1,748
			A49	PD05	DB08	1,68	1,71	2,03	2,04	1,87	0,197	10,548
			F16x	PC01	DB10	1,78	1,876	1,937	1,963	1,89	0,081	4,304
			F15x	PC01	DB09	1,84	2,01	1,82	2,19	1,97	0,173	8,780
			F03	PC02	DB08	2	1,96	1,99	1,96	1,98	0,021	1,043
			A61x	PB02	DB08	1,99	2	1,94	2,01	1,99	0,031	1,566
			F05	PD02	DB08	2,13	2,08	1,7	2,03	1,99	0,194	9,790
			F33x	PD01	DB10	2,17	2,07	1,9	1,86	2,00	0,145	7,269
			F19	PD02	DB08	2,01	1,99	1,99	2,06	2,01	0,033	1,642
			A55	PC01	DB10	2,0383	2,0471	2,0383	2,0792	2,05	0,019	0,948
			F18x	PD01	DB10	2,03	2,1	1,99	2,15	2,07	0,071	3,451
			A36	PD02	DB10	2,07	2,1	2,04	2,08	2,07	0,025	1,206
			A80	PD01	DB10	2,25	1,99	2,23	1,83	2,08	0,202	9,715
			F14x	PC01	DB10	2,101	2,148	2,112	2,15	2,13	0,025	1,173
			A51	PD02	DB08	2,133	2,183	2,144	2,169	2,16	0,023	1,059
			F25	PB06	DB08	2,2	2,19	2,19	2,1	2,17	0,047	2,161
			F12x	PC01	DB09	2,14	2,13	2,2	2,28	2,19	0,069	3,153
			A45x	PZ99	DB10	2,16	2,22	2,23	2,15	2,19	0,041	1,864
			F08	PC01	DB10	2,0395	2,0449	2,4412	2,2746	2,20	0,195	8,843

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Ni	(µg/g)	3	A82	PC01	DB10	2,22	2,215	2,242	2,265	2,24	0,023	1,024
			A39	PD02	DB08	2,29	2,23	2,31	2,264	2,27	0,035	1,521
			A65	PD01	DB08	2,3	2,2	2,3	2,3	2,28	0,050	2,198
			A60	PD01	DB10	2,376	2,328	2,345	2,375	2,36	0,024	1,000
			A89	PD02	DB08	5,6	4,98	4,56	4,56	4,93	0,492	9,982
Ni	(µg/g)	4	A65	PD01	DB08	<1,1	<1,1	<1,1	<1,1			
			F03	PC02	DB08	<1	<1	<1	<1			
			A49	PD05	DB08	0,529	0,508	0,534	0,496	0,52	0,018	3,452
			A61x	PB02	DB08	0,63	0,7	0,61	0,72	0,67	0,053	8,004
			A79	PD03	DB10	0,703	0,7175	0,7062	0,6852	0,70	0,013	1,904
			F33x	PD01	DB10	0,719	0,687	0,699	0,711	0,70	0,014	1,989
			F05	PD02	DB08	0,786	0,816	0,676	0,762	0,76	0,060	7,921
			F15x	PC01	DB09	0,81	0,81	0,8	0,7	0,78	0,054	6,864
			F16x	PC01	DB10	0,7889	0,7417	0,8354	0,7689	0,78	0,040	5,041
			A80	PD01	DB10	0,847	0,745	0,867	0,75	0,80	0,064	7,950
			A55	PC01	DB10	0,8094	0,8073	0,8132	0,8215	0,81	0,006	0,770
			F19	PD02	DB08	0,824	0,812	0,83	0,815	0,82	0,008	1,007
			A36	PD02	DB10	0,826	0,821	0,838	0,802	0,82	0,015	1,822
			A51	PD02	DB08	0,752	0,799	0,881	0,856	0,82	0,058	7,047
			A82	PC01	DB10	0,814	0,843	0,872	0,819	0,84	0,027	3,172
			F14x	PC01	DB10	0,833	0,817	0,882	0,858	0,85	0,029	3,366
			F25	PB06	DB08	0,85	0,86	0,87	0,83	0,85	0,017	2,003
			A45x	PZ99	DB10	0,895	0,833	0,865	0,861	0,86	0,025	2,938
			A39	PD02	DB08	0,8895	0,8964	0,864	0,9057	0,89	0,018	2,011
			F18x	PD01	DB10	0,875	0,931	0,954	0,932	0,92	0,034	3,653
			F12x	PC01	DB09	0,92	0,97	0,99	0,94	0,96	0,031	3,256
			A89	PD02	DB08	0,958	0,96	0,971	0,977	0,97	0,009	0,935
			F08	PC01	DB10	1,0011	0,9936	0,9989	1,0236	1,00	0,013	1,319
			A60	PD01	DB10	1,231	1,237	1,204	1,276	1,24	0,030	2,401

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Rb	(µg/g)	1	F16x	PC01	DB10	4,247	4,197	3,677	4,378	4,12	0,308	7,470
			A89	PD02	DB10	4,17	4,21	4,14	4,26	4,20	0,052	1,239
			A80	PD01	DB10	4,29	4,28	4,46	4,15	4,30	0,127	2,960
Rb	(µg/g)	2	A80	PD01	DB10	1,95	1,73	1,41	1,73	1,71	0,222	13,040
			F16x	PC01	DB10	1,823	2,006	2,002	1,872	1,93	0,093	4,806
			A89	PD02	DB10	1,98	2,01	2,11	1,98	2,02	0,062	3,052
Rb	(µg/g)	3	A80	PD01	DB10	17	15,4	17,5	14,5	16,10	1,393	8,651
			A89	PD02	DB10	16,27	16,68	16,57	16,28	16,45	0,207	1,259
			F16x	PC01	DB10	17,547	18,395	18,221	18,489	18,16	0,425	2,342
Rb	(µg/g)	4	A80	PD01	DB10	22,3	20,9	22,2	21,1	21,63	0,727	3,364
			A89	PD02	DB10	21,7	22,24	21,75	22,15	21,96	0,275	1,250
			F16x	PC01	DB10	22,76	23,439	23,807	23,653	23,41	0,462	1,972
Sb	(ng/g)	1	F16x	PC01	DB10	19,31	19,47	16,87	19,28	18,73	1,244	6,643
			A89	PD02	DB10	21,5	24,6	24,1	21,5	22,93	1,658	7,233
			A79	PD03	DB10	24,9	23,7	24,8	24,4	24,45	0,545	2,228
			A80	PD01	DB10	37,3	32,9	39	39,9	37,28	3,110	8,342
Sb	(ng/g)	2	A89	PD02	DB10	122,9	122,4	135,2	124,5	126,25	6,034	4,779
			A79	PD03	DB10	130	135,5	122,5	129,3	129,33	5,328	4,120
			F16x	PC01	DB10	134,7	132,9	149	122,1	134,68	11,053	8,207
			A80	PD01	DB10	158	166	108	127	139,75	27,035	19,346
Sb	(ng/g)	3	F16x	PC01	DB10	22,84	22,77	23,2	23,82	23,16	0,480	2,073
			A89	PD02	DB10	26,4	27,3	27,8	25,5	26,75	1,015	3,794
			A79	PD03	DB10	32,8	32	32,7	31,3	32,20	0,698	2,167
			A80	PD01	DB10	44,8	47,6	42,7	40,9	44,00	2,881	6,548
Sb	(ng/g)	4	A89	PD02	DB10	<10	<10	<10	<10			
			F16x	PC01	DB10	5,915	6,649	6,441	6,669	6,42	0,351	5,471
			A79	PD03	DB10	9,8	9,35	9,35	9,25	9,44	0,246	2,609
			A80	PD01	DB10	20,8	23,3	23,8	47,6	28,88	12,552	43,471

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Sc	(ng/g)	1	A89	PD02	DB10	18,5	20	19,6	17,7	18,95	1,047	5,526
Sc	(ng/g)	2	A89	PD02	DB10	87,58	79,41	82,7	76,6	81,57	4,717	5,783
Sc	(ng/g)	3	A89	PD02	DB10	9,98	10,75	9,77	9,93	10,11	0,438	4,329
Sc	(ng/g)	4	A89	PD02	DB10	16,1	15,7	16,3	15,3	15,85	0,443	2,798
Se	(ng/g)	1	F16x	PC01	DB10	<30	<30	<30	<30			
			A55	PC01	DB04	23,5	21,8	23,9	21,7	22,73	1,138	5,009
			F14x	PC01	DB10	28	27	24	21	25,00	3,162	12,649
			A82	PC01	DB10	29,505	28,792	28,208	26,06	28,14	1,485	5,278
			A36	PD02	DB10	29,4	28,9	28,5	29,3	29,03	0,411	1,417
			F08	PC01	DB10	35,1	31,9	33	36,2	34,05	1,954	5,738
Se	(ng/g)	2	A55	PC01	DB04	68,2	64,6	63,4	66,6	65,70	2,126	3,236
			F08	PC01	DB10	70,6	71,7	68,4	74,9	71,40	2,707	3,791
			F14x	PC01	DB10	69	59	81	83	73,00	11,195	15,336
			A36	PD02	DB10	76,1	76,7	75,9	77,1	76,45	0,551	0,720
			A82	PC01	DB10	70,16	78,993	84,496	84,414	79,52	6,748	8,486
			F16x	PC01	DB10	71	81	104	93	87,25	14,338	16,433
Se	(ng/g)	3	F16x	PC01	DB10	<30	<30	<30	<30			
			A55	PC01	DB04	<20	<20	<20	<20			
			F14x	PC01	DB10	12	17	10	15	13,50	3,109	23,031
			A36	PD02	DB10	18,3	17,9	17,6	17,3	17,78	0,427	2,403
			F08	PC01	DB10	21,4	21,4	21,4	22,4	21,65	0,500	2,309
			A82	PC01	DB10	26,481	24,185	24,323	24,673	24,92	1,064	4,269
Se	(ng/g)	4	F16x	PC01	DB10	<30	<30	<30	<30			
			A55	PC01	DB04	<20	<20	<20	<20			
			A36	PD02	DB10	18,5	19,2	18,9	18,8	18,85	0,289	1,531
			F14x	PC01	DB10	24	21	26	21	23,00	2,449	10,650
			A82	PC01	DB10	26,565	25,32	24,674	26,147	25,68	0,845	3,292
			F08	PC01	DB10	26,8	27,9	26,8	27,9	27,35	0,635	2,322

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Si	(µg/g)	1	A53	PZ02	DD01	511	512	518	511	513,00	3,367	0,656
Si	(µg/g)	2	A53	PZ02	DD01	131	130	127	125	128,25	2,754	2,147
Si	(µg/g)	3	A53	PZ02	DD01	486	490	483	484	485,75	3,096	0,637
Si	(µg/g)	4	A53	PZ02	DD01	521	520	527	523	522,75	3,096	0,592
Sn	(µg/g)	1	F16x	PC01	DB10	0,0492	0,0528	0,0505	0,0517	0,05	0,002	3,037
			A80	PD01	DB10	0,077	0,0689	0,0771	0,0761	0,07	0,004	5,272
Sn	(µg/g)	2	F16x	PC01	DB10	0,0591	0,0499	0,0578	0,052	0,05	0,004	8,128
			A80	PD01	DB10	0,0774	0,0545	0,0428	0,0544	0,06	0,014	25,312
Sn	(µg/g)	3	F16x	PC01	DB10	0,05	0,0491	0,0468	0,0504	0,05	0,002	3,283
			A80	PD01	DB10	0,125	0,0892	0,088	0,0788	0,10	0,020	21,386
Sn	(µg/g)	4	F16x	PC01	DB10	0,0259	0,0312	0,0286	0,0316	0,03	0,003	9,011
			A80	PD01	DB10	0,0364	0,0353	0,0386	0,0317	0,04	0,003	8,115
Sr	(µg/g)	1	A53	PZ02	DD01	50,2	50,2	50,1	50,2	50,18	0,050	0,100
			A80	PD01	DB10	54,8	55,3	57	53,1	55,05	1,605	2,916
			A89	PD02	DB10	55,47	56,08	54,85	56,83	55,81	0,847	1,517
			A65	PD01	DB08	56,4	57	55,2	56,9	56,38	0,826	1,465
			A39	PD02	DB08	56,99	56,74	56,78	57,95	57,12	0,567	0,993
			F16x	PC01	DB10	58,694	58,886	50,782	60,131	57,12	4,275	7,484
Sr	(µg/g)	2	A80	PD01	DB10	4,25	3,82	3,32	3,88	3,82	0,382	10,015
			F16x	PC01	DB10	3,688	3,806	4,097	3,971	3,89	0,180	4,628
			A39	PD02	DB08	4,062	4,311	4	4,161	4,13	0,136	3,282
			A65	PD01	DB08	4,3	4,3	4,5	4,2	4,33	0,126	2,909
			A89	PD02	DB10	4,36	4,42	4,51	4,29	4,40	0,093	2,122
			A53	PZ02	DD01	4,72	4,57	4,62	4,51	4,61	0,089	1,930
Sr	(µg/g)	3	A53	PZ02	DD01	13,9	14,1	14,1	13,9	14,00	0,115	0,825
			A39	PD02	DB08	15,07	14,56	14,76	14,88	14,82	0,214	1,444
			A80	PD01	DB10	15,8	14,5	16,4	13,6	15,08	1,263	8,380
			A89	PD02	DB10	15,11	15,9	15,53	15,71	15,56	0,337	2,168
			A65	PD01	DB08	16	15,7	15,6	15,7	15,75	0,173	1,100

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Sr	(µg/g)	3	F16x	PC01	DB10	16,329	17,084	16,945	17,555	16,98	0,505	2,977
Sr	(µg/g)	4	A53	PZ02	DD01	12,9	12,9	12,8	12,9	12,88	0,050	0,388
			A39	PD02	DB08	13,38	13,72	13,59	13,58	13,57	0,140	1,034
			A80	PD01	DB10	14,4	13,4	14,3	13,6	13,93	0,499	3,585
			A89	PD02	DB10	14,22	14,21	13,93	14,04	14,10	0,140	0,995
			A65	PD01	DB08	14,1	14,1	14,2	14,2	14,15	0,058	0,408
			F16x	PC01	DB10	14,927	14,81	15,265	15,342	15,09	0,258	1,707
Ti	(µg/g)	1	A89	PD02	DB10	2,099	2,01	1,91	1,93	1,99	0,086	4,334
			A80	PD01	DB10	2,73	2,36	2,92	2,43	2,61	0,262	10,025
			A65	PD01	DB08	3,5	3,5	3,4	3,9	3,58	0,222	6,202
			A39	PD02	DB08	6,656	6,08	6,763	6,896	6,60	0,359	5,448
Ti	(µg/g)	2	A80	PD01	DB10	16,1	14,4	10,9	14,9	14,08	2,234	15,870
			A89	PD02	DB10	17,72	17,72	16,32	16,45	17,05	0,773	4,531
			A65	PD01	DB08	19,3	21,3	22,9	20,2	20,93	1,550	7,407
			A39	PD02	DB08	23,26	22,46	22,07	23,25	22,76	0,593	2,607
Ti	(µg/g)	3	A89	PD02	DB10	0,961	0,821	0,881	0,795	0,86	0,074	8,528
			A80	PD01	DB10	1,51	1,25	1,34	1,15	1,31	0,153	11,645
			A65	PD01	DB08	1,7	1,6	1,4	1,6	1,58	0,126	7,989
			A39	PD02	DB08	3,188	3,618	3,226	3,728	3,44	0,273	7,942
Ti	(µg/g)	4	A89	PD02	DB10	2,69	2,52	2,31	2,16	2,42	0,233	9,620
			A80	PD01	DB10	2,6	2,55	2,6	2,45	2,55	0,071	2,773
			A65	PD01	DB08	3,7	3,7	3,9	3,8	3,78	0,096	2,536
			A39	PD02	DB08	7,397	6,572	7,812	7,34	7,28	0,517	7,100
Tl	(ng/g)	1	A79	PD03	DB10	<25	<25	<25	<25			
			A80	PD01	DB10	<10	<10	<10	<10			
			A89	PD02	DB10	<10	<10	<10	<10			
			F14x	PC01	DB10	1	1	2	1	1,25	0,500	40,000
			F16x	PC01	DB10	2,11	2,04	1,832	2,141	2,03	0,139	6,848
			F08	PC01	DB10	2,1	2,1	2,1	1,9	2,05	0,100	4,878

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
Tl	(ng/g)	1	A36	PD02	DB10	2,28	2,28	2,38	2,38	2,33	0,058	2,478
			A82	PC01	DB10	37,805	36,008	35,996	36,799	36,65	0,856	2,334
Tl	(ng/g)	2	A89	PD02	DB10	<10	<10	<10	<10			
			A80	PD01	DB10	41,7	38	31,6	38,9	37,55	4,268	11,366
			F08	PC01	DB10	38,5	38,5	37,4	39,6	38,50	0,898	2,333
			A79	PD03	DB10	39,9	39,8	39,2	40,9	39,95	0,705	1,764
			F16x	PC01	DB10	43,21	39,41	41,71	40,99	41,33	1,579	3,821
			A36	PD02	DB10	41,8	42,2	42,1	42,1	42,05	0,173	0,412
			F14x	PC01	DB10	45	46	44	46	45,25	0,957	2,116
			A82	PC01	DB10	69,466	73,755	75,925	77,007	74,04	3,335	4,504
Tl	(ng/g)	3	A89	PD02	DB10	63,3	64,4	63,8	62,3	63,45	0,889	1,401
			A79	PD03	DB10	74,1	72,3	72,6	71,8	72,70	0,990	1,362
			F16x	PC01	DB10	74,1	75,42	77,01	78,84	76,34	2,046	2,681
			A80	PD01	DB10	82,6	76,6	84,1	72,1	78,85	5,545	7,033
			A36	PD02	DB10	81,3	80,8	82,1	79,6	80,95	1,047	1,294
			F08	PC01	DB10	82,3	81,2	84,4	81,2	82,28	1,509	1,834
			F14x	PC01	DB10	85	83	83	79	82,50	2,517	3,050
			A82	PC01	DB10	109,17	109,121	111,255	111,051	110,15	1,162	1,055
Tl	(ng/g)	4	A89	PD02	DB10	38,8	36,5	37,8	37,8	37,73	0,943	2,500
			A79	PD03	DB10	44,6	43,6	43,4	42,9	43,63	0,714	1,636
			F16x	PC01	DB10	44,92	44,66	45,45	46,32	45,34	0,733	1,616
			F08	PC01	DB10	49,4	46,1	48,3	48,3	48,03	1,384	2,882
			A36	PD02	DB10	48,2	48,1	48,5	48,1	48,23	0,189	0,393
			A80	PD01	DB10	50,8	47,2	49,6	46,8	48,60	1,918	3,947
			F14x	PC01	DB10	49	48	47	51	48,75	1,708	3,503
			A82	PC01	DB10	78,986	78,804	79,471	77,817	78,77	0,695	0,882
V	(µg/g)	1	A65	PD01	DB08	<,2	<,2	<,2	<,2			
			A79	PD03	DB10	0,0945	0,0881	0,0919	0,0955	0,09	0,003	3,570
			A39	PD02	DB08	0,1122	0,1119	0,1149	0,1232	0,12	0,005	4,565

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
V	(µg/g)	1	F16x	PC01	DB10	0,138	0,1302	0,1165	0,1409	0,13	0,011	8,305
			F08	PC01	DB10	0,1309	0,1415	0,1383	0,1372	0,14	0,004	3,243
			A80	PD01	DB10	0,143	0,129	0,151	0,137	0,14	0,009	6,650
			F14x	PC01	DB10	0,147	0,145	0,145	0,147	0,15	0,001	0,791
			A89	PD02	DB10	0,149	0,156	0,145	0,152	0,15	0,005	3,093
			A82	PC01	DB10	0,166	0,163	0,166	0,165	0,17	0,001	0,857
V	(µg/g)	2	A80	PD01	DB10	1	0,889	0,691	0,9	0,87	0,129	14,869
			A79	PD03	DB10	0,9495	0,971	0,969	0,9565	0,96	0,010	1,067
			F08	PC01	DB10	0,9807	1,0289	0,9743	1,046	1,01	0,035	3,514
			A39	PD02	DB08	1,0097	1,0335	0,9792	1,1076	1,03	0,055	5,305
			F16x	PC01	DB10	0,999	1,001	1,118	1,098	1,05	0,063	5,967
			A89	PD02	DB10	1,132	1,119	1,168	1,088	1,13	0,033	2,939
			A82	PC01	DB10	1,005	1,242	1,252	1,282	1,20	0,128	10,706
			F14x	PC01	DB10	1,182	1,305	1,301	1,261	1,26	0,057	4,521
			A65	PD01	DB08	1,2	1,3	1,4	1,2	1,28	0,096	7,509
V	(µg/g)	3	A65	PD01	DB08	<,2	<,2	<,2	<,2			
			A79	PD03	DB10	<,05	<,05	<,05	<,05			
			A39	PD02	DB08	0,0408	0,0381	0,0405	0,0414	0,04	0,001	3,605
			F16x	PC01	DB10	0,0702	0,0705	0,0745	0,0756	0,07	0,003	3,787
			F08	PC01	DB10	0,0737	0,0812	0,0716	0,0759	0,08	0,004	5,457
			F14x	PC01	DB10	0,078	0,078	0,076	0,08	0,08	0,002	2,094
			A80	PD01	DB10	0,0814	0,077	0,0832	0,0713	0,08	0,005	6,776
			A89	PD02	DB10	0,0825	0,0836	0,081	0,0791	0,08	0,002	2,391
			A82	PC01	DB10	0,081	0,081	0,083	0,085	0,08	0,002	2,321
V	(µg/g)	4	A65	PD01	DB08	<,2	<,2	<,2	<,2			
			A79	PD03	DB10	<,05	<,05	<,05	<,05			
			A39	PD02	DB08	0,1068	0,1029	0,1095	0,102	0,11	0,003	3,314
			F16x	PC01	DB10	0,1189	0,1197	0,1181	0,1288	0,12	0,005	4,114
			F08	PC01	DB10	0,1245	0,1223	0,1277	0,1266	0,13	0,002	1,905

18th Needle/Leaf Interlaboratory Comparison Test 2015/2016

Additional parameters

Element	Unit	Sample no.	Lab no.	Method code		Replicates				Lab Mean	Si	Vi
				P	D	1	2	3	4			
V	(µg/g)	4	A80	PD01	DB10	0,133	0,124	0,13	0,127	0,13	0,004	3,014
			A89	PD02	DB10	0,1365	0,1302	0,1307	0,1276	0,13	0,004	2,861
			F14x	PC01	DB10	0,133	0,136	0,136	0,136	0,14	0,002	1,109
			A82	PC01	DB10	0,153	0,16	0,154	0,156	0,16	0,003	1,988
Zr	(µg/g)	1	A89	PD02	DB10	<,02	<,02	<,02	<,02			
Zr	(µg/g)	2	A89	PD02	DB10	<,02	<,02	<,02	<,02			
Zr	(µg/g)	3	A89	PD02	DB10	<,02	<,02	<,02	<,02			
Zr	(µg/g)	4	A89	PD02	DB10	<,02	<,02	<,02	<,02			