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CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION
INTERNATIONAL CO-OPERATIVE PROGRAMME ON ASSESSMENT AND MONITORING OF AIR POLLUTION EFFECTS ON FORESTS

United Nations
Economic Commission
for Europe

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Federal Research and Training Centre for Forests, Natural Hazards and Landscape
Forest Foliar Co-ordinating Centre
Seckendorff-Gudent-Weg 8
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Alfred Fürst

Federal Research and Training Centre for Forests, Natural Hazards and Landscape
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Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape
Forest Foliar Co-ordinating Centre
Seckendorff-Gudent Weg 8
A-1131 Wien

Phone: +431-87838-1114
Fax: +431-87838-1250

URL: http://www.ffcc.at
e-Mail: alfred.fuerst@bfw.gv.at

Cover photos by Alfred Fürst

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1 INTRODUCTION

The concern about an increased observation of unknown damage to forests in Europe led in the 1980's to the establishment of the following two European programmes for the protection of forests against atmospheric pollution and other stress factors:
The International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP-Forests) and the European Union Scheme on the Protection of Forests against Atmospheric Pollution. In the framework of these two programmes a large-scale 16x16km transnational monitoring network (level I) was established and on this grid annual crown condition surveys have been carried out since 1986/87. In addition to these observations surveys of the forest soil condition and of the chemical content of needles and leaves were carried out in 1995 (Stefan et al. 1997).
For the intensive monitoring programme (Level II) more than 860 permanent observation plots have been established in Europe with the aim of investigating key factors and processes at the ecosystem scale. The foliar survey at Level II is mandatory and the analysis must be carried out at least every two years (1995, 1997, 1999, 2001, 2003).
A high quality and comparable laboratory standard in all countries is indispensable for a European-wide survey of the state of forests. Important steps on this way have been the publication of the "Manual on methods and criteria for harmonised sampling, assessment, monitoring and analysis of the effects of air pollution on forests" (UN-ECE, Hamburg and Prague 1994) and the performance of the first European Foliar- Interlaboratory Comparison Test on two certified standards (BCR 100-*beech leaves* and BCR 101 - *spruce needles*) by 24 laboratories from 21 countries, organised by France in 1993.
The intensive discussion of the forest foliar expert panel in As/Norway (1994) ended with the recommendation of a second test with 4 unknown samples (two spruces, one pine, one oak) during the running level-II monitoring programme. This was organised by Germany in 1995/96 and subsequently discussed by the expert panel in Vienna/Austria in 1997. The expert panel decided to call for a complete repetition and authorised the Landesumweltamt North-Rhine-Westfalia (LUA) to arrange interlaboratory comparison tests on foliage every two years. The 3rd test (Bartels 1998) with 5 unknown samples and its consequences for the analytical quality management were intensively discussed in Bonn in 1999 and ended with a revision of Part IV "Sampling and analysis of needles and leaves" of the above mentioned manual (Stefan et al. 2000).
52 Laboratories from 29 European countries took part in the 4th Needle/Leaf Interlaboratory Comparison Test 1999/2000. In comparison with the 3rd test, the results show a distinct improvement of analysis quality of European laboratories working on the issue of forestry analysis (Bartels 2000).
The 5th Interlaboratory Comparison Test was also organized by the LUA (Bartels 2002). In general, the results show good analytical quality in the participating laboratories, but it was very surprising that some laboratories have problems with carbon in foliar samples. The results were discussed by the Expert Panel in Prague/Czech Republic in April 2003. The Panel discussed the difficulties that some laboratories encounter in using new laboratory equipment and the lack of experienced technical staff. Good analytical quality can only be obtained by daily practice and with good quality control. This quality practice must also become a tradition for each laboratory and for each member of the staff.
Because of the good results, the Panel has established smaller tolerable limits of ± 15% for zinc and manganese and of ± 20% for copper.
Following the the retirement of Mr. Bartels from the Panel, the Forest Foliar Coordinating Centre (FFCC) organised the 6th Interlaboratory Comparison Test. FFCC conceived a web-based interface to an Oracle database to which data input and validation could be made via internet by the participating laboratories. The results of this Interlaboratory

Comparison Test were evaluated according to DIN 38402/42. The results of the 6th Interlaboratory Comparison Test show generally a good analytical quality in foliar analyses. Only a few of the laboratories had to adjust to the results from their ringtest and others had to change their methods (e.g. dry ashing). Also, a well trained staff is the basis for good results and most of the labs are now using quality control charts.
To improve the quality of foliar analysis, the Expert Panel and the FFCC decided to carry out this ringtest annually. Ringtests should not only be a check of the level II data quality, but they should also support the laboratories to get better results before they send the next level II results to the Programme Coordinating Centre (PCC). That was the reason why the 7th Interlaboratory Comparison Test was started in 2004.
Till now, there were no direct connections between the foliage results of the level II survey and the results of the annual interlaboratory tests. To link this quality information directly to the level II datasets, changes where made in the level II submission forms (*.fom and *.foo). At the Task Force Meeting 2005 and at the 9th Expert Panel Meeting 2005 (Newtownmountkennedy / Ireland) these changes were accepted. Also the coded results of the 8th Interlaboratory Comparison Test will be sent to the PCC and the Joint Research Centre (Ispra). With this information it is possible to link quality information directly with level II monitoring results.
The 9th Interlaboratory Comparison Test was the last one financed within the Forest Focus programme. To avoid the same situation like in the 6th Test (no co financing from EC), other sources for financing must be found for this Interlaboratory test programme in future. A great majority of the participating laboratories agreed to pay a participation fee in future to continue this annual test programme, if there are no other sources for financing.
Lower tolerable limits for the mandatory parameters S to ± 15% and for P, Ca, Mg and K to ± 10% were fixed at the Expert Panel Meeting in Madrid in April 2007, because of the improvement of the data quality in most of the laboratories. The 10th Interlaboratory Test was evaluated with these smaller limits.
The QA/QC-topic is getting more important in ICP-FORESTS. The QA/QC laboratory topics in the Expert panel deposition were discussed in a separate QA/QC group for laboratories located under EP Deposition. For soil and foliage were the FSCC and the FFCC responsible. In February 2007 a first combined meeting with Experts of this QA/QC Group, FSCC and FFCC was held to share the information about the QA/QC topic for these different matrices and to harmonize the actions in QA/QC.
A follow up meeting in Eger/Hungarian was held in September 2007 and it was decided by this working group to develop a harmonized QA/QC working paper for laboratories. This paper will be available in 2008. Also a meeting with the heads of the laboratories is planned to discuss QA/QC problems, ringtest results, to share information between all participants and to continue a laboratory helping programme.
After ending of Forest Focus in spring 2007 a new co-financing possibility for the European future monitoring in LIFE+ was found. The project proposal for this FutMon-Project was finished end of 2007. If this proposal is accepted by the European Commission the QA/QC activities are financed for all countries participating in this FutMon-Project. This project should start with beginning of 2009. All other countries can participate in this ringtest programme in future too, but they have to pay a participation fee.

2 TASK, MATERIAL, PARTICIPANTS AND EVALUATION

2.1 Task

The Forest Foliar Coordinating Centre established the following timetable:

- Informing the participating labs (April 2007)
- Registration of 54 participants via internet (2th July 2007)
- Submission of the ring test samples (End of July 2007)
- Input of the results from the labs (October-December 2007)
- Deadline of data input (31th December 2007)
- Evaluation according to DIN 38402/42 (January/February 2008)
- Final Report (February 2008)

The mandatory parameters S, N, P, K, Ca, Mg must be analysed, optional parameters Zn, Mn, Fe, Cu, Pb, Cd, B and C can be analysed and some additional elements are possible. The units and all possible elements are shown in figure 1.

Figure 1: Elements and units

1 H																	2 He
3 Li µg/g	4 Be											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	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	32 Ge	33 As µg/g	34 Se µg/g	35 Br µg/g	36 Kr
37 Rb µg/g	38 Sr µg/g	39 Y µg/g	40 Zr µg/g	41 Nb	42 Mo µg/g	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd ng/g	49 In	50 Sn µg/g	51 Sb	52 Te	53 I	54 Xe
55 Cs µg/g	56 Ba µg/g	71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg ng/g	81 Tl	82 Pb µg/g	83 Bi	84 Po	85 At	86 Rn
Mandatory		Optional		Additional		Not possible											

For each element four replicates per sample are necessary within this Interlaboratory Test. All samples should be dried at 80°C before analysis (moisture content approximately 5%) and results must be calculated on dry weight (105°C).

For a deeper evaluation - all participant laboratories had to fill a questionnaire with purpose to obtain information about the status of their quality control systems and they were asked if they have analysed level II foliar samples in 2007.

2.2 Material

At the end of July 2007 the Austrian Federal Research Centre for Forests, Natural Hazards and Landscape (BFW) sent four dried and powdered plant samples to 54 European laboratories in 29 countries.

The samples consisted of:

1. Spruce needles (Austria)
2. Spruce needles (Austria)
3. Ash leaves (Austria)
4. Ash leaves (Belgium) – same sample like in the 7th Test

All materials were dried, ground and homogenised. Before the samples were sent they were once more homogenized in the BFW-laboratory and were filled in PE-bags. Homogeneity was tested for each of these four samples by analysing the nitrogen and carbon content in eight randomly selected sub samples. No variation was found between the results of these eight samples, and they were therefore considered to be homogeneous.

Special thank to Christoph Habsburg-Lothringen (FV Schütte), Walter Wuggenig, Karl Heinz Piglmann, Josef Wampl (FV Stift Lambach) and Johann Reisenberger and their employees for support and for sampling of the foliage samples for this test.

2.3 Participants

Table 1 shows the number of countries and laboratories taking part in the ten interlaboratory comparison tests.

Table 1: Number of countries and laboratories taking part in the ten interlaboratory comparison tests

Interlaboratory Comparison Test	Number of countries	Number of laboratories
1st	21	24
2nd	25	39
3rd	29	51
4th	29	52
5th	29	53
6th	26	46
7th	23	43
8th	30	52
9th	28	53
10th	29	54

With a few exceptions, all laboratories analysed in the 10th 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 sent (grey); level II samples were analyzed this year marked with “X”

Laborcode	N	S	P	Ca	Mg	K	Zn	Mn	Fe	Cu	Pb	B	Cd	C
01	X	X	X			X								X
02														
03	X	X	X	X	X	X	X	X	X					X
04	X	X	X	X	X	X	X	X		X				X
04a														
05														
06														
07	X	X	X	X	X	X	X	X	X	X		X		X
08														
09														
11														
12	X	X	X	X	X	X	X							X
13	X	X	X	X	X	X								X
15														
17	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	X		X	X	X	X	X	X	X	X				
19	X	X		X	X	X								X
20	X	X	X	X	X	X	X	X	X					X
23	X	X	X	X	X	X	X	X	X	X				X
25														
26														
28	X	X	X	X	X									
29	X	X	X	X	X	X	X	X	X	X	X	X	X	X
30														
32														
33a														
36	X	X		X	X	X	X	X	X	X	X	X	X	X
37														
37a														
38	X	X	X	X		X	X	X	X	X	X	X	X	X
38a														
39	X	X	X	X	X	X	X	X	X	X	X	X	X	X
42														
43	X	X	X	X	X	X	X	X	X	X				X
44	X	X	X	X	X	X	X	X	X	X	X		X	X
46														
47	X	X	X	X	X	X	X	X	X	X	X		X	X
48	X	X	X	X	X	X	X	X	X	X	X	X	X	X
49														
50	X	X	X	X	X	X	X	X	X	X	X	X	X	X
52														
56														
60														
61	X	X	X	X	X	X		X	X					X
64														
66														
68														

Laborcode	N	S	P	Ca	Mg	K	Zn	Mn	Fe	Cu	Pb	B	Cd	C
72														
73														
74	X	X	X	X	X	X	X	X	X	X	X		X	
76														
77														
78														
79														

2.4 Data Evaluation

Only four results above the detection limits can be used for the evaluation. Results below the determination limit are marked with "<" followed by the determination limit of the laboratory (e.g. <0.1).

The results of the interlaboratory comparison test were evaluated according to DIN 38402/42. This type of evaluation is easy to do and requires no special computer programme. But, only by using robust statistics are the results really free of manipulation by the test leader. The differences between these two types of evaluation methods are not very big (Bartels 1996, Fürst 2004).

The DIN 38402/42 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 value are not longer outliers, they can 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 this tolerable limits are marked green, outside they are marked orange. This type of evaluation was fixed in the Foliar Expert Panel Meetings of As (1994) and Vienna (1997).

Table 3: Tolerable limits for the mandatory and optional elements

Element	Tolerable deviation from mean in %	Fixed limits in the Expert Panel-Foliar Meetings
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
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
C	95-105	6th Meeting - Bonn 1999

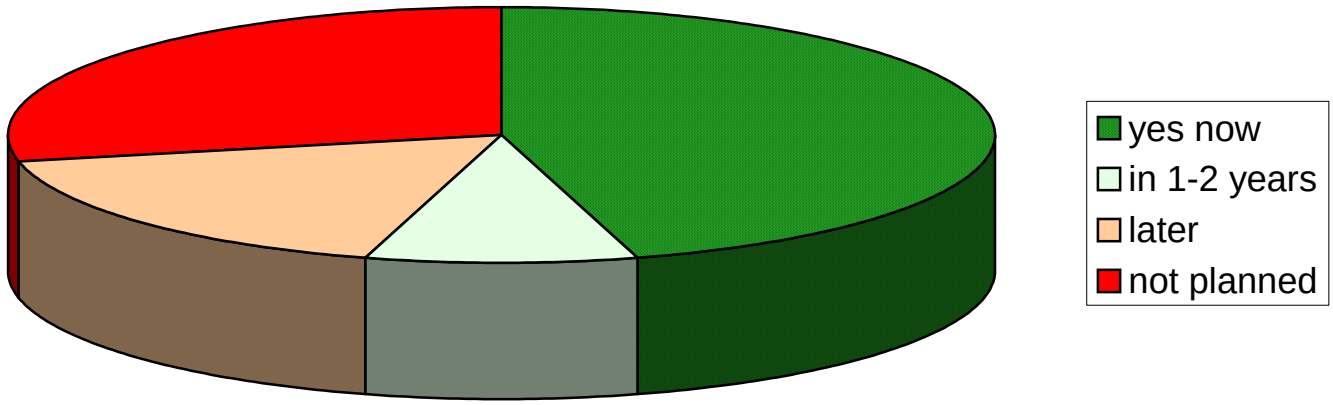
3 RESULTS

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. 46 of the 54 laboratories filled this questionnaire.

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

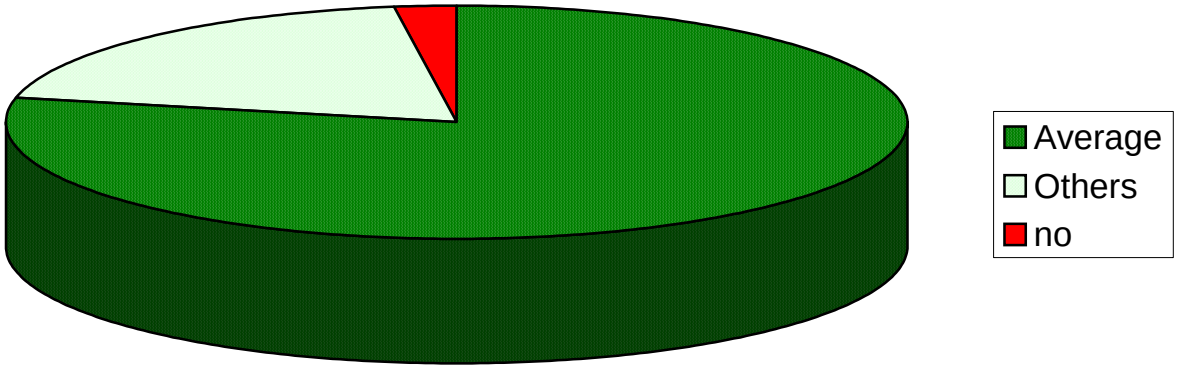
Figure 2: Accreditation status according EN 17025 (n=46)



More than 54% of the laboratories are accredited now (22 labs) or plan an accreditation within 1-2 years (3 labs). In comparison with the last test 2006/07 a slightly lower percentage - 58% were accredited or planed an accreditation soon in the 9th test, but there are more accredited labs now.

The next important question was about the usage of control charts for quality control. Close to 98% of the laboratories are using control charts, and most of them are using average control chart (appr. 78%) – only 1 of this 46 laboratories are using no control chart.

Figure 3: Usage of control charts in foliar laboratories (n=46)



3.2 Results of the 10th Interlaboratory Comparison Test

Table 4 gives an overview as to which laboratories analysed the test samples well and which encountered quality problems. This evaluation is based on the tolerable limits from table 3. A green marked field means all four samples are analysed well, a grey marked field means no results were sent from this laboratory till end of December 2007. The red marked “<” or “>” mean number of results lower or higher the tolerable limit.

The following participants who have a high percentage of non-tolerable results (above 20%) of the total results have bigger QC/QA-problems in their laboratory:

79 (70,8%), 30 (62,5%), 36 (46,4%), 05 (30,6%), 01 (30%), 19 (29,2%), 78 (28,8%), 15 (25%), 13 (22,9%) and 76 (22,5%)

Some laboratories are within the tolerable limits (see table 3), but the statistical evaluation shows an excessive standard deviation (outlier type 1 or 3), that means they had problems with their method. These results are marked with “a” or with “c” in the detailed evaluation in the annex.

Table 4: Results of the 10th Interlaboratory Comparison Test – results marked with the limits from table 3 (green = all four samples were analysed well; < = too low; > = too high; grey = no results were sent)

Laborcode	N	S	P	Ca	Mg	K	Zn	Mn	Fe	Cu	Pb	B	Cd	C
01			<<			>>>>								
02			>			<<<								
03						>								
04	>	>>	>>		>>									<
04a			<	>	<				>>	>				
05	<		<	>>>		>>	>>>>							
06														
07									<<					
08														
09				>		>>	>				>		<	
11									<	<<	<<			
12		>>												
13		>		<<<<		>>>>				>			>	
15			<<<<	>		>								
17		<												
18														
19				<>	<<	<<<								
20		<	<	<										
23														
25						>	>		>					
26							>		<<<					
28		<>>												
29		>	>>									>		
30		>>	<<	<<<<	>>>	<<<<								
32					<		<<	<			>			
33a			<<	>>	<<									
36		<<	<<	<<<<	<<<	<	<<<<				>>>	<<	>>>>	<
37														
37a														
38														
38a			>	>	>					>				
39		<<	<									>>		
42											>		>	
43														<<<
44	>													
46		>>	<						<	<				
47						<							<	
48												>>>		
49												>		
50											>>		>>>>	
52							<			>				
56				<									<	
60						>								
61	>>	<												
64		<					>>			>			>	

Laborcode	N	S	P	Ca	Mg	K	Zn	Mn	Fe	Cu	Pb	B	Cd	C
66														
68														
72														
73								>						
74		>>>		>>		<<<								
76				<<<<				<				<<<<		
77		<<												
78				>>	>>>		<<	<<			<>>		<<<	
79		<<<	<<<<	<<	<<<<	<<<<								

The following mean element concentrations were found in the test samples and the percentage of the laboratory results out of tolerance are also given in the following table 5.

Table 5: Mean element concentrations and percentage of non-tolerable results

Element	Unit	Sample 1 Spruce	Sample 2 Spruce	Sample 3 Ash	Sample 4 Ash
N	mg/g	14,02	13,56	21,03	23,95
	%	2,04	4,08	0,00	4,08
S	mg/g	1,06	0,88	3,68	2,70
	%	12,77	17,02	17,02	14,89
P	mg/g	1,60	1,17	0,99	2,34
	%	9,80	15,68	11,76	15,68
Ca	mg/g	4,71	2,98	21,77	17,45
	%	17,65	17,65	17,65	15,69
Mg	mg/g	1,28	1,38	2,24	3,32
	%	15,69	11,76	7,84	7,84
K	mg/g	7,14	7,32	11,31	18,58
	%	17,31	15,38	13,46	21,15
Zn	µg/g	31,19	27,36	14,93	28,88
	%	6,82	6,82	15,91	9,09
Mn	µg/g	957,0	1259,5	34,11	47,32
	%	2,22	0,00	8,88	2,22
Fe	µg/g	237,74	65,16	88,90	137,62
	%	6,82	6,82	4,55	4,55
Cu	µg/g	3,24	2,52	8,37	8,04
	%	4,88	14,63	0,00	0,00
Pb	µg/g	0,33	0,24	0,49	0,68
	%	20,00	32,00	4,00	4,00
Cd	ng/g	62,88	30,60	14,95	29,45
	%	16,00	16,00	24,00	12,00
B	µg/g	13,79	23,90	27,54	32,35
	%	16,67	16,67	12,5	8,33
C	g/100g	51,37	51,57	47,74	46,74
	%	2,56	2,56	0,00	7,69

3.3 Comparison between the 10th Interlaboratory Comparison Test and former tests

Sample 4 of the 10th and sample 4 of the 7th Interlaboratory Comparison Tests were identical (Ash leaves - Belgium). For all of the elements the mean values harmonize very well (Table 6).

Table 6: Comparison between the 7th and 10th Interlaboratory Comparison Test

Element (Unit)	7th Interlaboratory Comparison Test (Sample 4) Mean	*Number of Labs*	10th Interlaboratory Comparison Test (Sample 4) Mean	*Number of Labs*
Nitrogen (mg/g)	23,90	*39*	23,95	*49*
Sulphur (mg/g)	2,73	*39*	2,70	*47*
Phosphorus (mg/g)	2,35	*41*	2,34	*51*
Calcium (mg/g)	17,46	*41*	17,45	*51*
Magnesium (mg/g)	3,31	*41*	3,32	*51*
Potassium (mg/g)	18,66	*42*	18,58	*52*
Zinc (µg/g)	29,34	*36*	28,88	*44*
Manganese (µg/g)	49,60	*35*	47,32	*45*
Iron (µg/g)	142,1	*34*	137,62	*44*
Copper (µg/g)	8,29	*32*	8,04	*41*
Lead (µg/g)	0,72	*24*	0,68	*25*
Cadmium (ng/g)	28,04	*23*	29,45	*25*
Boron (µg/g)	32,11	*23*	32,35	*24*
Carbon (g/100g)	46,81	*29*	46,74	*39*

The ringtest is evaluated on the basis of fixed limits (table 3). These tolerable deviations from the mean were updated in Bonn (1999), Prague (2003) and Madrid (2007) for some elements. The development of tolerable results from the 2nd to the 10th test is shown in tables 7a and 7b.

Table 7a: Percentage of non tolerable results from 2nd till 7th test

Element	Tolerable deviation from mean (± %)	2nd Labtest 1997/1998		3rd Labtest 1997/1998		4th Labtest 1999/2000		5th Labtest 2001/2002		6th Labtest 2003/2004		7th Labtest 2004/2005	
		Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values
N	15/10*	**2,7**	*148*	**4,4**	*225*	**6,6**	*196*	**10,1**	*188*	**3,0**	*164*	**3,2**	*156*
S	20	**25,8**	*132*	**14,3**	*230*	**9,8**	*184*	**14,2**	*196*	**11,3**	*159*	**10,3**	*156*
P	15	**6,8**	*148*	**19,6**	*250*	**7,1**	*196*	**8,2**	*196*	**17,3**	*168*	**7,9**	*164*
Ca	15	**9,6**	*156*	**16,3**	*245*	**6,6**	*196*	**8,2**	*196*	**6,5**	*168*	**11,0**	*164*
Mg	15	**12,2**	*156*	**16,7**	*245*	**5,1**	*196*	**6,1**	*196*	**6,5**	*168*	**10,4**	*164*
K	15	**7,7**	*156*	**20,4**	*250*	**6,6**	*196*	**4,1**	*196*	**7,7**	*168*	**4,8**	*168*
Zn	20/15**	**18,9**	*132*	**16,9**	*225*	**12,0**	*183*	**8,3**	*192*	**11,5**	*148*	**14,0**	*143*
Mn	20/15**	**3,6**	*139*	**10,9**	*229*	**4,2**	*192*	**1,0**	*196*	**9,9**	*152*	**8,4**	*143*
Fe	20	**20,6**	*136*	**23,7**	*224*	**17,9**	*196*	**19,1**	*188*	**8,8**	*148*	**10,3**	*136*
Cu	30/20**	**20,7**	*116*	**16,2**	*191*	**20,0**	*165*	**9,8**	*174*	**9,9**	*131*	**14,3**	*126*
Pb	30	**53,0**	*66*	**42,4**	*99*	**32,1**	*78*	**23,9**	*109*	**27,8**	*90*	**38,0**	*79*
B	20	**33,9**	*56*	**18,2**	*115*	**18,4**	*103*	**12,5**	*104*	**23,8**	*84*	**21,1**	*90*
Cd	30	**48,0**	*25*	**30,0**	*77*	**16,9**	*65*	**21,6**	*88*	**12,0**	*83*	**11,1**	*81*
C	10/5*	**32,3**	*99*	**31,1**	*164*	**16,1**	*124*	**13,1**	*107*	**15,6**	*128*	**7,8**	*116*

* 2nd and 3rd test / 4th till 7th test

** 2nd till 5th test / 6th till 7th test

Table 7b: Percentage of non tolerable results from the 8th till the 10th test

Element	Tolerable deviation from mean (± %)	8th Labtest 2005/2006		9th Labtest 2006/2007		10th Labtest 2007/2008	
		Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values	Non tolerable (%)	Number of mean values
N	10	**7,3**	*192*	**6,1**	*196*	**2,6**	*196*
S	20/15***	**10,6**	*188*	**8,3**	*196*	**15,4**	*188*
P	15/10***	**9,7**	*196*	**4,3**	*208*	**13,2**	*204*
Ca	15/10***	**10,2**	*196*	**4,3**	*208*	**17,2**	*204*
Mg	15/10***	**5,9**	*188*	**4,3**	*208*	**10,8**	*204*
K	15/10***	**5,6**	*196*	**3,3**	*212*	**16,8**	*208*
Zn	15	**4,5**	*156*	**8,9**	*168*	**10,2**	*176*
Mn	15	**7,0**	*172*	**0,0**	*176*	**2,8**	*180*
Fe	20	**7,1**	*168*	**9,9**	*172*	**5,7**	*176*
Cu	20	**8,9**	*146*	**10,8**	*148*	**4,9**	*164*
Pb	30	**34,7**	*72*	**24,0**	*104*	**13,0**	*100*
B	20	**12,8**	*86*	**8,3**	*84*	**13,5**	*96*
Cd	30	**10,3**	*97*	**7,1**	*112*	**17,0**	*100*
C	5	**4,3**	*140*	**11,1**	*144*	**3,2**	*156*

*** 8th and 9th test / 10th test

3.4 Evaluation by element

3.4.1 Nitrogen

The result is really good, only 2.6% of non-tolerable results could be found. No laboratory failed with three or four samples.

3.4.2 Sulphur

In comparison with the 9th Interlaboratory Test the percentage of non-tolerable results is higher (15.4%). Laboratories 28, 74 and 79 failed with three or four samples – the laboratories 28 and 74 are analyzing level II samples this year too.

The three laboratories are using quite different methods – laboratory 28 is using dry digestion method & Ion chromatography. The recovery of the two spruce samples with lower sulphur concentrations is low (75.9% and 88.3%). The recovery of the ash samples with high sulphur concentration is too high (129.7% and 123.1%) and the problem could be the not recommended dry sample digestion. The relation between organic and inorganic sulphur compounds in unpolluted spruces is higher than in ashes. Losses of organic sulphur compounds in dry digestion methods are reported in literature. That could be the explanation for the low recovery for spruce samples and the too high results for the ash samples.
Laboratory 74 is using an element analyser – there is an correlation between the concentration and the recovery of the sample - lower sulphur concentrations show higher recoveries. The reason could be a calibration problem or that the decomposition of the sulphur compounds is not complete.
Laboratory 79 is using wet digestion & ICP-AES method. The recovery is constant too low (80.5-85.4%) and this could be a methodical problem.

Feedback from the laboratories: Laboratory 28 will change the method (see reasons above) and will fix the problem till May 2008.

3.4.3 Phosphorus

In comparison with the 9th Interlaboratory Test the percentage of non-tolerable results is slightly higher (13.2%) and this depends only because of the lower tolerable limit in this test (15→10% of the mean).
Laboratories 15 (recovery 83.7-87.3%) and 79 (21.4-58.5%) failed with 4 samples – but they are not analyzing level II samples this year. It seems that both laboratories had methodical problems.
X-Ray analyzers show for the spruce samples higher phosphorous results.

3.4.4 Calcium

The results are not good as 17.2% of non-tolerable values can be found and this result is not only from the lower tolerable limit in this test (15→10% of the mean).
Laboratories 05, 13, 30, 36 and 76 failed with three or four samples – the laboratories 13 and 36 are analysing level II samples and methodical problems could be the reason for this. Two of them (13, 30) are using AAS-flame technique (Acetylene/Air). The use of

Acetylene/N2O-Flame or of a spectral buffer e.g. $La(NO_3)_2$ is required, otherwise too low results could be found.
Laboratory 30 is using an aqua regia extraction – this is not common in foliage analyses.
The results of laboratory 05 are too high – contamination problems or a calibration problem could be a possible reason for this.

Feedback from the laboratories: Laboratory 13 made changes in the determination method (Flame-AAS) and reanalyzed the samples - the correct results could be found.

3.4.5 Magnesium

In comparison with the 9th Interlaboratory Test the percentage of non-tolerable results is higher (10.8%) – this depends mostly on the lower tolerable limit in this test (15→10% of the mean).
Laboratories 30, 36, 78 and 79 failed with three or four samples and Laboratory 36 is analysing level II samples.
Laboratory 30 is using an aqua regia extraction – this is not common in foliage analyses.
A contamination problem (water) could be one reason for the higher results of the laboratories 30 and 78.

3.4.6 Potassium

The results are not good as 16.8% of non-tolerable values can be found and this depends not only of the lower tolerable limit in this test (15→10% of the mean).
Laboratories 01, 02, 13, 19, 30, 74 and 79 failed with three or four samples and laboratories 01, 13, 19 and 74 are also analysing level II samples.
As potassium is a very sensitive element which is subject to errors, its determination with AAS method requires the use of an ionisation buffer (e.g. $CsCl_2$), the use of matrix adapted standard (= same acid type and concentration like in the samples) and matrix adapted blank solutions. Furthermore contamination problems are important as especially laboratory dish washers and water are possible sources for potassium contaminations.

Feedback from the laboratories: Laboratory 13 made some changes in the determination method (Flame-AAS) and reanalyzed the samples. The correct results could be found.
Laboratory 01 plans to buy new Flame-AAS instrument and will try to fix the contamination problem with the open wet-acid digestion this year.
Laboratory 47 identifies a data transcription error for the results of sample 4.
Laboratory 19 repeated the samples and identifies a dilution and a data transcription error.

3.4.7 Zinc

10.2% of non-tolerable values could be found – the result is not as good as in the last test. But only two laboratories (05 and 36) had problems with the zinc determination and they failed with all samples. Only laboratory 36 is analysing level II samples for the ICP-Forests programme this year.

3.4.8 Manganese

All laboratories achieved reliable results (2.8% of non-tolerable values). No laboratory failed with three or four samples.

3.4.9 Iron

The iron results were better than those in the last test (5.7% of non-tolerable results). Only Laboratory 26 failed with three samples.

3.4.10 Copper

All laboratories achieved reliable results (4.9% of non-tolerable results). No laboratory failed with three or four samples.

3.4.11 Lead

The results are much better than those of the last test - 13% of non-tolerable results. Laboratories 36 and 78 failed with three samples – laboratory 36 is analysing level II samples this year too.
Some laboratories had contamination problems and therefore produced excessive results or a big laboratory standard deviation. They have to work on their methodical problems. For low lead concentrations Flameless AAS or ICP-MS are better methods than ICP-AES.

3.4.12 Boron

The results were not as good as those in the last test, 13.5% of non-tolerable results were found compared to 8.3 in the 9th test. Laboratories 48 and 76 failed with three or four samples - laboratory 48 is analysing level II samples this year too.

Feedback from the laboratories: Laboratory 48 found the reason for the wrong results (calibration problem with the ICP-MS) and will fix it in May 2008.

3.4.13 Cadmium

The results are bad as 17.0% of non-tolerable values can be found. Laboratories 36, 50 and 78 failed with three or four samples – laboratories 36 and 50 are analysing level II samples this year too.

Feedback from the laboratories: Laboratory 50 used a wrong wavelength, the lab reanalysed the samples with the correct wavelength and fixed the problem end of January 2008.
Laboratory 47 identifies a data format error.

3.4.14 Carbon

A good result for carbon emerged – 3.2% of non-tolerable results were found. Only laboratories 43 failed with three samples. Laboratory 43 is participating also in the level II programme this year.

Feedback from the laboratories: Laboratory 43 found the reason for the wrong results (calibration problem and a methodical reason) and will fix it till April 2008.

4 CONCLUSIONS

Lower tolerable limits for the mandatory parameters S to ± 15% and for P, Ca, Mg and K to ± 10% were fixed at the Expert Panel Meeting in Madrid in April 2007, because of the improvement of the data quality in most of the laboratories. The 10th Interlaboratory Test was evaluated with these smaller limits.

The results show generally a good analytical quality in foliar analysis. Especially the results for N and C are really good and are better than those in the previous tests.
The results of the mandatory parameters S, P, Ca, Mg and K are not so good as in former tests, depending partly on of the smaller tolerable limits. But for S, Ca and K there are probability other methodical sources for the increase of non-tolerable results.

The results for the optional parameters Fe, Cu, Pb are better than those of the 9th Interlaboratory Test.

Some of the laboratories had to learn from their ringtest results and had to improve their quality. They had to make a revision of their method, especially those with statistic outliers and/or considerable results (more than 20%) outside of the tolerable limits (especially the laboratories 01, 05, 13, 15, 19, 30, 36, 76, 78 and 79).

A trend in the use of analytical methods can be seen:

- For C, N, (S) element-analyzers are becoming more and more important.
- Acid digestion methods in closed systems in combination with ICP methods are very good for the determination of S, P, K, Ca, Mg, Fe, Zn, B and Cu.
- Flameless-AAS and ICP-MS methods should be used for analysing Cd, Pb and Cu (especially for low concentrations)
- An X-ray fluorescence analysis is a method to generate good results for S, Ca, Mg, K, Zn and Mn. X-Ray analyzers show for the spruce samples in this interlaboratory test higher phosphorous results.

The questionnaire about the status of the QA/QC system was returned by 46 laboratories - 22 of these laboratories are accredited now and three laboratories plan an accreditation within 1-2 years. Only one of these 22 accredited laboratories has bigger QA/QC problems with more than 20% non-tolerable results. Accreditation seems to be an indicator for a good quality of the results.
Control charts are used as a quality control instrument in daily routine - only one of the 46 laboratories is not using control charts.

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Germany

Tel.: +49 (0) 6181 91 00 - 0
Mail: info@elementar.de
Web: www.elementar.de

List of participating laboratories and responsible persons

Austria
Alfred Fürst
Bundesforschungszentrum für Wald
Pflanzenanalyse
Seckendorff-Gudent-Weg 8
A-1131 - Wien

Max Rührlinger
AGES GmbH
Zentrum f. Analytik u. Mikrobiologie
Wieningerstr. 8
A-4021 - Linz

Belarus
V. L. KRASOVSKI
Forest Inventory Enterprise Belgosles
Analitical labolatory of Belgosles
Zcheleznodoroznaja str. 27
220089 - Minsk

Belgium/Flanders
Bruno De Vos
Research Institute for Nature and Forest
INBO lab
Gaverstraat 4
B-9500 - Geraardsbergen

Belgium/Wallonia
Giot-Wirgot, Pierre
Université catholique de Louvain (UCL)
Unité des eaux et forêts
Place Croix du Sud 2, bte 9
B-1348 - Louvain-La-Neuve

Croatia
Tamara Jakovljevic
Forest Research Institute
Department of Ecology and Siviculture
Cvjetno naselje 41
HR-10450 - Jastrebarsko

Cyprus
Panicos Hadjigeorgiou
Department of Agriculture
Analytical Laboratories
Louki Akrita -Av.
CY-1412 - Nicosia

Czech Republic
Jan Jindra
Forestry and Game Management Res. Inst.
Testing Laboratories (25)
Strnady 136
CZ-25202 - Jiloviste

Denmark
Morten Ingerslev / Preben F.
Forest & Landscape Denmark
Dept.of Applied Ecology
Horsholm Kongevej 11
DK-2970 - Horsholm

Estonia
Mae Uri
Tartu Environmental Research
Tartu Environmental Research
Akadeemia 4
EST-51003 - Tartu

Finland
Arja Tervahauta
Finnish Forest Research Institute
Central Laboratory
Jokiniemenkuja 1
FIN-01300 - Vantaa

Kari Honka
Finnish Forest Research Institute
Parkano Research Unit
Kaironiementie 54
FIN-39700 - Parkano

Kirsti Derome
Finnish Forest Research Institute
Rovaniemi Research Unit
PL 16
96301 - Rovaniemi

France
Mireille BARBASTE
INRA
USRAVE
71, ave E. Bourlaux B.P.81
33 883 - Villenave d'Ornon

Germany
Dr. Claus-G Schimming
Christian-Albrechts-Universität
Ökologie-Zentrum Kiel
Olshausenstr. 40
D-24098 - Kiel

Germany

Frank Symossek
Saxon State Bord of Forestry-Saxonforest
Dept. IV. Ref. 45
Bonnewitzer Str. 34
D-01796 - Pirna OT Graupa

Gabriele Trefz-Malcher
FVA-Baden-Württemberg
Abt. Boden und Umwelt
Wonnhaldestraße 4
D-79100 - Freiburg

Gerd Cousen
LANUV Nordrhein-Westfalen
RFA-LANUV
Wallneyer Str. 6
D-45133 - Essen

G.Kießling
Thüringer LA für Landwirtschaft
Boden-und Düngemitteluntersuchung
Naumburger Str. 98
D-07743 - Jena

Jürgen Bargholz
Thür. Landesanst. f. Landwirtschaft
Futtermittellabor
Naumburger Str.98
D-07743 - Jena

Klaus Wies
LUFA Speyer
Abt. 3 Referat 2
Obere Langgasse 40
D-67346 - Speyer

L.Reichelt
Fachhochschule Eberswalde
Zentr. Einrichtung - Ökologisches Labor
Friedrich - Ebert - Str. 28
D-16225 - Eberswalde

Maren Blankenburg (2x)
LUFA NRW
Spezielle anorganische Analytik (Wasser)
Nevinghoff 40
48147 - Münster

Nils König
Nordwestdeutsche Forstl.Versuchsanstalt
Abt. D, Umweltanalytik
Grätzelstr. 2
D-37079 - Göttingen

Prof. Axel Göttlein
TU - München
Lehrgebiet Waldernährung+ Wasserhaushalt
Am Hochanger 13
D-85354 - Freising

Germany

Prof. Dr. Willy Werner
Universität Trier, FB VI, Geobotanik
Geobotanisches Labor
Behringstraße
D-54286 - Trier

Rolf Ellinghaus
Hessisches Landeslabor
Abt. VI - FG VI.3 -
Am Versuchsfeld 13
D-34128 - Kassel

Sawinski
FI. für Bergbaufolgelandschaften e.V.
Analytisches Labor
Brauhausweg 2
D-03238 - Finsterwalde

Thomas Klinger
TU Dresden
Inst. f. Bodenkunde und Standortslehre
Pienner Str. 19
D-01737 - Tharandt

Thorsten Nack
Landeslabor Schleswig-Holstein
Dezernat 830, Gebäude 6
Max-Eyth-Str.5
D-24537 - Neumünster

Uwe Blum
Bay. LA f. Wald u. Forstwirtschaft
Zentrallabor
Am Hochanger 11
D-85354 - Freising

W.Sarich
LUFA Rostock
LUFA Rostock - nasschemische Daten
Graf-Lippe-Str. 1
D-18059 - Rostock

W.Sarich
LUFA Rostock
LUFA Rostock - RFA Daten
Graf-Lippe-Str. 1
D-18059 - Rostock

Greece

P.Michopoulos
Forest Research Institute of Athens
Forest Soils
Terma Alkmanos
115 28 - Athens

Hungary
Mr Gabor Pancel
Forest Research Insitute
Ecological Laboratory
Várkerület 30/a
H-9601 - Sárvár

Ireland
Philip O'Dea
Coillte Teoranta
Coillte Laboratories
Church Road, Newtownmountkennedy
Co.Wicklow

Italy
De Cinti Bruno - Magnani Dino
In. Agroenvironmental and Forest Biology
CNR-IBAF
Via Salaria km 29,300
I-00060 - Monterotondo Scalo (RM)

Latvia
I.Lyulko
LEGMA
Environmental Laboratory
Maskavas Str. 165
LV-1019 - Riga

Lithuania
Sarunas Antanaitis
Lithuanian Institute of Agriculture
Agrocheminiu tyrimu centras
Savanoriu 287
LT-50127 - Kaunas

Norway
Jan Erik Jacobsen
Norwegian Forest and Landscape Institute
Chemical Laboratories
Hogskoleveien 8
NO-1432 - As

Poland
Jozef Wojcik
Forest Research Institute
Lab. of Forest Environment Chemistry
Sekocin Stary
PL-05-090 - Raszyn

Portugal
Lídia Maria Tavares Farropas
Nat. Research Inst. Agric. Fisheries
Lab. Agric. Chemistry Rebelo da Silva
Tapada da Ajuda - Apartado 3228
P-1301-903 - Lisboa

Romania

Carmen Iacoban
Forest Research Station Campulung
Chemistry laboratory
Calea Bucovinei, 73 bis
725100 - Campulung Moldovenesc

Monica Ionescu
Forest Research and Management Institute
Forestry-Ecology Laboratory
Sos.Stefanesti, nr.128
RO-077190 - Bucharest

Russia

L.S. Kotova
Water Research and Control Center (WRCC)
Lab. of Spectrometry
Komsomola street 9
RUS-195009 - Saint-Petersburg

Svetlana Kostrova
Institute of Biology Komi SC UB RAS
«ECOANALYT» Ecoanalytical laboratory
Kommunisticheskaya st., 28
167982 - Syktyvkar

Slovakia

Jana Durkovicová
National Forest Centre
Central Forest Laboratory
T.G.Masaryka 22
SK-96092 - Zvolen

Slovenia

Daniel Zlindra
Slovenian Forestry Institute
Laboratory for Forest Ecology
Vecna pot 2
SI-1000 - Ljubljana

Spain

Isabel González González
INIA
Lab.de Ecosistemas Forestales
Apdo.8111
E-28080 - Madrid

Sweden

Anders Ohlsson
Swedish Univ. of Agricultural Sciences
Forest Ecology and Management
Petrus Laestadius väg
SE90183 - Umeå

Switzerland
Daniele Pezzotta
Eidg. Forschungsanstalt WSL
Zentrallabor
Zürcherstrasse 111
CH-8903 - Birmensdorf

Turkey
SAYMAN Mehmet
Ege Ormancılık Ars Ens
Soil and Ecology Lab
Must Kemal Bulv No 75 Zeytinalani Urla
35430 - Izmir

United Kingdom
Francois Bochereau
Forest Research
EHSD
Alice Holt Lodge
GU10 4LH - Farnham, Surrey

Method Code – Pretreatment (P)

0 No information

1 No pre-treatment

2 Extractions
2.3 Extraction aqua regia
2.7 Extraction H2O
2.8 Extraction HNO3

3 Wet ashings at room pressure (open system)
3.1 Wet ashing HNO3
3.10 Wet ashing HNO3 /H2SO4
3.11 Wet ashing aqua regia

3.2 Wet ashing HNO3/HF
3.20 Wet ashing HClO4/H2O2
3.21 Wet ashing HClO4/H2SO4

3.3 Wet ashing HNO3/HClO4
3.31 Wet ashing H2SO4/H2O2
3.32 Wet ashing H2SO4/K2CrO7

3.4 Wet ashing HNO3/HClO4/HF
3.5 Wet ashing HNO3/H2O2

3.50 Kjeldahl H2SO4/ Se-catalyst
3.51 Kjeldahl H2SO4/Cu-catalyst
3.52 Kjeldahl H2SO4/Ti-Cu-catalyst
3.53 Kjeldahl H2SO4/Hg-catalyst

3.6 Wet ashing HNO3/HClO4 /H2SO4
3.7 Wet ashing HNO3/HClO4/CaCl2
3.8 Wet ashing HNO3/HClO4/H2O2
3.9 Wet ashing HNO3/HClO4/HCl

4 Pressure digestions (closed system)
4.1 Pressure digestion HNO3,
4.2 Pressure digestion HNO3/HF
4.3 Pressure digestion HNO3/HClO4
4.4 Pressure digestion HNO3/HClO4/HF
4.5 Pressure digestion HNO3/H2O2

5 Microwave pressure digestions (closed system)
5.1 Microwave digestion HNO3,
5.2 Microwave digestion HNO3/HF
5.3 Microwave digestion HNO3/HClO4
5.4 Microwave digestion HNO3/HClO4/HF
5.5 Microwave digestion HNO3/H2O2,
5.6 Microwave digestion HNO3/H2O2/HF
5.7 Microwave digestion HNO3/H2O2/HCl
5.8 Microwave aqua regia

6 Dry ashings (not recommended)
6.1 Dry ashing dissolution with HNO3
6.2 Dry ashing dissolution with HNO3/MgNO3
6.3 Dry ashing dissolution with HNO3/HF
6.4 Dry ashing dissolution with HNO3/HCl
6.5 Dry ashing dissolution with HCl
6.6 Dry ashing dissolution with HCl/HF
6.7 Dry ashing, dissolution with H2SO4

7 Oxygen ashings
7.1 Oxygen ashing, Schöniger
7.2 Oxygen ashing, Wickbold
7.3 Oxygen ashing, calorimetric bomb

9 X-ray-pretreatments and other pretreatments
9.1 Material pressed (pellet)
9.2 Material melted and formed (tablet)
9.5 Melting (NaOH)

Method Code – Determination (D)

0 No information

1 No detection

10 Elemental-analyzers
11 Kjeldahl-apparatus
11.1 Kjeldahl-apparatus (Tecator)
11.2 Kjeldahl-apparatus (Gerhardt)
11.3 Kjeldahl-apparatus (Büchi)

12 N-Analyzer
12.1 N-Analyzer (Heraeus/Elementar)
12.2 N-Analyzer (Vario)
12.3 N-Analyzer (Leco)

13 C-Analyzer
13.1 C-Analyzer (Leco)
13.2 TOC Analyzer
13.3 C-Analyzer (Heraeus/Elementar)

14 S-Analyzer
14.1 S-Analyzer (Leco)

15 C/N-Analyzer
15.1 C/N-Analyzer (Carlo-Erba=CE Instruments)
15.2 C/N-Analyzer (Leco)
15.3 C/N-Analyzer (Heraeus/Elementar)
15.4 C/N-Analyzer (Vario)
15.5 C/N-Analyzer (Hekatech)

16 C/S-Analyzer
16.1 C/S-Analyzer (Leco)

17 C/N/S-Analyzer
17.1 C/N/S-Analyzer (Leco)
17.2 C/N/S-Analyzer (Heraeus/Elementar)
17.3 C/N/S-Analyzer (Thermo Electron)
17.4 C/N/S-Analyzer (Carlo-Erba=CE Instruments)

18 C/N/H-Analyzer
18.1 C/N/H-Analyzer (Leco)
18.2 C/H/N-Analyzer (Heraeus/Elementar)

19 C/H/N/S-Analyzer

20 Mono-Atom-Spectrometry-Techniques
21 AAS-flame technique
21.1 AAS-flame technique (C2H2/Air)
21.2 AAS-flame technique (C2H2/N2O)

22 AAS-flameless (electrothermal technique)
24 AAS-hydride technique
25 AAS-cold vapor technique
25.1 AAS-LECO/ALTEC Mercury Analyzer
26 AFS-hydride-technique
28 AES-Flame photometer

30 Multi-Atom-Spectrometry-techniques
31 ICP-AES without Ultrasonic nebulisation
32 ICP-AES with Ultrasonic nebulisation
35 ICP-MS

40 Physical techniques
41 X-ray-energy dispersive
42 X-ray-wavelength dispersive
45 Neutron activation analysis (NAA)
47 Gamma-spectroscopy
48 Laser diffraction

50 UV-VIS-spectrophotometry-techniques

51 Colorimetric N-Determination
51.1 Indophenol-blue-method
51.2 Flow Injection (FIAS)-NH3-Membrane-diffusion 566 nm
51.3 Continuous flow method, Indophenol blue

52 Colorimetric S-Determination
52.1 Nephelometry
52.2 Turbidimetry

53 Colorimetric P-Determination
53.1 Molybdene-blue-method
53.2 Vanadium-Mo-blue-method
53.3 Continuous flow method, Molybdene-blue

54 Colorimetric B-Determination
54.1 Azomethin - H
54.2 Carmine

60 Ion-chromatographic techniques

61.1 Anion-Chromatography w. chemical suppression
61.2 Anion-Chromatography w. electr. suppression

62.1 Kation-Chromatography w. chemical suppression
62.2 Kation-Chromatography w. electr. Suppression

70 Electrochemical methods

71 Conductimetry
71.1 Conductometric titration

72 Potentiometry
72.2 other ion selective electrodes

73 Potentiometric titrations
74 Stripping potentiometry
75 Voltammetry
76 Polarography
77 Amperometry
78 Electrophoresis
79 Redox potential

80 Classical analytical techniques

81 Gravimetry
82 Titration
82.1 NH4-back titration
82.2 Thiocyanate-titration
82.3 FeNH4SO4-Titration
82.4 Barimetric titration
82.5 AgNO3-Titration

90 other detections

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 table 3)

Annex - Results

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

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

Additional parameters

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: N **Sample: 1** Dimension: 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	42	0	0	*12,4a*	13,10	13,10	13,20	3	13,13			0,06	0,44	93,69
2	72	3.50	11.3	13,07	13,23	12,87	12,83	4	13,00			0,19	1,43	92,74
3	18x	3.31	51.3	12,90	13,00	13,20	13,00	4	13,03			0,13	0,97	92,92
4	07x	1	18.1	13,20	13,10	12,90	13,10	4	13,08			0,13	0,96	93,28
5	36x	3.51	82	13,57	13,38	13,41	13,44	4	13,45			0,08	0,62	95,95
6	02	9.1	18.2	13,50	13,72	13,39	13,22	4	13,46			0,21	1,56	96,00
7	39x	1	12.3	13,50	13,10	13,90	13,60	4	13,53			0,33	2,44	96,49
8	50x	1	17.1	13,82	13,54	13,48	13,57	4	13,60			0,15	1,10	97,04
9	64	3.51	11	13,60	13,80	13,40	13,64	4	13,61			0,16	1,21	97,09
10	05	3.52	11	13,00	14,52	13,12	13,82	4	13,62			0,70	5,17	97,13
11	03x	1	15.2	13,60	13,60	13,80	13,67	4	13,67			0,09	0,69	97,50
12	28x	3.31	51.3	13,63	13,66	13,70	13,69	4	13,67			0,03	0,23	97,52
13	33a	6.7	82	13,59	13,78	13,67	13,71	4	13,69			0,08	0,60	97,64
14	20x	0	15.2	13,75	13,80	13,71	13,76	4	13,76			0,04	0,27	98,13
15	49	1	15.4	14,03	13,83	13,36	13,93	4	13,79			0,30	2,15	98,36
16	38a	3.50	11	13,90	13,80	13,80	13,80	4	13,83			0,05	0,36	98,63
17	23x	1	17.4	13,40	14,10	13,70	14,30	4	13,88			0,40	2,91	98,98
18	13x	1	17.1	14,20	13,78	13,67	13,88	4	13,88			0,23	1,65	99,04
19	60	1	12.3	13,92	13,93	13,91	13,92	4	13,92			0,01	0,06	99,30
20	43x	1	15.2	14,00	13,90	13,90	13,90	4	13,93			0,05	0,36	99,34
21	73	3.50	11.2	13,83	13,93	14,04	13,93	4	13,93			0,09	0,62	99,39
22	38x	1	15.3	13,90	13,90	14,10	13,90	4	13,95			0,10	0,72	99,52
23	11	3.52	11.1	13,97	14,10	13,92	13,89	4	13,97			0,09	0,66	99,66
24	15	1	17	14,20	14,10	14,20	13,40	4	13,98			0,39	2,76	99,70
25	48x	1	15.3	14,07	13,90	14,02	14,09	4	14,02			0,09	0,61	100,02
26	17x	1	17.2	14,10	14,00	14,10	14,10	4	14,08			0,05	0,36	100,41
27	37	1	15.4	14,14	14,11	14,04	14,02	4	14,08			0,06	0,40	100,43
28	46	1	17.2	14,36	14,06	13,85	14,06	4	14,08			0,21	1,49	100,46
29	78	1	17.4	13,77	14,00	14,25	14,36	4	14,10			0,26	1,87	100,55
30	12x	1	17.1	14,19	14,22	14,30	13,79	4	14,13			0,23	1,61	100,77
31	79	3.3	11.2	14,31	14,11	14,20	14,11	4	14,18			0,09	0,67	101,18
32	47x	1	15.4	14,13	14,18	14,27	14,24	4	14,20			0,06	0,44	101,33
33	08	1	17.1	14,40	14,20	14,20	14,10	4	14,23			0,13	0,88	101,48
34	29x	1	15.3	14,58	14,58	13,98	13,79	4	14,23			0,41	2,87	101,53
35	66	1	18.1	14,20	14,30	14,30	14,20	4	14,25			0,06	0,41	101,66
36	56	1	17.2	14,20	14,30	14,20	14,30	4	14,25			0,06	0,41	101,66
37	04a	1	15.2	14,25	14,22	14,31	14,23	4	14,25			0,04	0,28	101,68
38	52	7	18.1	14,02	14,35	14,33	14,40	4	14,28			0,17	1,21	101,84
39	01x	1	17.1	14,60	14,20	14,10	14,20	4	14,28			0,22	1,55	101,84
40	77	1	17.1	14,36	14,28	14,40	14,32	4	14,34			0,05	0,36	102,30
41	74x	1	17.2	14,36	14,59	14,07	14,51	4	14,38			0,23	1,59	102,60
42	25	1	17	14,40	14,00	14,90	14,30	4	14,40			0,37	2,60	102,73
43	09	3.51	11.2	14,30	14,40	14,60	14,40	4	14,43			0,13	0,87	102,91
44	30	3.52	11.2	14,70	14,70	14,70	14,70	4	14,70			0,00	0,00	104,87
45	32	1	19	15,03	14,80	14,98	15,12	4	14,98			0,13	0,90	106,88
46	19x	1	15.1	15,01	15,30	14,92	15,05	4	15,07			0,16	1,08	107,51
47	04x	1	12.1	14,68	15,24	15,26	15,41	4	15,15			0,32	2,12	108,06
48	61x	1	17	15,20	16,14	14,39	15,24	4	15,24			0,72	4,69	108,74
49	44x	1	15.5	*15,70*	*16,20*	*15,50*	*16,50*	0	*15,98*	b	*	0,46	2,86	113,96
50														
51														
52														
53														
54														
55														

	N	Mean	SI	VI
all labs	191	**14,02**	**0,174**	**1,238**
10	% from the mean			
	L		SR	VR
	48		**0,504**	**3,600**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	07x	1	18.1	12,70	12,50	12,40	12,50	4	12,53		0,13	1,00	92,38
2	18x	3.31	51.3	12,50	12,40	12,80	12,40	4	12,53		0,19	1,51	92,38
3	42	0	0	12,80	12,50	12,60	12,60	4	12,63		0,13	1,00	93,12
4	05	3.52	11	12,78	12,63	12,42	12,70	4	12,63		0,15	1,22	93,18
5	36x	3.51	82	12,75	12,69	12,61	12,63	4	12,67		0,06	0,50	93,45
6	02	9.1	18.2	12,81	12,78	12,67	13,01	4	12,82		0,14	1,11	94,54
7	72	3.50	11.3	13,04	12,92	13,11	13,17	4	13,06		0,11	0,82	96,33
8	20x	0	15.2	13,14	13,14	13,07	13,09	4	13,11		0,04	0,27	96,70
9	33a	6.7	82	13,14	13,09	13,16	13,19	4	13,14		0,04	0,30	96,95
10	49	1	15.4	13,30	13,20	13,31	13,16	4	13,24		0,07	0,56	97,68
11	38a	3.50	11	13,20	13,20	13,30	13,30	4	13,25		0,06	0,44	97,73
12	30	3.52	11.2	13,30	13,30	13,30	13,30	4	13,30		0,00	0,00	98,10
13	13x	1	17.1	13,39	13,18	13,28	13,39	4	13,31		0,10	0,76	98,18
14	28x	3.31	51.3	13,35	13,33	13,31	13,31	4	13,33		0,02	0,14	98,29
15	39x	1	12.3	13,50	13,00	13,50	13,30	4	13,33		0,24	1,77	98,29
16	03x	1	15.2	13,42	13,35	13,32	13,22	4	13,33		0,08	0,62	98,30
17	50x	1	17.1	13,52	13,37	13,35	13,29	4	13,38		0,10	0,73	98,71
18	60	1	12.3	13,44	13,41	13,38	13,42	4	13,41		0,02	0,19	98,93
19	43x	1	15.2	13,40	13,50	13,40	13,40	4	13,43		0,05	0,37	99,02
20	73	3.50	11.2	13,49	13,49	13,38	13,49	4	13,46		0,05	0,41	99,30
21	46	1	17.2	13,44	13,70	13,45	13,39	4	13,50		0,14	1,03	99,54
22	17x	1	17.2	13,50	13,50	13,50	13,50	4	13,50		0,00	0,00	99,58
23	15	1	17	13,40	13,70	13,60	13,40	4	13,53		0,15	1,11	99,76
24	38x	1	15.3	13,50	13,50	13,50	13,60	4	13,53		0,05	0,37	99,76
25	48x	1	15.3	13,62	13,60	13,57	13,39	4	13,55		0,11	0,78	99,91
26	37	1	15.4	13,55	13,52	13,58	13,53	4	13,55		0,03	0,20	99,91
27	01x	1	17.1	13,70	13,70	13,50	13,40	4	13,58		0,15	1,10	100,13
28	19x	1	15.1	13,63	13,46	13,66	13,59	4	13,59		0,09	0,65	100,20
29	08	1	17.1	13,40	13,50	13,50	14,10	4	13,63		0,32	2,35	100,50
30	23x	1	17.4	13,50	13,60	13,60	13,80	4	13,63		0,13	0,92	100,50
31	56	1	17.2	13,80	13,60	13,90	13,50	4	13,70		0,18	1,33	101,05
32	52	7	18.1	13,73	13,51	13,81	13,76	4	13,70		0,13	0,97	101,07
33	79	3.3	11.2	13,70	13,67	13,76	13,74	4	13,72		0,04	0,29	101,18
34	64	3.51	11	13,70	13,87	13,74	13,56	4	13,72		0,13	0,93	101,18
35	29x	1	15.3	13,83	13,89	13,63	13,57	4	13,73		0,15	1,12	101,27
36	78	1	17.4	13,77	13,75	13,67	13,86	4	13,76		0,08	0,57	101,51
37	66	1	18.1	13,80	13,70	13,90	13,70	4	13,78		0,10	0,70	101,60
38	25	1	17	13,90	14,00	13,80	13,60	4	13,83		0,17	1,24	101,97
39	12x	1	17.1	13,85	13,81	13,80	13,86	4	13,83		0,03	0,21	102,01
40	77	1	17.1	13,86	13,86	13,81	13,87	4	13,85		0,03	0,20	102,16
41	47x	1	15.4	13,95	13,85	13,94	13,87	4	13,90		0,05	0,34	102,55
42	04a	1	15.2	13,89	14,03	13,91	13,97	4	13,95		0,06	0,45	102,90
43	09	3.51	11.2	13,90	13,90	14,00	14,20	4	14,00		0,14	1,01	103,26
44	74x	1	17.2	14,06	14,21	14,21	14,21	4	14,17		0,08	0,53	104,54
45	11	3.52	11.1	14,21	14,21	14,30	14,10	4	14,21		0,08	0,58	104,78
47	44x	1	15.5	14,30	14,40	14,00	15,20	4	14,48		0,51	3,54	106,77
48	32	1	19	14,80	14,75	14,88	14,78	4	14,80		0,06	0,38	109,18
49	61x	1	17	14,22	15,93	14,79	15,30	4	15,06	*	0,73	4,84	111,08
46	04x	1	12.1	15,02	15,10	*12,12a*	15,20	3	15,11	*	0,09	0,60	111,43
50													
51													
52													
53													
54													
55													

	N	Mean	SI	VI
all labs	195	**13,56**	**0,118**	**0,869**
10	% from the mean			

L	SR	VR
49	**0,562**	**4,141**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	07x	1	18.1	19,50	19,70	19,60	19,60	4	19,60	0,08	0,42	93,22
2	05	3.52	11	19,70	19,64	20,12	19,42	4	19,72	0,29	1,48	93,79
3	36x	3.51	82	20,18	19,93	19,66	19,92	4	19,92	0,21	1,07	94,75
4	18x	3.31	51.3	19,60	20,10	20,00	20,50	4	20,05	0,37	1,84	95,36
5	42	0	0	20,00	20,20	20,40	20,20	4	20,20	0,16	0,81	96,07
6	30	3.52	11.2	21,00	21,00	19,60	19,60	4	20,30	0,81	3,98	96,55
7	50x	1	17.1	20,70	20,20	20,21	20,40	4	20,38	0,23	1,15	96,92
8	33a	6.7	82	20,54	20,22	20,25	20,59	4	20,40	0,19	0,94	97,02
9	25	1	17	20,40	20,50	20,10	20,90	4	20,48	0,33	1,61	97,38
10	02	9.1	18.2	20,43	20,59	20,35	20,57	4	20,49	0,11	0,56	97,43
11	28x	3.31	51.3	20,71	20,40	20,48	20,51	4	20,53	0,13	0,64	97,62
12	20x	0	15.2	20,51	20,56	20,59	20,50	4	20,54	0,04	0,21	97,69
13	78	1	17.4	20,40	20,60	20,68	20,57	4	20,56	0,12	0,57	97,80
14	03x	1	15.2	20,51	20,16	20,93	20,78	4	20,60	0,34	1,64	97,95
15	64	3.51	11	20,64	20,76	20,58	20,46	4	20,61	0,12	0,61	98,02
16	72	3.50	11.3	21,01	20,77	20,19	20,56	4	20,63	0,35	1,68	98,13
17	39x	1	12.3	20,20	21,10	20,70	20,70	4	20,68	0,37	1,78	98,33
18	13x	1	17.1	20,73	20,73	20,73	20,62	4	20,70	0,06	0,27	98,46
19	38a	3.50	11	20,70	20,60	20,80	20,80	4	20,73	0,10	0,46	98,57
20	43x	1	15.2	20,80	20,80	20,80	20,80	4	20,80	0,00	0,00	98,93
21	46	1	17.2	20,98	20,91	20,85	20,69	4	20,86	0,12	0,59	99,20
22	73	3.50	11.2	20,86	20,75	20,86	20,96	4	20,86	0,09	0,41	99,20
23	52	7	18.1	20,97	21,05	20,68	20,86	4	20,89	0,16	0,77	99,35
24	60	1	12.3	20,91	20,93	20,93	20,90	4	20,92	0,01	0,07	99,49
25	17x	1	17.2	20,90	21,00	20,90	20,90	4	20,93	0,05	0,24	99,52
26	19x	1	15.1	21,18	21,12	20,99	20,95	4	21,06	0,11	0,51	100,16
27	49	1	15.4	21,06	21,18	21,08	20,96	4	21,07	0,09	0,43	100,21
28	29x	1	15.3	21,13	21,23	21,09	20,89	4	21,09	0,14	0,68	100,28
29	15	1	17	21,10	21,10	20,90	21,30	4	21,10	0,16	0,77	100,35
30	79	3.3	11.2	21,11	21,11	21,10	21,12	4	21,11	0,01	0,04	100,40
31	01x	1	17.1	21,40	21,10	21,30	21,00	4	21,20	0,18	0,86	100,83
32	38x	1	15.3	21,40	21,20	21,20	21,20	4	21,25	0,10	0,47	101,07
33	37	1	15.4	21,15	21,18	21,37	21,35	4	21,26	0,11	0,53	101,13
34	56	1	17.2	21,30	21,30	21,40	21,10	4	21,28	0,13	0,59	101,19
35	66	1	18.1	21,40	21,20	21,20	21,40	4	21,30	0,12	0,54	101,30
36	77	1	17.1	21,16	21,26	21,41	21,40	4	21,31	0,12	0,56	101,34
37	08	1	17.1	21,30	21,20	21,40	21,40	4	21,33	0,10	0,45	101,42
38	23x	1	17.4	21,40	21,10	21,30	21,50	4	21,33	0,17	0,80	101,42
39	48x	1	15.3	21,33	21,38	21,23	21,50	4	21,36	0,11	0,53	101,59
40	12x	1	17.1	21,44	21,43	21,53	21,31	4	21,43	0,09	0,42	101,91
41	47x	1	15.4	21,66	21,78	21,68	21,72	4	21,71	0,05	0,24	103,25
42	74x	1	17.2	21,62	21,92	21,75	21,66	4	21,74	0,13	0,61	103,39
43	09	3.51	11.2	21,50	21,70	21,90	21,90	4	21,75	0,19	0,88	103,44
44	04a	1	15.2	21,70	21,79	21,66	21,88	4	21,76	0,10	0,45	103,48
45	32	1	19	21,90	21,99	21,87	21,95	4	21,93	0,05	0,24	104,29
46	11	3.52	11.1	22,24	22,03	21,90	22,06	4	22,06	0,14	0,64	104,91
47	04x	1	12.1	22,36	22,34	22,21	22,61	4	22,38	0,17	0,75	106,44
48	61x	1	17	21,37	23,58	24,59	22,61	4	23,04	1,37	5,97	109,57
49	44x	1	15.5	23,10	23,00	22,70	23,60	4	23,10	0,37	1,62	109,87
50												
51												
52												
53												
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	N	Mean	SI	VI
all labs	196	**21,03**	**0,187**	**0,891**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
49	**0,723**	**3,441**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: N **Sample: 4** Dimension: mg/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	05	3.52	11	*21,53*	*21,38a*	*21,52*	*21,52*	0	*21,52*	b	*	0,01	0,03	89,87
2	32	1	19	22,60	22,75	22,73	22,69	4	22,69			0,07	0,29	94,75
3	78	1	17.4	21,78	22,44	23,30	23,70	4	22,81			0,86	3,78	95,22
4	33a	6.7	82	22,91	23,15	23,12	22,92	4	23,03			0,13	0,56	96,14
5	36x	3.51	82	23,11	23,08	23,07	23,08	4	23,09			0,02	0,08	96,39
6	50x	1	17.1	23,25	22,95	23,14	23,19	4	23,13			0,13	0,56	96,59
7	39x	1	12.3	23,20	23,30	23,20	23,20	4	23,23			0,05	0,22	96,97
8	72	3.50	11.3	23,52	23,05	23,21	23,14	4	23,23			0,20	0,88	97,00
9	28x	3.31	51.3	23,40	23,37	23,09	23,21	4	23,27			0,14	0,62	97,15
10	64	3.51	11	23,30	23,08	23,26	23,48	4	23,28			0,16	0,70	97,20
11	38a	3.50	11	23,30	23,60	23,30	23,30	4	23,38			0,15	0,64	97,60
12	30	3.52	11.2	23,80	23,50	23,10	23,10	4	23,38			0,34	1,46	97,60
13	52	7	18.1	23,20	23,39	23,97	23,04	4	23,40			0,41	1,74	97,70
14	03x	1	15.2	23,48	23,45	23,21	23,46	4	23,40			0,13	0,54	97,70
15	07x	1	18.1	23,40	23,50	23,30	23,70	4	23,48			0,17	0,73	98,02
16	23x	1	17.4	23,60	22,60	24,10	23,70	4	23,50			0,64	2,71	98,12
17	46	1	17.2	23,59	23,92	23,25	23,26	4	23,51			0,32	1,36	98,14
18	29x	1	15.3	24,53	*21,47a*	23,81	24,27	3	24,20			0,36	1,51	101,06
19	18x	3.31	51.3	23,20	23,40	23,60	24,00	4	23,55			0,34	1,45	98,33
20	42	0	0	24,30	23,80	23,40	22,80	4	23,58			0,63	2,69	98,44
21	73	3.50	11.2	23,59	23,38	23,70	23,70	4	23,59			0,15	0,64	98,51
22	13x	1	17.1	23,73	23,83	23,73	23,30	4	23,65			0,24	1,00	98,74
23	17x	1	17.2	23,90	23,80	23,60	23,80	4	23,78			0,13	0,53	99,27
24	43x	1	15.2	24,00	23,80	23,60	23,70	4	23,78			0,17	0,72	99,27
25	02	9.1	18.2	22,85	24,93	22,95	24,56	4	23,82			1,08	4,52	99,47
26	20x	0	15.2	23,94	23,87	23,83	23,89	4	23,88			0,05	0,19	99,72
27	49	1	15.4	23,94	24,38	23,76	23,59	4	23,92			0,34	1,42	99,87
28	01x	1	17.1	24,30	24,10	23,70	24,10	4	24,05			0,25	1,05	100,42
29	60	1	12.3	24,14	24,30	24,02	23,85	4	24,08			0,19	0,79	100,53
30	38x	1	15.3	24,00	23,80	24,40	24,20	4	24,10			0,26	1,07	100,63
31	25	1	17	24,20	24,40	24,00	23,90	4	24,13			0,22	0,92	100,73
32	19x	1	15.1	24,28	23,76	24,37	24,15	4	24,14			0,27	1,11	100,79
33	77	1	17.1	23,82	24,38	24,33	24,44	4	24,24			0,29	1,18	101,22
34	66	1	18.1	25,00	24,40	24,00	23,70	4	24,28			0,56	2,32	101,36
35	79	3.3	11.2	24,25	24,43	24,24	24,37	4	24,32			0,09	0,38	101,56
36	08	1	17.1	24,50	24,70	24,00	24,10	4	24,33			0,33	1,36	101,57
37	37	1	15.4	24,46	24,17	24,40	24,36	4	24,35			0,13	0,51	101,66
38	56	1	17.2	24,50	24,30	24,40	24,40	4	24,40			0,08	0,33	101,88
39	47x	1	15.4	24,47	24,40	24,44	24,59	4	24,48			0,08	0,35	102,20
40	12x	1	17.1	24,60	24,53	24,61	24,70	4	24,61			0,07	0,28	102,76
41	44x	1	15.5	24,00	24,50	24,20	25,90	4	24,65			0,86	3,48	102,92
42	04x	1	12.1	24,72	24,58	24,74	24,78	4	24,71			0,09	0,35	103,15
43	09	3.51	11.2	24,80	24,90	24,90	25,10	4	24,93			0,13	0,50	104,07
44	04a	1	15.2	24,79	24,73	25,29	24,97	4	24,95			0,25	1,01	104,16
45	74x	1	17.2	24,60	25,57	25,52	24,96	4	25,16			0,47	1,85	105,06
46	15	1	17	25,00	25,10	24,50	26,60	4	25,30			0,91	3,58	105,64
47	48x	1	15.3	24,85	25,44	25,46	25,52	4	25,32			0,31	1,24	105,71
48	11	3.52	11.1	26,05	25,77	25,53	25,41	4	25,69			0,28	1,10	107,27
49	61x	1	17	*27,39*	*28,54*	*28,15*	*27,90*	0	*28,00*	b	*	0,48	1,72	116,89
50														
51														
52														
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	N	Mean	SI	VI
all labs	187	**23,95**	**0,288**	**1,201**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
47	**0,700**	**2,922**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	28x	6	61.2	0,84	0,76	0,83	0,79	4	0,81	*	0,04	4,59	75,90
2	39x	5.5	31	0,90	0,90	0,89	0,86	4	0,89	*	0,02	2,13	83,68
3	79	3.3	31	0,91	0,91	0,88	0,92	4	0,91		0,02	1,71	85,40
4	76	5.5	31	0,92	0,92	0,96	0,83	4	0,91		0,05	5,87	85,59
5	36x	5.5	31	0,96	0,88	0,94	0,91	4	0,92		0,04	3,79	86,98
6	08	3.3	31	0,94	0,92	0,93	0,95	4	0,93		0,02	1,61	88,02
7	25	1	17	0,93	0,95	0,90	0,99	4	0,94		0,04	4,01	88,86
8	19x	6	15.1	0,88	0,91	0,98	1,01	4	0,95		0,06	6,38	89,10
9	07x	5.5	31	0,96	0,96	0,95	0,96	4	0,96		0,00	0,39	90,35
10	23x	5.1	31	0,97	0,97	0,97	0,97	4	0,97		0,00	0,31	91,48
11	64	5.1	31	1,01	0,95	0,97	0,97	4	0,97		0,03	2,59	91,78
12	01x	1	16.1	0,94	1,01	0,96	1,00	4	0,98		0,03	3,38	92,16
13	50x	4.1	31	0,99	0,98	1,00	1,01	4	1,00		0,01	1,48	93,88
14	20x	0	14.1	1,01	1,02	1,01	1,01	4	1,01		0,01	0,49	95,46
15	44x	4.1	31	1,03	1,01	0,98	1,03	4	1,01		0,02	2,33	95,46
16	47x	4.1	31	1,02	1,02	1,02	1,03	4	1,02		0,01	0,49	96,41
17	52	3.1	31	0,98	1,07	1,02	1,03	4	1,03		0,04	3,61	96,64
18	61x	1	17	1,19	1,00	0,89	1,03	4	1,03		0,12	12,06	96,88
19	66	5.5	31	1,02	1,03	1,03	1,05	4	1,03		0,01	1,22	97,35
20	04a	9.1	42	1,15	1,11	0,98	0,95	4	1,05		0,10	9,30	98,76
21	26	5.5	35	0,98	1,14	1,06	1,02	4	1,05		0,07	6,51	99,00
22	43x	4.1	31	1,04	1,06	1,05	1,05	4	1,05		0,01	0,78	99,00
23	02	5.3	31	1,10	1,10	1,00	1,00	4	1,05		0,06	5,50	99,00
24	37a	9.1	42	1,15	1,02	1,08	0,95	4	1,05		0,09	8,12	99,00
25	48x	4.1	31	1,05	1,04	1,07	1,05	4	1,05		0,01	1,09	99,19
26	03x	1	14.1	1,02	1,06	1,09	1,06	4	1,06		0,03	2,72	99,71
27	42	4.1	32	1,06	1,06	1,06	1,06	4	1,06		0,00	0,26	99,85
28	77	1	17.1	1,03	1,08	1,08	1,08	4	1,07		0,02	2,34	100,65
29	49	4.1	31	1,08	1,06	1,06	1,07	4	1,07		0,01	0,90	100,65
30	73	5	31	1,07	1,08	1,08	1,10	4	1,08		0,01	1,16	102,06
31	78	5.5	31	1,07	1,09	1,09	1,12	4	1,09		0,02	1,89	103,01
32	17x	1	17.2	1,05	1,09	1,12	1,11	4	1,09		0,03	2,83	103,01
33	38a	9.1	42	1,11	1,10	1,10	1,10	4	1,10		0,01	0,45	103,95
34	12x	5.1	31	0,99	1,15	1,17	1,14	4	1,11		0,08	7,54	104,75
35	37	5.5	31	1,15	1,10	1,08	1,12	4	1,11		0,03	2,68	104,89
36	60	3.3	31	1,13	1,12	1,10	1,13	4	1,12		0,01	1,14	105,32
37	11	5.1	31	1,16	1,13	1,13	1,14	4	1,14		0,01	1,24	107,49
38	56	1	17.2	1,12	1,14	1,15	1,14	4	1,14		0,01	1,12	107,49
39	32	5.7	31	1,17	1,11	1,14	1,14	4	1,14		0,02	2,19	107,67
40	09	5.5	31	1,12	1,15	1,16	1,16	4	1,15		0,02	1,46	108,19
41	29x	3.3	31	1,16	1,16	1,15	1,15	4	1,16		0,01	0,61	108,97
42	38x	5.5	31	1,11	1,18	1,21	1,17	4	1,17		0,04	3,59	110,08
43	13x	1	17.1	1,15	1,25	1,16	1,22	4	1,20		0,05	4,01	112,67
44	04x	9.1	41	1,30	1,31	1,32	1,32	4	1,31	*	0,01	0,73	123,75
45	46	1	17.2	*1,55a*	1,35	1,32	1,29	3	1,32	*	0,03	2,27	124,46
46	74x	1	17.2	*1,52a*	1,36	1,33	1,32	3	1,34	*	0,02	1,56	126,03
47	30	1	16.1	1,40	1,41	1,41	1,41	4	1,41	*	0,00	0,31	132,66
48													
49													
50													
51													
52													
53													
54													
55													

	N	Mean	SI	VI
all labs	186	**1,06**	**0,029**	**2,768**
15	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
47	**0,120**	**11,239**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	61x	1	17	0,62	0,81	0,77	0,61	4	0,70	*	0,10	14,58	79,75
2	39x	5.5	31	0,69	0,71	0,70	0,74	4	0,71	*	0,02	3,04	80,60
3	79	3.3	31	0,74	0,74	0,72	0,74	4	0,74	*	0,01	1,54	83,55
4	08	3.3	31	0,77	0,75	0,74	0,76	4	0,75		0,01	1,96	85,51
5	76	5.5	31	0,77	0,75	0,73	0,78	4	0,76		0,02	3,18	85,82
6	28x	6	61.2	0,71	0,85	0,61	0,94	4	0,78		0,15	18,83	88,26
7	23x	5.1	31	0,78	0,80	0,79	0,80	4	0,79		0,01	1,50	89,63
8	07x	5.5	31	0,80	0,80	0,79	0,80	4	0,80		0,00	0,53	90,53
9	52	3.1	31	0,83	0,78	0,84	0,80	4	0,81		0,03	3,39	92,24
10	19x	6	15.1	0,79	0,74	0,90	0,87	4	0,83		0,07	8,88	93,66
11	01x	1	16.1	0,79	0,83	0,84	0,85	4	0,83		0,03	3,18	93,94
12	64	5.1	31	0,79	0,79	0,91	0,83	4	0,83		0,06	6,77	94,09
13	66	5.5	31	0,83	0,84	0,83	0,83	4	0,83		0,00	0,20	94,65
14	50x	4.1	31	0,83	0,82	0,84	0,87	4	0,84		0,02	2,55	95,19
15	26	5.5	35	0,79	0,88	0,82	0,88	4	0,84		0,04	5,13	95,58
16	47x	4.1	31	0,84	0,84	0,86	0,84	4	0,85		0,01	1,18	95,93
17	44x	4.1	31	0,84	0,83	0,85	0,86	4	0,85		0,01	1,53	95,93
18	02	5.3	31	0,90	0,80	0,80	0,90	4	0,85		0,06	6,79	96,49
19	48x	4.1	31	0,83	0,88	0,84	0,87	4	0,86		0,02	2,72	97,14
20	04a	9.1	42	0,90	0,93	0,80	0,81	4	0,86		0,06	7,54	97,63
21	03x	1	14.1	0,89	0,82	0,88	0,86	4	0,86		0,03	3,67	97,71
22	43x	4.1	31	0,87	0,87	0,87	0,87	4	0,87		0,00	0,00	98,76
23	20x	0	14.1	0,87	0,88	0,88	0,87	4	0,88		0,01	0,66	99,33
24	49	4.1	31	0,88	0,87	0,89	0,86	4	0,88		0,01	1,48	99,33
25	42	4.1	32	0,88	0,88	0,88	0,88	4	0,88		0,00	0,33	99,73
26	38a	9.1	42	0,89	0,90	0,90	0,89	4	0,90		0,01	0,65	101,60
27	73	5	31	0,90	0,90	0,90	0,89	4	0,90		0,01	0,59	101,66
28	25	1	17	0,90	0,90	0,88	0,90	4	0,90		0,01	1,21	101,72
29	78	5.5	31	0,89	0,89	0,90	0,91	4	0,90		0,01	1,40	101,72
30	37	5.5	31	0,95	0,90	0,90	0,94	4	0,92		0,03	2,85	104,72
31	56	1	17.2	0,93	0,95	0,88	0,95	4	0,93		0,03	3,67	105,06
32	77	1	17.1	0,91	0,92	0,95	0,93	4	0,93		0,02	1,84	105,29
33	12x	5.1	31	0,93	0,95	0,93	0,95	4	0,94		0,01	1,23	106,62
34	60	3.3	31	0,97	0,90	0,94	0,96	4	0,94		0,03	3,63	106,85
35	17x	1	17.2	0,96	0,94	0,94	0,95	4	0,95		0,01	0,86	107,50
36	38x	5.5	31	0,94	0,94	0,94	0,97	4	0,95		0,01	1,58	107,56
37	09	5.5	31	0,95	0,94	0,94	0,96	4	0,95		0,01	1,07	107,79
38	29x	3.3	31	0,96	0,95	0,93	0,95	4	0,95		0,01	1,27	107,80
39	11	5.1	31	0,95	0,95	0,95	0,99	4	0,96		0,02	2,08	109,01
40	32	5.7	31	0,95	0,96	0,99	0,97	4	0,97		0,02	1,74	109,55
41	37a	9.1	42	0,98	0,98	0,95	1,01	4	0,98		0,02	2,50	111,25
42	36x	5.5	31	1,02	0,98	1,00	1,01	4	1,00		0,02	1,70	113,81
43	46	1	17.2	1,08	1,10	1,07	1,07	4	1,08	*	0,01	1,31	122,60
44	04x	9.1	41	1,07	1,09	1,09	1,09	4	1,09	*	0,01	0,92	123,17
45	13x	1	17.1	1,12	1,14	1,02	1,08	4	1,09	*	0,05	4,85	123,74
46	30	1	16.1	*1,20*	*1,19*	*1,20*	*1,20*	0	*1,20*	b *	0,00	0,40	135,74
47	74x	1	17.2	*1,26*	*1,23*	*1,21*	*1,19*	0	*1,22*	b *	0,03	2,44	138,78
48													
49													
50													
51													
52													
53													
54													
55													

	N	Mean	SI	VI
all labs	180	**0,88**	**0,026**	**2,942**
15	% from the mean			

L	SR	VR
45	**0,090**	**10,255**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: S **Sample: 3** Dimension: 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	36x	5.5	31	*2,25*	*2,44*	*2,31*	*2,36*	0	*2,34*	b	*	0,08	3,44	63,59
2	20x	0	14.1	2,90	*2,89a*	2,90	2,90	3	2,90		*	0,00	0,00	78,80
3	79	3.3	31	2,89	2,96	3,00	3,00	4	2,96		*	0,06	1,87	80,52
4	77	1	17.1	2,93	3,09	3,24	3,00	4	3,07		*	0,13	4,37	83,29
5	64	5.1	31	3,28	2,99	3,01	3,22	4	3,12		*	0,15	4,67	84,87
6	30	1	16.1	3,14	3,14	3,15	3,14	4	3,14			0,00	0,13	85,35
7	13x	1	17.1	3,30	3,15	3,15	3,13	4	3,18			0,08	2,48	86,48
8	61x	1	17	3,37	3,38	3,33	3,22	4	3,33			0,07	2,20	90,35
9	76	5.5	31	3,46	3,40	3,36	3,28	4	3,37			0,08	2,23	91,68
10	03x	1	14.1	3,41	3,39	3,33	3,39	4	3,38			0,03	1,02	91,85
11	08	3.3	31	3,34	3,41	3,42	3,43	4	3,40			0,04	1,20	92,39
12	39x	5.5	31	3,49	3,44	3,40	3,41	4	3,44			0,04	1,18	93,34
13	07x	5.5	31	3,59	3,58	3,59	3,61	4	3,59			0,01	0,35	97,62
14	50x	4.1	31	3,60	3,54	3,61	3,67	4	3,61			0,05	1,39	97,99
15	38a	9.1	42	3,62	3,63	3,62	3,62	4	3,62			0,00	0,14	98,44
16	01x	1	16.1	3,77	3,65	3,52	3,59	4	3,63			0,11	2,92	98,71
17	44x	4.1	31	3,67	3,69	3,60	3,62	4	3,65			0,04	1,15	99,05
18	66	5.5	31	3,72	3,65	3,65	3,62	4	3,66			0,04	1,16	99,46
19	25	1	17	3,64	3,48	3,67	3,85	4	3,66			0,15	4,14	99,46
20	74x	1	17.2	3,12	3,81	3,77	4,00	4	3,68			0,38	10,43	99,86
21	23x	5.1	31	3,61	3,70	3,71	3,69	4	3,68			0,04	1,16	99,93
22	04a	9.1	42	3,98	3,94	3,46	3,42	4	3,70			0,30	8,14	100,54
23	17x	1	17.2	3,53	3,79	3,70	3,78	4	3,70			0,12	3,25	100,54
24	37a	9.1	42	3,63	3,81	3,61	3,79	4	3,71			0,10	2,82	100,82
25	26	5.5	35	3,70	3,71	3,70	3,84	4	3,74			0,07	1,83	101,56
26	11	5.1	31	3,73	3,79	3,76	3,72	4	3,75			0,03	0,84	101,90
27	52	3.1	31	3,80	3,71	3,86	3,69	4	3,77			0,08	2,11	102,31
28	43x	4.1	31	3,76	3,74	3,80	3,77	4	3,77			0,02	0,66	102,38
29	47x	4.1	31	3,83	3,82	3,78	3,73	4	3,79			0,05	1,20	102,99
30	32	5.7	31	3,82	3,82	3,79	3,81	4	3,81			0,02	0,42	103,55
31	56	1	17.2	3,77	3,95	3,68	3,86	4	3,81			0,12	3,02	103,63
32	42	4.1	32	3,83	3,86	3,75	3,82	4	3,82			0,05	1,21	103,71
33	49	4.1	31	3,79	3,85	3,80	3,83	4	3,82			0,03	0,72	103,74
34	04x	9.1	41	3,82	3,81	3,83	3,83	4	3,82			0,01	0,25	103,87
35	37	5.5	31	3,88	3,81	3,83	3,79	4	3,83			0,04	1,01	104,01
36	46	1	17.2	3,63	3,54	4,23	4,05	4	3,86			0,33	8,56	104,96
37	38x	5.5	31	3,86	3,87	3,85	3,87	4	3,86			0,01	0,25	104,96
38	48x	4.1	31	3,93	3,96	3,90	3,93	4	3,93			0,02	0,56	106,80
39	02	5.3	31	3,90	3,90	4,10	4,10	4	4,00			0,12	2,89	108,70
40	73	5	31	3,99	4,01	4,07	3,96	4	4,01			0,05	1,16	108,90
41	78	5.5	31	3,98	4,05	3,95	4,11	4	4,02			0,07	1,79	109,31
42	09	5.5	31	3,99	4,02	4,10	4,13	4	4,06			0,07	1,61	110,37
43	60	3.3	31	4,01	4,10	4,10	4,10	4	4,07			0,05	1,12	110,71
44	19x	6	15.1	3,84	4,29	4,31	3,93	4	4,09			0,24	5,93	111,21
45	29x	3.3	31	4,25	4,31	4,15	4,21	4	4,23			0,07	1,60	114,99
46	12x	5.1	31	4,17	4,40	4,43	4,48	4	4,37		*	0,14	3,15	118,78
47	28x	6	61.2	*4,86*	*4,71*	*4,82*	*4,70*	0	*4,77*	b	*	0,08	1,67	129,69
48														
49														
50														
51														
52														
53														
54														
55														

	N	Mean	SI	VI
all labs	179	**3,68**	**0,082**	**2,236**
15	% from the mean			
	L		SR	VR
	45		**0,326**	**8,870**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: S **Sample: 4** Dimension: 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	36x	5.5	31	1,98	1,89	1,87	1,93	4	1,92	*	0,05	2,53	71,13
2	17x	1	17.2	2,14	2,04	2,14	2,11	4	2,11	*	0,05	2,24	78,18
3	77	1	17.1	2,10	2,23	2,17	2,26	4	2,19	*	0,07	3,23	81,24
4	79	3.3	31	2,18	2,26	2,25	2,24	4	2,24	*	0,04	1,58	82,92
5	39x	5.5	31	2,32	2,30	2,36	2,33	4	2,33		0,03	1,07	86,34
6	20x	0	14.1	2,36	2,40	2,40	2,39	4	2,39		0,02	0,79	88,56
7	76	5.5	31	2,43	2,50	2,45	2,40	4	2,44		0,04	1,63	90,63
8	07x	5.5	31	2,44	2,44	2,46	2,46	4	2,45		0,01	0,47	90,88
9	08	3.3	31	2,47	2,50	2,43	2,51	4	2,48		0,04	1,45	91,90
10	64	5.1	31	2,39	2,44	2,52	2,64	4	2,50		0,11	4,37	92,67
11	01x	1	16.1	2,47	2,51	2,49	2,57	4	2,51		0,04	1,72	93,11
12	38a	9.1	42	2,59	2,54	2,50	2,49	4	2,53		0,05	1,80	93,85
13	04a	9.1	42	2,53	2,76	2,50	2,54	4	2,58		0,12	4,63	95,80
14	50x	4.1	31	2,62	2,54	2,70	2,61	4	2,62		0,07	2,60	97,04
15	44x	4.1	31	2,60	2,63	2,59	2,67	4	2,62		0,04	1,37	97,28
16	43x	4.1	31	2,62	2,68	2,66	2,62	4	2,65		0,03	1,13	98,12
17	52	3.1	31	2,68	2,59	2,69	2,63	4	2,65		0,05	1,75	98,21
18	61x	1	17	2,75	2,65	2,85	2,42	4	2,67		0,18	6,90	98,95
19	66	5.5	31	2,66	2,67	2,69	2,67	4	2,67		0,01	0,47	99,14
20	32	5.7	31	2,67	2,70	2,76	2,71	4	2,71		0,04	1,44	100,51
21	73	5	31	2,73	2,76	2,71	2,70	4	2,73		0,03	0,97	101,08
22	60	3.3	31	2,95	2,61	2,64	2,72	4	2,73		0,15	5,62	101,20
23	13x	1	17.1	2,66	2,67	2,83	2,76	4	2,73		0,08	2,95	101,27
24	47x	4.1	31	2,73	2,77	2,75	2,71	4	2,74		0,03	0,94	101,64
25	37a	9.1	42	2,72	2,69	2,79	2,76	4	2,74		0,04	1,60	101,64
26	11	5.1	31	2,73	2,76	2,73	2,75	4	2,74		0,01	0,55	101,73
27	03x	1	14.1	2,69	2,75	2,77	2,81	4	2,76		0,05	1,81	102,20
28	30	1	16.1	2,80	2,74	2,77	2,74	4	2,76		0,03	1,00	102,45
29	38x	5.5	31	2,80	2,76	2,75	2,75	4	2,77		0,02	0,86	102,57
30	04x	9.1	41	2,78	2,77	2,76	2,77	4	2,77		0,01	0,29	102,75
31	49	4.1	31	2,73	2,80	2,75	2,80	4	2,77		0,04	1,28	102,75
32	48x	4.1	31	2,73	2,91	2,72	2,73	4	2,77		0,10	3,44	102,79
33	23x	5.1	31	3,08	2,73	2,62	2,69	4	2,78		0,21	7,40	103,21
34	37	5.5	31	2,72	2,84	2,79	2,78	4	2,78		0,05	1,77	103,22
35	42	4.1	32	2,80	2,81	2,80	2,80	4	2,80		0,01	0,25	103,97
36	25	1	17	2,83	2,82	2,79	2,85	4	2,82		0,02	0,89	104,70
37	78	5.5	31	2,87	2,94	3,00	2,84	4	2,91		0,07	2,47	108,04
38	09	5.5	31	2,92	2,90	2,90	2,95	4	2,92		0,02	0,71	108,20
39	56	1	17.2	2,99	2,90	2,94	2,90	4	2,93		0,04	1,39	108,83
40	46	1	17.2	2,83	3,18	2,79	2,97	4	2,94		0,18	5,99	109,15
41	29x	3.3	31	2,99	2,92	2,95	2,92	4	2,94		0,03	1,08	109,20
42	26	5.5	35	2,89	2,83	3,00	3,07	4	2,95		0,11	3,66	109,34
43	02	5.3	31	3,00	3,00	2,90	2,90	4	2,95		0,06	1,96	109,43
44	19x	6	15.1	2,97	3,08	3,21	3,02	4	3,07		0,10	3,37	113,88
45	74x	1	17.2	3,21	3,17	3,19	3,04	4	3,15	*	0,08	2,43	116,94
46	12x	5.1	31	3,11	3,25	3,22	3,18	4	3,19	*	0,06	1,82	118,31
47	28x	6	61.2	3,39	3,32	3,28	3,28	4	3,32	*	0,05	1,56	123,06
48													
49													
50													
51													
52													
53													
54													
55													

	N	Mean	SI	VI
all labs	188	**2,70**	**0,058**	**2,159**
15	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
47	**0,273**	**10,110**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: P **Sample: 1** Dimension: 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	79	3.3	53	*0,87*	*0,92*	*0,93*	*1,02*	0	*0,93*	b	*	0,06	6,36	58,50
2	15	5.1	53.1	1,46	1,33	1,36	1,34	4	1,37		*	0,06	4,35	85,89
3	36	5.5	31	1,39	1,47	1,34	1,37	4	1,39		*	0,06	3,99	87,15
4	33a	5.1	50	1,41	1,42	1,51	1,37	4	1,43		*	0,06	4,14	89,34
5	01x	3.21	50	1,54	1,50	1,54	*1,17a*	3	1,53			0,02	1,51	95,54
6	39x	5.5	31	1,47	1,43	1,49	1,43	4	1,46			0,03	2,06	91,06
7	30	2.3	50	1,50	1,45	1,44	1,45	4	1,46			0,03	1,81	91,28
8	20x	5.1	31	1,45	1,48	1,49	1,46	4	1,47			0,02	1,24	92,00
9	77	5.1	31	1,48	1,44	1,51	1,50	4	1,48			0,03	2,09	92,78
10	44x	4.1	31	1,56	1,52	1,48	1,54	4	1,53			0,03	2,24	95,44
11	32	5.7	31	1,51	1,56	1,53	1,53	4	1,53			0,02	1,47	95,92
12	64	6.4	53	1,55	1,53	1,56	1,52	4	1,54			0,02	1,19	96,38
13	08	6.3	31	1,52	1,55	1,56	1,54	4	1,54			0,02	1,11	96,53
14	11	5.1	31	1,55	1,55	1,57	1,56	4	1,56			0,01	0,61	97,47
15	03x	3.10	31	1,59	1,55	1,54	1,58	4	1,57			0,02	1,52	97,94
16	50x	4.1	31	1,55	1,54	1,56	1,61	4	1,57			0,03	1,90	97,99
17	78	5.5	31	1,55	1,56	1,57	1,59	4	1,57			0,02	1,09	98,10
18	18x	3.31	31	1,58	1,61	1,57	1,53	4	1,57			0,03	2,12	98,49
19	13x	5.3	53.1	1,58	1,57	1,57	1,58	4	1,58			0,01	0,37	98,57
20	43x	4.1	32	1,57	1,59	1,58	1,57	4	1,58			0,01	0,61	98,72
21	12x	5.1	31	1,47	1,62	1,64	1,62	4	1,59			0,08	4,95	99,32
22	74x	5.5	53.1	1,54	1,60	1,59	1,62	4	1,59			0,03	2,14	99,35
23	72	6.5	53.1	1,59	1,57	1,62	1,58	4	1,59			0,02	1,36	99,51
24	61x	4.1	53.1	1,60	1,58	1,59	1,59	4	1,59			0,01	0,51	99,51
25	05	6.5	53.1	1,62	1,55	1,60	1,60	4	1,59			0,03	1,78	99,58
26	26	5.5	35	1,46	1,42	1,75	1,78	4	1,60			0,19	11,78	100,29
27	28x	3.31	53.3	1,60	1,61	1,61	1,60	4	1,61			0,01	0,36	100,45
28	17x	5.5	31	1,60	1,61	1,61	1,60	4	1,61			0,01	0,36	100,45
29	25	5.1	31	1,63	1,58	1,65	1,57	4	1,61			0,04	2,41	100,55
30	47x	4.1	31	1,61	1,60	1,61	1,61	4	1,61			0,00	0,31	100,60
31	60	3.3	31	1,64	1,59	1,59	1,62	4	1,61			0,02	1,48	100,70
32	37	5.5	31	1,63	1,60	1,57	1,65	4	1,61			0,04	2,17	100,91
33	76	5.5	31	1,58	1,63	1,64	1,60	4	1,61			0,03	1,57	100,95
34	49	4.1	31	1,62	1,61	1,60	1,63	4	1,62			0,01	0,80	101,07
35	23x	5.1	31	1,60	1,63	1,58	1,66	4	1,62			0,04	2,18	101,26
36	56	5.5	31	1,63	1,63	1,63	1,63	4	1,63			0,00	0,05	101,82
37	38x	4.5	31	1,60	1,61	1,62	1,71	4	1,64			0,05	3,10	102,32
38	07x	5.5	31	1,64	1,63	1,63	1,65	4	1,64			0,01	0,58	102,48
39	42	4.1	32	1,65	1,64	1,65	1,65	4	1,65			0,00	0,25	103,03
40	66	5.5	31	1,63	1,64	1,65	1,67	4	1,65			0,02	1,04	103,11
41	46	5.1	31	1,61	1,65	1,77	1,64	4	1,67			0,07	4,22	104,36
42	52	3.1	31	1,67	1,68	1,65	1,70	4	1,68			0,02	1,24	104,83
43	48x	4.1	31	1,72	1,65	1,67	1,67	4	1,68			0,03	1,79	104,89
44	73	5	31	1,70	1,70	1,70	1,69	4	1,70			0,01	0,29	106,23
45	02	5.3	31	1,70	1,70	1,70	1,70	4	1,70			0,00	0,00	106,39
46	04a	9.1	42	1,88	1,83	1,57	1,54	4	1,71			0,17	10,25	106,70
47	29x	3.3	31	1,75	1,74	1,73	1,73	4	1,74			0,01	0,51	108,69
48	38a	9.1	42	1,76	1,75	1,75	1,74	4	1,75			0,01	0,47	109,52
49	37a	9.1	42	1,78	1,70	1,72	1,80	4	1,75			0,05	2,72	109,52
50	09	5.5	31	1,72	1,76	1,75	1,77	4	1,75			0,02	1,10	109,55
51	04x	9.1	41	1,82	1,83	1,83	1,83	4	1,83		*	0,00	0,27	114,37
52														
53														
54														
55														

	N	Mean	SI	VI
all labs	199	**1,60**	**0,031**	**1,932**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
50	**0,093**	**5,792**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: P **Sample: 2** Dimension: 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	79	3.3	53	*0,62*	*0,52*	*0,57*	*0,60*	0	*0,58*	b	*	0,04	7,63	49,19
2	15	5.1	53.1	0,98	1,00	1,01	0,94	4	0,98		*	0,03	3,15	83,69
3	36	5.5	31	1,00	0,99	1,01	0,99	4	1,00		*	0,01	0,96	84,97
4	20x	5.1	31	1,02	1,03	1,03	1,02	4	1,03		*	0,01	0,56	87,32
5	39x	5.5	31	1,05	1,03	1,05	1,02	4	1,04		*	0,01	1,45	88,38
6	30	2.3	50	1,18	0,95	1,06	1,01	4	1,05		*	0,10	9,07	89,59
7	77	5.1	31	1,08	1,08	1,10	1,09	4	1,09			0,01	0,88	92,64
8	08	6.3	31	1,10	1,12	1,11	1,08	4	1,10			0,02	1,55	93,92
9	33a	5.1	50	1,12	1,11	1,10	1,14	4	1,12			0,02	1,53	95,19
10	05	6.5	53.1	1,22	1,06	1,10	1,12	4	1,13			0,07	6,05	95,83
11	01x	3.21	50	1,17	0,95	1,21	1,17	4	1,13			0,12	10,50	95,83
12	18x	3.31	31	1,14	1,13	1,15	1,12	4	1,13			0,01	1,18	96,32
13	13x	5.3	53.1	1,13	1,14	1,13	1,13	4	1,13			0,00	0,44	96,47
14	78	5.5	31	1,12	1,16	1,14	1,15	4	1,14			0,02	1,49	97,32
15	11	5.1	31	1,14	1,14	1,15	1,14	4	1,14			0,01	0,44	97,32
16	64	6.4	53	1,14	1,12	1,16	1,16	4	1,15			0,02	1,67	97,54
17	43x	4.1	32	1,15	1,13	1,16	1,15	4	1,15			0,01	1,10	97,75
18	76	5.5	31	1,15	1,18	1,12	1,14	4	1,15			0,03	2,22	97,77
19	44x	4.1	31	1,14	1,13	1,17	1,18	4	1,16			0,02	2,06	98,39
20	50x	4.1	31	1,14	1,14	1,16	1,19	4	1,16			0,02	2,00	98,41
21	32	5.7	31	1,13	1,17	1,19	1,16	4	1,16			0,03	2,23	98,99
22	23x	5.1	31	1,17	1,18	1,13	1,18	4	1,16			0,02	1,85	99,01
23	17x	5.5	31	1,15	1,18	1,16	1,16	4	1,16			0,01	1,08	99,03
24	66	5.5	31	1,17	1,16	1,16	1,17	4	1,17			0,01	0,50	99,24
25	74x	5.5	53.1	1,19	1,16	1,15	1,16	4	1,17			0,02	1,49	99,24
26	03x	3.10	31	1,15	1,18	1,17	1,16	4	1,17			0,01	1,11	99,24
27	72	6.5	53.1	1,16	1,17	1,19	1,18	4	1,18			0,01	1,10	100,09
28	12x	5.1	31	1,18	1,19	1,17	1,16	4	1,18			0,01	0,91	100,11
29	49	4.1	31	1,18	1,18	1,19	1,16	4	1,18			0,01	1,07	100,31
30	28x	3.31	53.3	1,19	1,18	1,17	1,18	4	1,18			0,01	0,69	100,52
31	61x	4.1	53.1	1,19	1,18	1,17	1,18	4	1,18			0,01	0,69	100,52
32	56	5.5	31	1,19	1,17	1,19	1,21	4	1,19			0,02	1,32	101,26
33	25	5.1	31	1,14	1,21	1,21	1,20	4	1,19			0,03	2,77	101,46
34	07x	5.5	31	1,19	1,20	1,19	1,19	4	1,19			0,01	0,42	101,58
35	47x	4.1	31	1,20	1,19	1,20	1,20	4	1,20			0,00	0,42	102,01
36	42	4.1	32	1,20	1,20	1,20	1,20	4	1,20			0,00	0,14	102,12
37	60	3.3	31	1,18	1,24	1,25	1,18	4	1,21			0,04	3,20	103,31
38	26	5.5	35	1,26	1,04	1,26	1,31	4	1,22			0,12	9,91	103,71
39	37	5.5	31	1,26	1,23	1,21	1,21	4	1,23			0,02	1,92	104,57
40	52	3.1	31	1,25	1,22	1,23	1,22	4	1,23			0,01	1,15	104,78
41	48x	4.1	31	1,22	1,25	1,22	1,24	4	1,23			0,02	1,46	104,86
42	73	5	31	1,25	1,23	1,24	1,23	4	1,24			0,01	0,77	105,42
43	38x	4.5	31	1,26	1,23	1,26	1,22	4	1,24			0,02	1,66	105,84
44	29x	3.3	31	1,25	1,26	1,25	1,27	4	1,26			0,01	0,42	107,10
45	04a	9.1	42	1,40	1,34	1,15	1,16	4	1,26			0,13	10,03	107,55
46	02	5.3	31	1,30	1,30	1,20	1,30	4	1,28			0,05	3,92	108,61
47	09	5.5	31	1,28	1,26	1,27	1,30	4	1,28			0,02	1,31	108,69
48	37a	9.1	42	1,35	1,24	1,32	1,21	4	1,28			0,07	5,14	109,04
49	46	5.1	31	1,27	1,27	1,26	1,36	4	1,29			0,05	3,64	109,89
50	38a	9.1	42	1,31	1,31	1,31	1,31	4	1,31		*	0,00	0,00	111,59
51	04x	9.1	41	1,34	1,35	1,37	1,37	4	1,36		*	0,01	1,10	115,64
52														
53														
54														
55														

	N	Mean	SI	VI
all labs	200	**1,17**	**0,026**	**2,235**
10	% from the mean			

L	SR	VR
50	**0,077**	**6,543**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	79	3.3	53	*0,26*	*0,216a*	*0,25*	*0,26*	0	*0,26*	b	*	0,01	2,04	26,29
2	01x	3.21	50	*1,10*	*0,70*	*0,73*	*0,81*	0	*0,84*	c	*	0,18	21,88	84,44
3	15	5.1	53.1	0,84	0,86	0,85	0,86	4	0,85		*	0,01	1,12	86,21
4	30	2.3	50	0,88	0,91	0,87	0,88	4	0,89		*	0,01	1,54	89,58
5	36	5.5	31	0,88	0,88	0,91	0,90	4	0,89			0,02	1,68	90,26
6	39x	5.5	31	0,94	0,90	0,94	0,90	4	0,92			0,02	2,51	93,04
7	33a	5.1	50	0,92	0,96	0,84	0,97	4	0,92			0,06	6,41	93,29
8	04a	9.1	42	1,00	1,01	0,84	0,84	4	0,92			0,10	10,34	93,29
9	77	5.1	31	0,92	0,92	0,94	0,95	4	0,93			0,01	1,61	94,30
10	44x	4.1	31	0,96	0,95	0,93	0,94	4	0,95			0,01	1,37	95,57
11	50x	4.1	31	0,94	0,93	0,94	0,98	4	0,95			0,02	2,16	95,64
12	18x	3.31	31	0,95	0,98	0,92	0,96	4	0,95			0,03	2,67	95,95
13	23x	5.1	31	0,93	0,96	0,95	0,97	4	0,95			0,02	1,70	96,10
14	11	5.1	31	0,96	0,97	0,96	0,96	4	0,96			0,00	0,44	97,06
15	17x	5.5	31	0,96	0,97	0,96	0,95	4	0,96			0,01	0,85	97,08
16	43x	4.1	32	0,96	0,96	0,97	0,96	4	0,96			0,01	0,52	97,34
17	08	6.3	31	0,97	0,96	0,97	0,96	4	0,96			0,01	0,68	97,41
18	13x	5.3	53.1	0,96	0,98	0,96	0,96	4	0,97			0,01	1,04	97,59
19	60	3.3	31	1,00	0,93	0,97	0,99	4	0,97			0,03	3,11	98,47
20	07x	5.5	31	0,96	0,98	0,97	0,99	4	0,97			0,01	1,39	98,50
21	46	5.1	31	0,97	0,96	1,01	0,97	4	0,98			0,02	2,27	98,85
22	47x	4.1	31	0,98	0,98	0,98	0,98	4	0,98			0,00	0,00	99,11
23	20x	5.1	31	0,96	1,00	0,99	0,97	4	0,98			0,02	1,86	99,11
24	66	5.5	31	1,00	0,98	0,98	0,97	4	0,98			0,01	1,07	99,31
25	25	5.1	31	0,95	1,01	1,02	0,96	4	0,98			0,04	3,94	99,59
26	28x	3.31	53.3	0,99	0,99	0,99	0,99	4	0,99			0,00	0,00	100,12
27	78	5.5	31	0,98	0,99	1,00	1,00	4	0,99			0,01	0,94	100,35
28	76	5.5	31	1,00	1,01	0,98	0,97	4	0,99			0,02	1,99	100,35
29	04x	9.1	41	0,99	0,99	0,99	0,99	4	0,99			0,00	0,12	100,42
30	37	5.5	31	1,03	0,99	0,95	1,01	4	1,00			0,03	3,43	100,62
31	03x	3.10	31	0,97	1,04	1,01	0,98	4	1,00			0,03	3,16	101,13
32	32	5.7	31	1,00	1,01	1,01	1,00	4	1,00			0,00	0,14	101,53
33	49	4.1	31	1,00	1,02	1,00	1,01	4	1,01			0,01	0,95	101,89
34	61x	4.1	53.1	1,01	1,02	1,00	1,00	4	1,01			0,01	0,95	101,89
35	56	5.5	31	1,02	1,01	1,01	1,02	4	1,01			0,01	0,54	102,60
36	42	4.1	32	1,01	1,02	1,02	1,01	4	1,01			0,00	0,09	102,62
37	72	6.5	53.1	1,01	1,00	1,02	1,03	4	1,02			0,01	1,27	102,65
38	38a	9.1	42	1,01	1,01	1,01	1,04	4	1,02			0,01	1,47	102,90
39	05	6.5	53.1	1,02	1,02	1,02	1,02	4	1,02			0,00	0,25	103,03
40	37a	9.1	42	1,05	0,99	1,05	0,99	4	1,02			0,03	3,40	103,15
41	12x	5.1	31	1,01	1,03	1,04	1,01	4	1,02			0,02	1,52	103,46
42	74x	5.5	53.1	1,02	1,02	1,03	1,04	4	1,03			0,01	0,93	103,91
43	52	3.1	31	1,01	1,05	1,03	1,03	4	1,03			0,02	1,59	104,16
44	73	5	31	1,05	1,05	1,04	1,04	4	1,05			0,01	0,55	105,68
45	48x	4.1	31	1,04	1,05	1,05	1,05	4	1,05			0,00	0,48	105,91
46	09	5.5	31	1,03	1,05	1,06	1,07	4	1,05			0,02	1,72	106,56
47	64	6.4	53	1,05	1,10	0,99	1,11	4	1,06			0,05	5,18	107,45
48	26	5.5	35	1,03	1,14	1,02	1,06	4	1,06			0,05	5,12	107,45
49	38x	4.5	31	1,06	1,07	1,08	1,07	4	1,07			0,01	0,76	108,21
50	02	5.3	31	1,10	1,10	1,10	1,10	4	1,10		*	0,00	0,00	111,24
51	29x	3.3	31	1,10	*1,118a*	1,09	1,10	3	1,10		*	0,00	0,14	110,80
52														
53														
54														
55														

	N	Mean	SI	VI
all labs	195	**0,99**	**0,017**	**1,755**
10	% from the mean			
	L		SR	VR
	49		**0,052**	**5,232**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	79	3.3	53	*0,44*	*0,51*	*0,60*	*0,46*	0	*0,50*	b	*	0,07	13,91	21,41
2	01x	3.21	50	1,94	1,72	1,72	2,38	4	1,94		*	0,31	16,04	82,83
3	33a	5.1	50	2,01	1,95	1,99	2,10	4	2,01		*	0,06	3,15	85,93
4	15	5.1	53.1	1,98	2,07	2,03	2,10	4	2,05		*	0,05	2,54	87,31
5	04a	9.1	42	2,18	2,27	1,90	1,92	4	2,07		*	0,19	8,98	88,28
6	05	6.5	53.1	2,06	2,09	2,10	2,06	4	2,08		*	0,02	1,03	88,64
7	46	5.1	31	2,09	2,06	2,10	2,07	4	2,08		*	0,02	0,88	88,81
8	39x	5.5	31	2,18	2,14	2,17	2,12	4	2,15			0,03	1,28	91,90
9	38a	9.1	42	2,19	2,16	2,18	2,17	4	2,18			0,01	0,59	92,87
10	30	2.3	50	2,19	2,23	2,21	2,23	4	2,22			0,02	0,72	94,57
11	36	5.5	31	2,18	2,21	2,25	2,25	4	2,22			0,03	1,53	94,89
12	32	5.7	31	2,25	2,24	2,32	2,27	4	2,27			0,03	1,42	96,91
13	18x	3.31	31	2,21	2,24	2,29	2,39	4	2,28			0,08	3,40	97,38
14	11	5.1	31	2,27	2,28	2,30	2,33	4	2,30			0,03	1,15	97,99
15	50x	4.1	31	2,30	2,24	2,32	2,33	4	2,30			0,04	1,83	98,15
16	78	5.5	31	2,29	2,31	2,25	2,37	4	2,31			0,05	2,17	98,42
17	20x	5.1	31	2,34	2,34	2,29	2,28	4	2,31			0,03	1,38	98,74
18	77	5.1	31	2,32	2,32	2,31	2,31	4	2,32			0,01	0,25	98,84
19	23x	5.1	31	2,23	2,36	2,40	2,28	4	2,32			0,08	3,26	99,02
20	43x	4.1	32	2,29	2,36	2,31	2,32	4	2,32			0,03	1,27	99,06
21	61x	4.1	53.1	2,34	2,36	2,30	2,29	4	2,32			0,03	1,42	99,16
22	04x	9.1	41	2,33	2,31	2,34	2,34	4	2,33			0,01	0,61	99,48
23	28x	3.31	53.3	2,33	2,34	2,34	2,34	4	2,34			0,00	0,21	99,80
24	13x	5.3	53.1	2,42	2,33	2,29	2,33	4	2,34			0,05	2,35	100,02
25	03x	3.10	31	2,33	2,38	2,30	2,41	4	2,36			0,05	2,09	100,55
26	44x	4.1	31	2,31	2,37	2,36	2,39	4	2,36			0,03	1,44	100,66
27	64	6.4	53	2,31	2,45	2,32	2,35	4	2,36			0,06	2,71	100,66
28	08	6.3	31	2,35	2,39	2,33	2,37	4	2,36			0,03	1,09	100,76
29	74x	5.5	53.1	2,34	2,37	2,41	2,32	4	2,36			0,04	1,66	100,76
30	25	5.1	31	2,40	2,32	2,41	2,37	4	2,38			0,04	1,74	101,40
31	47x	4.1	31	2,38	2,38	2,39	2,36	4	2,38			0,01	0,53	101,51
32	17x	5.5	31	2,42	2,41	2,35	2,36	4	2,39			0,04	1,47	101,83
33	72	6.5	53.1	2,41	2,41	2,37	2,39	4	2,40			0,02	0,80	102,26
34	56	5.5	31	2,41	2,38	2,39	2,41	4	2,40			0,02	0,71	102,37
35	73	5	31	2,39	2,40	2,42	2,40	4	2,40			0,01	0,52	102,58
36	66	5.5	31	2,44	2,42	2,40	2,41	4	2,42			0,02	0,71	103,22
37	60	3.3	31	2,38	2,47	2,46	2,43	4	2,44			0,04	1,67	103,98
38	37a	9.1	42	2,50	2,35	2,40	2,55	4	2,45			0,09	3,73	104,61
39	52	3.1	31	2,48	2,45	2,45	2,43	4	2,45			0,02	0,84	104,71
40	76	5.5	31	2,52	2,47	2,48	2,34	4	2,45			0,08	3,11	104,71
41	12x	5.1	31	2,46	2,47	2,40	2,49	4	2,45			0,04	1,63	104,80
42	49	4.1	31	2,45	2,45	2,46	2,48	4	2,46			0,01	0,57	105,03
43	07x	5.5	31	2,48	2,44	2,47	2,48	4	2,47			0,02	0,77	105,35
44	42	4.1	32	2,45	2,49	2,48	2,49	4	2,48			0,02	0,67	105,82
45	02	5.3	31	2,50	2,50	2,50	2,50	4	2,50			0,00	0,00	106,74
46	09	5.5	31	2,49	2,50	2,49	2,54	4	2,51			0,03	1,03	106,99
47	37	5.5	31	2,56	2,56	2,53	2,55	4	2,55			0,01	0,55	108,88
48	48x	4.1	31	2,53	2,59	2,52	2,58	4	2,55			0,03	1,36	109,04
49	26	5.5	35	2,47	2,55	2,68	2,58	4	2,57			0,09	3,38	109,73
50	38x	4.5	31	2,58	2,58	2,57	2,57	4	2,58			0,01	0,22	109,94
51	29x	3.3	31	2,62	2,63	2,62	2,63	4	2,63		*	0,01	0,21	112,09
52														
53														
54														
55														

	N	Mean	SI	VI
all labs	200	**2,34**	**0,042**	**1,776**
10	% from the mean			
	L		SR	VR
	50		**0,152**	**6,506**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	30	2.3	21.1	*1,75*	*1,79*	*1,78*	*1,78*	0	*1,78*	b	*	0,02	0,97	37,70
2	13x	5.3	21.1	3,90	3,76	3,87	3,70	4	3,81		*	0,09	2,46	80,87
3	36x	5.5	31	3,95	3,91	3,89	3,92	4	3,92		*	0,02	0,64	83,21
4	76	5.5	31	4,20	4,03	4,27	4,01	4	4,13		*	0,13	3,09	87,71
5	37	5.5	31	4,21	4,28	4,44	4,53	4	4,37			0,15	3,35	92,72
6	20x	5.1	31	4,38	4,46	4,33	4,38	4	4,39			0,05	1,23	93,19
7	46	5.1	35	4,31	4,35	4,43	4,46	4	4,39			0,07	1,58	93,19
8	32	5.7	31	4,43	4,46	4,41	4,43	4	4,43			0,02	0,49	94,16
9	38x	4.5	31	4,44	4,38	4,38	4,63	4	4,46			0,12	2,66	94,68
10	43x	4.1	31	4,46	4,47	4,48	4,42	4	4,46			0,03	0,59	94,68
11	07x	5.5	31	4,48	4,49	4,46	4,51	4	4,49			0,02	0,46	95,27
12	44x	4.1	31	4,56	4,58	4,44	4,43	4	4,50			0,08	1,74	95,64
13	64	6.4	21.1	4,68	4,43	4,58	4,54	4	4,56			0,10	2,27	96,81
14	61x	4.1	21.2	4,56	4,56	4,57	4,55	4	4,56			0,01	0,18	96,86
15	39x	5.5	31	4,51	4,57	4,59	4,57	4	4,56			0,03	0,76	96,86
16	02	5.3	31	4,70	4,70	4,50	4,40	4	4,58			0,15	3,28	97,18
17	03x	3.10	31	4,63	4,53	4,54	4,62	4	4,58			0,05	1,14	97,28
18	79	3.3	31	4,79	4,49	4,65	4,44	4	4,59			0,16	3,47	97,54
19	48x	4.1	31	4,71	4,58	4,54	4,55	4	4,59			0,08	1,67	97,59
20	08	6.3	31	4,54	4,72	4,72	4,63	4	4,65			0,09	1,85	98,82
21	50x	4.1	31	4,67	4,56	4,64	4,76	4	4,66			0,08	1,75	98,92
22	66	5.5	31	4,67	4,67	4,69	4,74	4	4,69			0,03	0,70	99,67
23	77	5.1	31	4,68	4,59	4,80	4,78	4	4,71			0,10	2,06	100,10
24	23x	5.1	31	4,70	4,76	4,69	4,74	4	4,72			0,03	0,70	100,31
25	42	4.1	32	4,74	4,73	4,71	4,73	4	4,73			0,01	0,20	100,39
26	49	4.1	31	4,54	4,94	4,65	4,79	4	4,73			0,17	3,67	100,47
27	25	5.1	31	4,79	4,65	4,88	4,68	4	4,75			0,11	2,22	100,84
28	47x	4.1	31	4,77	4,77	4,75	4,73	4	4,76			0,02	0,40	101,00
29	11	5.1	31	4,70	4,78	4,78	4,79	4	4,76			0,04	0,88	101,16
30	18x	3.31	31	4,82	4,77	4,82	4,67	4	4,77			0,07	1,39	101,26
31	26	5.5	31	4,76	4,67	4,98	4,67	4	4,77			0,15	3,07	101,32
32	60	3.3	31	4,74	4,80	4,77	4,78	4	4,77			0,03	0,55	101,37
33	15	5.1	21.1	4,78	4,85	4,71	4,79	4	4,78			0,06	1,20	101,58
34	17x	5.5	31	4,75	4,81	4,83	4,77	4	4,79			0,04	0,76	101,74
35	28x	3.31	21.1	4,81	4,80	4,79	4,78	4	4,80			0,01	0,27	101,85
36	56	4.5	31	4,79	4,85	4,76	4,82	4	4,80			0,04	0,74	102,01
37	12x	5.1	31	4,70	4,79	4,82	4,91	4	4,80			0,09	1,86	102,06
38	52	3.1	31	4,78	4,86	4,74	4,84	4	4,81			0,06	1,15	102,06
39	29x	3.3	31	4,83	4,79	4,81	4,82	4	4,81			0,02	0,34	102,23
40	37a	9.1	42	5,01	4,81	4,75	4,95	4	4,88			0,12	2,47	103,66
41	72	6.5	21.1	5,01	4,79	4,94	4,83	4	4,89			0,10	2,06	103,92
42	73	5	31	5,00	4,98	4,99	4,97	4	4,99			0,01	0,26	105,89
43	74x	5.5	21.2	5,08	5,06	4,97	5,16	4	5,07			0,08	1,54	107,64
44	09	5.5	31	5,01	5,09	5,12	5,11	4	5,08			0,05	0,97	107,96
45	05	3.3	21.1	4,95	5,20	5,10	5,10	4	5,09			0,10	2,03	108,06
46	04x	9.1	41	5,14	5,13	5,15	5,17	4	5,15			0,02	0,33	109,34
47	04a	9.1	42	5,16	5,22	5,15	5,24	4	5,19		*	0,04	0,85	110,29
48	38a	9.1	42	5,18	5,20	5,21	5,18	4	5,19		*	0,01	0,29	110,29
49	78	5.5	31	5,21	5,21	5,27	5,38	4	5,27		*	0,08	1,52	111,89
50	33a	5.1	21	5,41	5,42	5,54	5,56	4	5,48		*	0,08	1,43	116,45
51	19x	3.10	21	*8,57*	*8,75*	*8,21*	*8,57*	0	*8,52*	b	*	0,22	2,64	181,03
52														
53														
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	N	Mean	SI	VI
all labs	196	**4,71**	**0,067**	**1,425**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
49	**0,314**	**6,666**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	30	2.3	21.1	*1,17*	*1,16*	*1,18*	*1,11*	0	*1,15*	b	*	0,03	2,50	38,70
2	13x	5.3	21.1	2,44	2,28	2,28	2,56	4	2,39		*	0,14	5,70	80,15
3	36x	5.5	31	2,42	2,37	2,39	2,40	4	2,40		*	0,02	0,87	80,32
4	20x	5.1	31	2,64	2,62	2,59	2,61	4	2,62		*	0,02	0,80	87,70
5	76	5.5	31	2,66	2,66	2,60	2,65	4	2,64		*	0,03	0,99	88,61
6	79	3.3	31	2,66	2,73	2,68	2,73	4	2,70			0,03	1,24	90,57
7	43x	4.1	31	2,76	2,75	2,79	2,77	4	2,77			0,02	0,62	92,81
8	61x	4.1	21.2	2,78	2,84	2,77	2,82	4	2,80			0,03	1,18	93,99
9	44x	4.1	31	2,76	2,80	2,87	2,82	4	2,81			0,05	1,63	94,32
10	39x	5.5	31	2,80	2,77	2,83	2,85	4	2,81			0,04	1,24	94,32
11	07x	5.5	31	2,82	2,83	2,80	2,84	4	2,82			0,02	0,61	94,66
12	08	6.3	31	2,83	2,88	2,87	2,81	4	2,85			0,03	1,16	95,49
13	66	5.5	31	2,85	2,86	2,85	2,84	4	2,85			0,01	0,29	95,58
14	46	5.1	35	2,88	2,85	2,87	2,90	4	2,88			0,02	0,72	96,42
15	02	5.3	31	2,90	2,90	2,80	2,90	4	2,88			0,05	1,74	96,42
16	38x	4.5	31	2,97	2,85	2,92	2,84	4	2,90			0,06	2,12	97,09
17	32	5.7	31	2,87	2,95	2,95	2,92	4	2,92			0,04	1,32	98,07
18	37	5.5	31	2,84	2,95	3,02	2,95	4	2,94			0,07	2,53	98,60
19	50x	4.1	31	2,95	2,90	2,97	2,96	4	2,95			0,03	1,04	98,84
20	11	5.1	31	2,94	2,92	2,97	2,98	4	2,95			0,03	0,93	99,02
21	42	4.1	32	2,97	2,98	2,98	2,96	4	2,97			0,01	0,22	99,68
22	23x	5.1	31	2,95	2,96	3,01	2,97	4	2,97			0,03	0,88	99,69
23	56	4.5	31	2,95	2,97	3,01	2,99	4	2,98			0,02	0,82	99,85
24	03x	3.10	31	2,93	3,03	2,98	2,99	4	2,98			0,04	1,38	100,02
25	64	6.4	21.1	3,03	2,95	3,05	2,93	4	2,99			0,06	1,97	100,27
26	47x	4.1	31	2,98	2,99	3,00	3,00	4	2,99			0,01	0,32	100,36
27	77	5.1	31	2,94	2,95	3,04	3,04	4	2,99			0,06	1,84	100,36
28	17x	5.5	31	3,00	3,07	2,97	2,97	4	3,00			0,05	1,57	100,69
29	18x	3.31	31	3,06	3,00	3,00	2,97	4	3,01			0,04	1,27	100,92
30	52	3.1	31	3,08	3,02	3,07	3,01	4	3,05			0,04	1,15	102,12
31	29x	3.3	31	3,05	3,04	3,05	3,06	4	3,05			0,01	0,32	102,23
32	48x	4.1	31	3,02	3,09	3,07	3,02	4	3,05			0,04	1,19	102,25
33	12x	5.1	31	3,10	3,05	3,09	2,99	4	3,06			0,05	1,56	102,56
34	49	4.1	31	2,85	3,33	2,98	3,15	4	3,08			0,21	6,77	103,21
35	28x	3.31	21.1	3,12	3,10	3,06	3,08	4	3,09			0,03	0,84	103,63
36	72	6.5	21.1	3,05	3,15	3,12	3,06	4	3,10			0,05	1,55	103,80
37	60	3.3	31	3,01	3,19	3,18	3,02	4	3,10			0,10	3,18	103,85
38	25	5.1	31	3,08	3,12	3,08	3,13	4	3,10			0,03	0,85	103,92
39	73	5	31	3,16	3,14	3,15	3,18	4	3,16			0,02	0,54	105,89
40	09	5.5	31	3,18	3,20	3,22	3,07	4	3,17			0,07	2,23	106,24
41	37a	9.1	42	3,15	3,24	3,21	3,12	4	3,18			0,05	1,72	106,65
42	19x	3.10	21	3,24	3,06	3,06	3,42	4	3,20			0,17	5,40	107,27
43	38a	9.1	42	3,24	3,24	3,24	3,24	4	3,24			0,00	0,00	108,66
44	74x	5.5	21.2	3,19	3,26	3,26	3,28	4	3,25			0,04	1,22	108,91
45	04x	9.1	41	3,23	3,26	3,28	3,24	4	3,25			0,02	0,68	109,08
46	26	5.5	31	3,19	3,56	3,10	3,20	4	3,26			0,20	6,23	109,41
47	04a	9.1	42	3,24	3,23	3,30	3,29	4	3,27			0,04	1,08	109,50
48	15	5.1	21.1	3,38	3,31	3,36	3,36	4	3,35		*	0,03	0,89	112,43
49	78	5.5	31	3,38	3,46	3,28	3,43	4	3,39		*	0,08	2,33	113,60
50	05	3.3	21.1	*3,70*	*3,90*	*3,60*	*3,70*	0	*3,73*	b	*	0,13	3,38	124,92
51	33a	5.1	21	*3,62*	*3,68*	*4,01*	*4,00*	0	*3,83*	b	*	0,21	5,39	128,36
52														
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	N	Mean	SI	VI
all labs	192	**2,98**	**0,048**	**1,605**
10	% from the mean			

L	SR	VR
48	**0,214**	**7,192**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	30	2.3	21.1	*9,16*	*9,15*	*9,15*	*9,235a*	0	*9,15*	b	*	0,00	0,05	42,04
2	56	4.5	31	18,23	17,89	18,54	18,45	4	18,28		*	0,29	1,58	83,97
3	13x	5.3	21.1	18,08	18,61	18,38	19,72	4	18,70		*	0,72	3,83	85,90
4	36x	5.5	31	19,04	18,75	18,45	19,35	4	18,90		*	0,39	2,04	86,81
5	79	3.3	31	19,02	19,40	19,17	19,69	4	19,32		*	0,29	1,52	88,77
6	76	5.5	31	19,96	19,35	19,03	19,29	4	19,41		*	0,39	2,03	89,16
7	50x	4.1	31	20,12	20,21	20,39	20,45	4	20,29			0,15	0,76	93,22
8	43x	4.1	31	20,45	20,36	20,39	20,50	4	20,43			0,06	0,31	93,83
9	44x	4.1	31	20,90	21,10	20,60	20,60	4	20,80			0,24	1,18	95,56
10	18x	3.31	31	20,41	21,47	20,35	21,41	4	20,91			0,61	2,93	96,05
11	32	5.7	31	21,06	20,99	20,98	21,01	4	21,01			0,04	0,17	96,52
12	61x	4.1	21.2	21,41	21,11	20,89	20,69	4	21,03			0,31	1,47	96,59
13	26	5.5	31	21,95	20,71	21,31	20,82	4	21,20			0,57	2,67	97,38
14	19x	3.10	21	20,70	20,15	22,88	21,24	4	21,24			1,18	5,54	97,59
15	07x	5.5	31	21,20	21,20	21,30	21,30	4	21,25			0,06	0,27	97,62
16	66	5.5	31	21,80	21,40	21,40	21,30	4	21,48			0,22	1,03	98,66
17	49	4.1	31	21,23	21,80	21,55	21,40	4	21,50			0,24	1,12	98,75
18	28x	3.31	21.1	21,60	21,56	21,48	21,52	4	21,54			0,05	0,24	98,95
19	60	3.3	31	20,11	21,70	22,51	22,12	4	21,61			1,06	4,88	99,27
20	77	5.1	31	20,94	21,07	22,21	22,36	4	21,65			0,74	3,43	99,44
21	46	5.1	35	21,60	21,40	21,90	21,90	4	21,70			0,24	1,13	99,69
22	39x	5.5	31	21,80	21,80	21,50	21,90	4	21,75			0,17	0,80	99,92
23	04x	9.1	41	21,68	21,77	21,78	21,86	4	21,77			0,07	0,34	100,02
24	33a	5.1	21	22,07	22,50	21,28	21,67	4	21,88			0,52	2,40	100,52
25	12x	5.1	31	21,76	22,00	22,31	21,54	4	21,90			0,33	1,51	100,63
26	15	5.1	21.1	21,40	22,00	21,90	22,40	4	21,93			0,41	1,88	100,72
27	03x	3.10	31	21,61	22,27	22,44	21,65	4	21,99			0,42	1,93	101,03
28	64	6.4	21.1	22,55	21,45	22,44	21,56	4	22,00			0,58	2,61	101,07
29	23x	5.1	31	21,96	21,98	22,17	22,02	4	22,03			0,10	0,43	101,22
30	17x	5.5	31	21,57	21,27	22,77	22,54	4	22,04			0,73	3,31	101,24
31	47x	4.1	31	22,10	21,90	22,30	22,00	4	22,08			0,17	0,77	101,41
32	08	6.3	31	22,00	22,00	22,20	22,10	4	22,08			0,10	0,43	101,41
33	20x	5.1	31	22,14	22,25	22,35	21,85	4	22,15			0,22	0,98	101,75
34	42	4.1	32	22,31	22,29	21,86	22,22	4	22,17			0,21	0,95	101,84
35	52	3.1	31	22,01	22,11	22,44	22,13	4	22,17			0,19	0,84	101,86
36	48x	4.1	31	22,08	22,42	22,24	22,08	4	22,21			0,16	0,73	102,01
37	29x	3.3	31	22,29	22,46	22,09	22,16	4	22,25			0,16	0,73	102,22
38	25	5.1	31	21,91	22,17	23,32	21,70	4	22,28			0,72	3,25	102,33
39	38a	9.1	42	22,40	22,50	22,40	22,50	4	22,45			0,06	0,26	103,14
40	73	5	31	22,70	22,40	22,50	22,40	4	22,50			0,14	0,63	103,36
41	37a	9.1	42	22,35	22,58	22,42	22,65	4	22,50			0,14	0,62	103,36
42	02	5.3	31	21,80	21,90	23,20	23,20	4	22,53			0,78	3,47	103,48
43	04a	9.1	42	22,86	22,50	22,82	22,30	4	22,62			0,27	1,18	103,92
44	37	5.5	31	22,79	22,86	22,45	22,54	4	22,66			0,20	0,87	104,10
45	11	5.1	31	22,70	22,70	22,70	22,60	4	22,68			0,05	0,22	104,17
46	38x	4.5	31	22,70	22,90	22,80	22,70	4	22,78			0,10	0,42	104,63
47	72	6.5	21.1	23,00	23,08	22,78	23,14	4	23,00			0,16	0,68	105,66
48	78	5.5	31	23,50	24,00	23,10	24,40	4	23,75			0,57	2,39	109,11
49	09	5.5	31	23,80	24,39	23,73	24,17	4	24,02		*	0,32	1,31	110,35
50	74x	5.5	21.2	25,07	24,52	24,63	24,81	4	24,76		*	0,24	0,97	113,74
51	05	3.3	21.1	25,30	25,15	25,60	25,00	4	25,26		*	0,26	1,01	116,06
52														
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	N	Mean	SI	VI
all labs	200	**21,77**	**0,328**	**1,505**
10	% from the mean			

L	SR	VR
50	**1,341**	**6,160**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Ca **Sample: 4** Dimension: 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	19x	3.10	21	*6,79*	*5,14*	*4,96*	*5,63*	0	*5,63*	b	*	0,83	14,66	32,27
2	30	2.3	21.1	*8,71*	*8,76*	*8,68*	*8,95*	0	*8,77*	b	*	0,12	1,39	50,28
3	36x	5.5	31	*14,69*	*13,15*	*14,08*	*13,78*	0	*13,93*	b	*	0,64	4,60	79,80
4	13x	5.3	21.1	14,30	14,19	14,97	15,51	4	14,74		*	0,62	4,18	84,48
5	79	3.3	31	15,04	15,31	14,58	15,75	4	15,17		*	0,49	3,24	86,94
6	76	5.5	31	15,28	15,49	15,10	15,53	4	15,35		*	0,20	1,30	87,96
7	43x	4.1	31	16,04	16,07	15,86	15,83	4	15,95			0,12	0,77	91,40
8	61x	4.1	21.2	16,27	16,02	16,78	16,64	4	16,43			0,35	2,11	94,14
9	32	5.7	31	16,47	16,51	16,70	16,56	4	16,56			0,10	0,61	94,90
10	44x	4.1	31	16,60	16,60	16,50	16,60	4	16,58			0,05	0,30	94,98
11	39x	5.5	31	16,40	16,70	16,60	16,60	4	16,58			0,13	0,76	94,98
12	07x	5.5	31	16,60	16,60	16,80	16,80	4	16,70			0,12	0,69	95,70
13	50x	4.1	31	16,35	16,51	17,09	17,34	4	16,82			0,47	2,79	96,40
14	33a	5.1	21	16,81	16,86	17,45	17,60	4	17,18			0,40	2,35	98,45
15	66	5.5	31	17,30	17,20	17,10	17,20	4	17,20			0,08	0,47	98,56
16	60	3.3	31	16,96	16,80	17,35	17,77	4	17,22			0,43	2,51	98,68
17	73	5	31	17,30	17,30	17,20	17,10	4	17,23			0,10	0,56	98,71
18	28x	3.31	21.1	17,20	17,31	17,21	17,22	4	17,24			0,05	0,29	98,77
19	25	5.1	31	16,80	17,73	18,18	16,60	4	17,33			0,75	4,34	99,30
20	03x	3.10	31	17,18	17,54	16,95	17,65	4	17,33			0,32	1,87	99,31
21	49	4.1	31	17,12	17,54	17,33	17,40	4	17,35			0,18	1,01	99,41
22	15	5.1	21.1	16,90	17,50	17,30	17,80	4	17,38			0,38	2,17	99,57
23	52	3.1	31	17,69	17,38	17,68	16,87	4	17,41			0,38	2,21	99,74
24	48x	4.1	31	17,13	17,17	17,35	17,97	4	17,41			0,39	2,23	99,74
25	04x	9.1	41	17,41	17,42	17,38	17,44	4	17,41			0,03	0,14	99,78
26	23x	5.1	31	17,34	17,41	17,40	17,69	4	17,46			0,16	0,90	100,05
27	17x	5.5	31	17,39	17,59	17,54	17,42	4	17,49			0,10	0,55	100,20
28	08	6.3	31	17,40	17,70	17,40	17,60	4	17,53			0,15	0,86	100,43
29	26	5.5	31	18,10	17,45	17,60	17,20	4	17,59			0,38	2,16	100,79
30	12x	5.1	31	17,81	17,98	17,13	17,80	4	17,68			0,38	2,14	101,32
31	29x	3.3	31	17,83	17,66	17,61	17,65	4	17,69			0,10	0,55	101,36
32	46	5.1	35	17,70	17,90	17,70	17,60	4	17,73			0,13	0,71	101,57
33	20x	5.1	31	18,08	18,05	17,37	17,61	4	17,78			0,35	1,95	101,87
34	72	6.5	21.1	17,81	18,06	17,74	17,59	4	17,80			0,20	1,10	102,00
35	11	5.1	31	17,90	18,00	17,80	17,80	4	17,88			0,10	0,54	102,43
36	64	6.4	21.1	17,73	18,07	18,26	17,54	4	17,90			0,33	1,82	102,58
37	47x	4.1	31	18,00	18,10	17,80	17,90	4	17,95			0,13	0,72	102,86
38	37	5.5	31	17,99	17,74	18,19	17,92	4	17,96			0,19	1,04	102,92
39	18x	3.31	31	17,75	17,84	18,09	18,28	4	17,99			0,24	1,35	103,10
40	77	5.1	31	17,78	17,59	18,33	18,30	4	18,00			0,37	2,07	103,15
41	04a	9.1	42	18,47	17,50	17,69	18,37	4	18,01			0,48	2,69	103,19
42	42	4.1	32	18,10	18,37	17,51	18,05	4	18,01			0,36	1,99	103,20
43	38x	4.5	31	17,90	18,10	18,20	18,30	4	18,13			0,17	0,94	103,87
44	37a	9.1	42	18,05	18,09	18,25	18,21	4	18,15			0,10	0,52	104,01
45	38a	9.1	42	18,50	18,20	17,90	18,10	4	18,18			0,25	1,38	104,15
46	56	4.5	31	18,55	18,46	18,07	18,08	4	18,29			0,25	1,37	104,81
47	78	5.5	31	18,50	18,70	18,80	19,20	4	18,80			0,29	1,57	107,73
48	02	5.3	31	19,00	19,00	18,80	18,70	4	18,88			0,15	0,79	108,16
49	09	5.5	31	19,20	18,90	18,83	19,05	4	18,99			0,16	0,87	108,84
50	74x	5.5	21.2	19,70	19,95	19,95	19,63	4	19,81		*	0,17	0,84	113,51
51	05	3.3	21.1	*20,90*	*22,40*	*21,90*	*22,00*	0	*21,80*	b	*	0,64	2,93	124,92
52														
53														
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	N	Mean	SI	VI
all labs	188	**17,45**	**0,251**	**1,437**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
47	**0,937**	**5,368**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	19x	3.10	21	*0,04*	*0,05*	*0,02*	*0,04*	0	*0,03*	b	*	0,01	29,76	2,71
2	79	3.3	31	1,10	1,13	1,13	1,11	4	1,12		*	0,02	1,49	86,89
3	36x	5.5	31	1,08	1,12	1,14	1,16	4	1,13		*	0,03	3,04	87,59
4	33a	5.1	21	1,11	1,10	1,15	1,16	4	1,13		*	0,03	2,61	87,98
5	32	5.7	31	1,14	1,16	1,14	1,15	4	1,15		*	0,01	0,80	89,28
6	04a	9.1	42	*1,34*	*1,02*	*1,39*	*1,00*	0	*1,19*	c		0,21	17,36	92,46
7	74x	5.5	21.1	1,18	1,20	1,21	1,19	4	1,20			0,01	1,08	93,04
8	15	5.1	21.1	1,19	1,18	1,22	1,21	4	1,20			0,02	1,52	93,43
9	76	5.5	31	1,21	1,20	1,25	1,17	4	1,21			0,03	2,87	94,01
10	50x	4.1	31	1,21	1,18	1,23	1,22	4	1,21			0,02	1,67	94,11
11	46	5.1	35	1,20	1,20	1,23	1,24	4	1,22			0,02	1,69	94,79
12	37	5.5	31	1,17	1,26	1,23	1,24	4	1,23			0,04	3,16	95,38
13	38	4.5	31	1,24	1,21	1,23	1,30	4	1,25			0,04	3,11	96,93
14	77	5.1	31	1,25	1,23	1,26	1,26	4	1,25			0,01	1,13	97,32
15	02	5.3	31	1,30	1,30	1,20	1,20	4	1,25			0,06	4,62	97,32
16	38a	9.1	42	1,25	1,25	1,26	1,24	4	1,25			0,01	0,65	97,32
17	44x	4.1	31	1,26	1,26	1,25	1,25	4	1,26			0,01	0,46	97,71
18	72	6.5	21.1	1,25	1,25	1,26	1,26	4	1,26			0,01	0,46	97,71
19	23x	5.1	32	1,25	1,25	1,25	1,27	4	1,26			0,01	0,80	97,71
20	39x	5.5	31	1,26	1,26	1,27	1,27	4	1,27			0,01	0,46	98,49
21	11	5.1	31	1,26	1,26	1,27	1,27	4	1,27			0,01	0,46	98,49
22	05	3.3	21.1	1,25	1,30	1,25	1,30	4	1,28			0,03	2,26	99,27
23	64	6.4	21.1	1,31	1,24	1,30	1,26	4	1,28			0,03	2,59	99,46
24	08	6.3	31	1,26	1,29	1,29	1,28	4	1,28			0,01	1,10	99,66
25	20x	5.1	31	1,29	1,29	1,27	1,28	4	1,28			0,01	0,75	99,85
26	61x	4.1	21.1	1,30	1,30	1,28	1,26	4	1,29			0,02	1,49	100,05
27	37a	9.1	42	1,34	1,23	1,35	1,24	4	1,29			0,06	4,94	100,44
28	52	3.1	31	1,29	1,30	1,29	1,29	4	1,29			0,01	0,39	100,63
29	13x	5.3	21.1	1,31	1,32	1,31	1,23	4	1,29			0,04	3,24	100,63
30	09	5.5	31	1,30	1,29	1,31	1,29	4	1,30			0,01	0,68	101,03
31	43x	4.1	31	1,29	1,31	1,30	1,30	4	1,30			0,01	0,63	101,21
32	18x	3.31	31	1,31	1,31	1,31	1,28	4	1,30			0,02	1,19	101,23
33	12x	4.1	31	1,26	1,31	1,32	1,33	4	1,31			0,03	2,29	101,68
34	60	3.3	31	1,29	1,31	1,32	1,31	4	1,31			0,01	0,93	101,70
35	07x	5.5	31	1,32	1,31	1,31	1,30	4	1,31			0,01	0,62	101,99
36	48x	4.1	31	1,31	1,28	1,30	1,36	4	1,31			0,03	2,56	102,34
37	28x	3.31	21.1	1,31	1,31	1,32	1,32	4	1,32			0,01	0,44	102,38
38	17x	5.5	31	1,31	1,33	1,32	1,30	4	1,32			0,01	0,98	102,38
39	56	5.5	31	1,33	1,34	1,30	1,30	4	1,32			0,02	1,35	102,62
40	03x	3.10	31	1,36	1,33	1,34	1,36	4	1,35			0,02	1,11	104,91
41	47x	4.1	31	1,34	1,38	1,35	1,34	4	1,35			0,02	1,40	105,30
42	29x	3.3	31	1,37	1,33	1,35	1,37	4	1,36			0,02	1,53	105,50
43	66	5.5	31	1,35	1,35	1,36	1,37	4	1,36			0,01	0,71	105,69
44	42	4.1	32	1,37	1,36	1,37	1,36	4	1,37			0,00	0,27	106,31
45	26	5.5	31	1,43	1,32	1,41	1,36	4	1,38			0,05	3,60	107,44
46	49	4.1	31	1,30	1,48	1,30	1,45	4	1,38			0,10	6,95	107,64
47	25	5.1	31	1,42	1,42	1,39	1,32	4	1,39			0,04	3,20	107,95
48	73	5	31	1,39	1,38	1,41	1,40	4	1,40			0,01	0,93	108,61
49	78	5.5	31	1,45	1,44	1,44	1,46	4	1,45		*	0,01	0,66	112,70
50	04x	9.1	41	1,44	1,46	1,52	1,43	4	1,46		*	0,04	2,76	113,87
51	30	2.3	21.1	*1,80*	*1,78*	*1,77*	*1,83*	0	*1,79*	b	*	0,02	1,36	139,68
52														
53														
54														
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	N	Mean	SI	VI
all labs	192	**1,28**	**0,022**	**1,745**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
48	**0,076**	**5,918**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Mg **Sample: 2** Dimension: 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	36x	5.5	31	1,18	1,21	1,14	1,17	4	1,18		*	0,03	2,46	84,95
2	33a	5.1	21	1,15	1,15	1,24	1,21	4	1,19		*	0,05	3,79	85,86
3	79	3.3	31	1,24	1,24	1,18	1,22	4	1,22		*	0,03	2,27	88,06
4	20x	5.1	31	1,26	1,28	1,26	1,27	4	1,27			0,01	0,76	91,64
5	04a	9.1	42	*1,44*	*1,48*	*1,09*	*1,08*	0	*1,27*	c		0,22	17,07	92,00
6	15	5.1	21.1	1,26	1,26	1,29	1,30	4	1,28			0,02	1,61	92,36
7	74x	5.5	21.1	1,29	1,29	1,26	1,29	4	1,28			0,02	1,17	92,73
8	32	5.7	31	1,28	1,31	1,32	1,31	4	1,31			0,02	1,29	94,39
9	76	5.5	31	1,33	1,31	1,28	1,31	4	1,31			0,02	1,57	94,41
10	23x	5.1	32	1,31	1,31	1,31	1,32	4	1,31			0,01	0,38	94,89
11	50x	4.1	31	1,31	1,28	1,34	1,35	4	1,32			0,03	2,31	95,17
12	39x	5.5	31	1,34	1,33	1,34	1,35	4	1,34			0,01	0,61	96,88
13	64	6.4	21.1	1,39	1,27	1,39	1,33	4	1,35			0,06	4,27	97,24
14	13x	5.3	21.1	1,35	1,36	1,33	1,35	4	1,35			0,01	0,93	97,43
15	77	5.1	31	1,36	1,36	1,33	1,36	4	1,35			0,01	1,11	97,79
16	08	6.3	31	1,34	1,37	1,37	1,33	4	1,35			0,02	1,52	97,79
17	19x	3.10	21	1,37	1,37	1,33	1,36	4	1,36			0,02	1,40	98,17
18	44x	4.1	31	1,35	1,36	1,38	1,35	4	1,36			0,01	1,04	98,33
19	72	6.5	21.1	1,36	1,36	1,37	1,38	4	1,37			0,01	0,70	98,87
20	38a	9.1	42	1,36	1,38	1,36	1,38	4	1,37			0,01	0,84	99,05
21	11	5.1	31	1,37	1,36	1,37	1,38	4	1,37			0,01	0,60	99,05
22	02	5.3	31	1,40	1,40	1,30	1,40	4	1,38			0,05	3,64	99,41
23	46	5.1	35	1,38	1,36	1,38	1,39	4	1,38			0,01	0,91	99,59
24	43x	4.1	31	1,38	1,37	1,40	1,39	4	1,39			0,01	0,93	100,14
25	09	5.5	31	1,40	1,40	1,39	1,38	4	1,39			0,01	0,64	100,59
26	17x	5.5	31	1,40	1,41	1,40	1,38	4	1,40			0,01	0,90	101,04
27	18x	3.31	31	1,42	1,40	1,40	1,38	4	1,40			0,02	1,20	101,17
28	52	3.1	31	1,42	1,39	1,41	1,38	4	1,40			0,02	1,30	101,22
29	05	3.3	21.1	1,40	1,40	1,40	1,40	4	1,40			0,00	0,00	101,22
30	37a	9.1	42	1,40	1,44	1,36	1,40	4	1,40			0,03	2,33	101,22
31	60	3.3	31	1,42	1,36	1,41	1,41	4	1,40			0,03	1,87	101,31
32	12x	4.1	31	1,39	1,43	1,40	1,40	4	1,40			0,02	1,28	101,46
33	56	5.5	31	1,42	1,39	1,41	1,40	4	1,40			0,01	0,83	101,47
34	38	4.5	31	1,43	1,44	1,36	1,39	4	1,41			0,04	2,63	101,58
35	28x	3.31	21.1	1,41	1,41	1,41	1,40	4	1,41			0,01	0,36	101,76
36	61x	4.1	21.1	1,42	1,40	1,41	1,40	4	1,41			0,01	0,68	101,76
37	37	5.5	31	1,39	1,43	1,42	1,40	4	1,41			0,02	1,29	101,94
38	07x	5.5	31	1,42	1,42	1,42	1,43	4	1,42			0,01	0,35	102,85
39	49	4.1	31	1,44	1,45	1,44	1,46	4	1,45			0,01	0,66	104,66
40	26	5.5	31	1,44	1,46	1,39	1,50	4	1,45			0,05	3,16	104,66
41	03x	3.10	31	1,43	1,47	1,45	1,46	4	1,45			0,02	1,18	105,02
42	48x	4.1	31	1,43	1,46	1,45	1,48	4	1,45			0,02	1,40	105,16
43	47x	4.1	31	1,47	1,45	1,46	1,46	4	1,46			0,01	0,56	105,56
44	29x	3.3	31	1,47	1,47	1,46	1,46	4	1,46			0,00	0,28	105,87
45	42	4.1	32	1,47	1,47	1,46	1,46	4	1,47			0,00	0,34	105,96
46	66	5.5	31	1,48	1,48	1,47	1,47	4	1,48			0,01	0,39	106,64
47	25	5.1	31	1,46	1,50	1,49	1,47	4	1,48			0,02	1,16	107,10
48	73	5	31	1,48	1,49	1,49	1,49	4	1,49			0,00	0,34	107,55
49	78	5.5	31	1,53	1,56	1,54	1,58	4	1,55		*	0,02	1,43	112,25
50	04x	9.1	41	1,60	1,58	1,66	1,51	4	1,59		*	0,06	3,90	114,78
51	30	2.3	21.1	*1,88*	*1,86*	*1,91*	*1,89*	0	*1,88*	b	*	0,02	1,17	136,11
52														
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54														
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	N	Mean	SI	VI
all labs	196	**1,38**	**0,019**	**1,347**
10	% from the mean			
	L		SR	VR
	49		**0,081**	**5,873**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Mg **Sample: 3** Dimension: 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	79	3.3	31	*1,90*	*1,91*	*1,87*	*1,91*	0	*1,90*	b	*	0,02	1,10	84,76
2	04a	9.1	42	*2,25*	*2,31*	*1,69*	*1,70*	0	*1,99*	c	*	0,34	17,04	88,83
3	50x	4.1	31	2,03	1,98	2,06	2,03	4	2,03			0,03	1,55	90,62
4	36x	5.5	31	2,02	2,06	2,03	2,09	4	2,05			0,03	1,54	91,62
5	60	3.3	31	2,09	2,05	2,16	2,06	4	2,09			0,05	2,35	93,50
6	32	5.7	31	2,11	2,10	2,11	2,11	4	2,11			0,00	0,22	94,17
7	38a	9.1	42	2,11	2,11	2,13	2,12	4	2,12			0,01	0,45	94,64
8	76	5.5	31	2,16	2,12	2,11	2,09	4	2,12			0,03	1,44	94,81
9	15	5.1	21.1	2,09	2,13	2,09	2,20	4	2,13			0,05	2,44	95,09
10	33a	5.1	21	2,10	2,09	2,19	2,18	4	2,14			0,05	2,44	95,65
11	02	5.3	31	2,10	2,10	2,20	2,20	4	2,15			0,06	2,69	96,09
12	09	5.5	31	2,18	2,16	2,17	2,15	4	2,16			0,01	0,47	96,74
13	13x	5.3	21.1	2,19	2,21	2,12	2,18	4	2,18			0,04	1,78	97,21
14	39x	5.5	31	2,18	2,18	2,15	2,19	4	2,18			0,02	0,80	97,21
15	44x	4.1	31	2,19	2,20	2,17	2,16	4	2,18			0,02	0,84	97,43
16	37a	9.1	42	2,11	2,24	2,27	2,14	4	2,19			0,08	3,52	97,88
17	74x	5.5	21.1	2,24	2,08	2,40	2,07	4	2,20			0,16	7,09	98,22
18	72	6.5	21.1	2,18	2,19	2,21	2,21	4	2,20			0,02	0,68	98,22
19	28x	3.31	21.1	2,20	2,20	2,21	2,22	4	2,21			0,01	0,43	98,66
20	77	5.1	31	2,21	2,17	2,22	2,23	4	2,21			0,03	1,19	98,66
21	52	3.1	31	2,20	2,20	2,23	2,21	4	2,21			0,01	0,64	98,77
22	08	6.3	31	2,21	2,21	2,22	2,22	4	2,22			0,01	0,26	99,00
23	23x	5.1	32	2,21	2,22	2,24	2,21	4	2,22			0,01	0,64	99,22
24	56	5.5	31	2,23	2,19	2,22	2,24	4	2,22			0,02	0,93	99,23
25	47x	4.1	31	2,23	2,22	2,21	2,23	4	2,22			0,01	0,43	99,33
26	43x	4.1	31	2,22	2,21	2,24	2,23	4	2,23			0,01	0,58	99,44
27	66	5.5	31	2,22	2,22	2,23	2,23	4	2,23			0,01	0,26	99,44
28	11	5.1	31	2,22	2,25	2,23	2,22	4	2,23			0,01	0,63	99,67
29	18x	3.31	31	2,27	2,26	2,17	2,24	4	2,23			0,05	2,06	99,81
30	07x	5.5	31	2,23	2,24	2,24	2,24	4	2,24			0,00	0,22	100,00
31	37	5.5	31	2,21	2,23	2,24	2,28	4	2,24			0,03	1,31	100,11
32	26	5.5	31	2,29	2,22	2,17	2,29	4	2,24			0,06	2,61	100,23
33	17x	5.5	31	2,17	2,17	2,33	2,31	4	2,25			0,09	3,87	100,34
34	19x	3.10	21	2,29	2,23	2,30	2,27	4	2,27			0,03	1,47	101,56
35	64	6.4	21.1	2,37	2,18	2,33	2,23	4	2,28			0,09	3,85	101,79
36	46	5.1	35	2,27	2,25	2,31	2,31	4	2,29			0,03	1,31	102,13
37	05	3.3	21.1	2,20	2,30	2,35	2,30	4	2,29			0,06	2,75	102,24
38	38	4.5	31	2,29	2,35	2,31	2,31	4	2,32			0,03	1,09	103,47
39	04x	9.1	41	2,32	2,29	2,38	2,28	4	2,32			0,05	1,94	103,58
40	12x	4.1	31	2,27	2,36	2,31	2,35	4	2,32			0,04	1,70	103,77
41	73	5	31	2,35	2,31	2,32	2,32	4	2,33			0,02	0,74	103,91
42	48x	4.1	31	2,34	2,34	2,33	2,32	4	2,33			0,01	0,44	104,14
43	61x	4.1	21.1	2,37	2,28	2,28	2,40	4	2,33			0,06	2,65	104,25
44	20x	5.1	31	2,30	2,36	2,37	2,33	4	2,34			0,03	1,35	104,58
45	03x	3.10	31	2,29	2,37	2,39	2,31	4	2,34			0,05	2,03	104,58
46	29x	3.3	31	2,37	2,39	2,36	2,35	4	2,37			0,02	0,66	105,80
47	42	4.1	32	2,37	2,37	2,37	2,37	4	2,37			0,00	0,15	105,89
48	49	4.1	31	2,30	2,57	2,38	2,40	4	2,41			0,11	4,71	107,82
49	25	5.1	31	2,55	2,53	2,39	2,30	4	2,44			0,12	4,81	109,20
50	78	5.5	31	*2,46*	*2,44*	*2,45*	*2,52*	4	*2,47*		*	0,04	1,46	110,28
51	30	2.3	21.1	*2,61*	*2,62*	*2,60*	*2,60*	0	*2,61*	b	*	0,01	0,22	116,52
52														
53														
54														
55														

	N	Mean	SI	VI
all labs	192	**2,24**	**0,037**	**1,665**
10	% from the mean			
	L		SR	VR
	48		**0,096**	**4,296**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	19x	3.10	21	*0,58*	*0,55*	*0,52*	*0,55*	0	*0,55*	b	*	0,03	4,68	16,53
2	79	3.3	31	*2,62*	*2,52*	*2,48*	*2,56*	0	*2,54*	b	*	0,06	2,23	76,54
3	36x	5.5	31	*2,63*	*2,63*	*2,71*	*2,84*	0	*2,70*	b	*	0,10	3,67	81,31
4	32	5.7	31	3,00	2,99	3,03	3,01	4	3,01			0,02	0,64	90,44
5	50x	4.1	31	3,02	2,95	3,15	2,99	4	3,03			0,08	2,80	91,17
6	15	5.1	21.1	3,00	3,02	3,03	3,12	4	3,04			0,05	1,75	91,54
7	76	5.5	31	3,08	3,14	3,03	3,06	4	3,08			0,05	1,49	92,60
8	39x	5.5	31	3,13	3,13	3,09	3,10	4	3,11			0,02	0,66	93,65
9	13x	5.3	21.1	3,16	2,96	3,20	3,16	4	3,12			0,11	3,47	93,87
10	28x	3.31	21.1	3,19	3,14	3,13	3,11	4	3,14			0,03	1,08	94,55
11	09	5.5	31	3,18	3,15	3,16	3,16	4	3,16			0,01	0,46	95,20
12	44x	4.1	31	3,18	3,18	3,13	3,17	4	3,17			0,02	0,75	95,23
13	52	3.1	31	3,24	3,18	3,25	3,12	4	3,20			0,06	1,88	96,21
14	74x	5.5	21.1	3,24	3,05	3,30	3,32	4	3,23			0,12	3,81	97,11
15	11	5.1	31	3,26	3,24	3,21	3,24	4	3,24			0,02	0,64	97,41
16	72	6.5	21.1	3,22	3,23	3,24	3,26	4	3,24			0,02	0,53	97,41
17	07x	5.5	31	3,23	3,25	3,25	3,26	4	3,25			0,01	0,39	97,71
18	08	6.3	31	3,23	3,30	3,25	3,28	4	3,27			0,03	0,95	98,24
19	23x	5.1	32	3,27	3,25	3,25	3,32	4	3,27			0,03	1,01	98,46
20	77	5.1	31	3,28	3,24	3,30	3,30	4	3,28			0,03	0,86	98,69
21	60	3.3	31	3,23	3,28	3,34	3,28	4	3,28			0,04	1,36	98,70
22	73	5	31	3,30	3,29	3,29	3,25	4	3,28			0,02	0,68	98,76
23	17x	5.5	31	3,25	3,29	3,32	3,30	4	3,29			0,03	0,89	98,99
24	02	5.3	31	3,30	3,30	3,30	3,30	4	3,30			0,00	0,00	99,29
25	43x	4.1	31	3,29	3,36	3,30	3,25	4	3,30			0,05	1,38	99,29
26	48x	4.1	31	3,24	3,45	3,23	3,35	4	3,32			0,10	3,05	99,77
27	64	6.4	21.1	3,35	3,30	3,40	3,26	4	3,33			0,06	1,83	100,12
28	47x	4.1	31	3,33	3,36	3,32	3,30	4	3,33			0,03	0,75	100,12
29	37	5.5	31	3,34	3,33	3,38	3,29	4	3,34			0,04	1,11	100,34
30	61x	4.1	21.1	3,30	3,42	3,34	3,31	4	3,34			0,05	1,63	100,57
31	18x	3.31	31	3,32	3,30	3,44	3,44	4	3,37			0,08	2,27	101,46
32	49	4.1	31	3,32	3,45	3,33	3,40	4	3,38			0,06	1,82	101,55
33	05	3.3	21.1	3,10	3,60	3,30	3,50	4	3,38			0,22	6,57	101,55
34	29x	3.3	31	3,41	3,37	3,37	3,40	4	3,38			0,02	0,60	101,82
35	56	5.5	31	3,35	3,44	3,42	3,37	4	3,39			0,04	1,16	102,10
36	03x	3.10	31	3,38	3,43	3,34	3,45	4	3,40			0,05	1,46	102,30
37	37a	9.1	42	3,34	3,38	3,42	3,46	4	3,40			0,05	1,52	102,30
38	12x	4.1	31	3,38	3,47	3,35	3,42	4	3,40			0,05	1,50	102,35
39	38	4.5	31	3,39	3,42	3,45	3,43	4	3,42			0,02	0,73	102,98
40	46	5.1	35	3,34	3,47	3,45	3,45	4	3,43			0,06	1,72	103,13
41	04a	9.1	42	*3,99*	*3,88*	*2,93*	*2,92*	0	*3,43*	c		0,58	17,05	103,20
42	66	5.5	31	3,39	3,42	3,43	3,49	4	3,43			0,04	1,22	103,28
43	26	5.5	31	3,37	3,33	3,51	3,55	4	3,44			0,11	3,09	103,50
44	20x	5.1	31	3,51	3,47	3,44	3,43	4	3,46			0,04	1,04	104,18
45	25	5.1	31	3,65	3,38	3,59	3,25	4	3,47			0,19	5,37	104,32
46	42	4.1	32	3,50	3,50	3,49	3,51	4	3,50			0,01	0,25	105,33
47	30	2.3	21.1	3,51	3,53	3,61	3,57	4	3,55			0,05	1,34	106,92
48	78	5.5	31	3,57	3,54	3,65	3,50	4	3,57			0,06	1,78	107,26
49	33a	5.1	21	3,53	3,39	3,75	3,62	4	3,57			0,15	4,24	107,49
50	04x	9.1	41	3,59	3,68	3,42	3,61	4	3,58			0,11	3,09	107,56
51	38a	9.1	42	3,76	3,77	3,68	3,84	4	3,76		*	0,07	1,74	113,21
52														
53														
54														
55														

	N	Mean	SI	VI
all labs	188	**3,32**	**0,056**	**1,680**
10	% from the mean			

L	SR	VR
47	**0,157**	**4,729**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	19x	3.10	21	*0,40*	*0,39*	*0,40*	*0,43*	0	*0,41*	b	*	0,02	4,32	5,71
2	30	2.3	21.1	5,82	5,99	5,87	5,77	4	5,86		*	0,10	1,64	82,08
3	74x	5.5	21.1	6,13	6,17	6,18	6,12	4	6,15		*	0,03	0,48	86,12
4	79	3.3	31	6,54	6,43	6,01	5,95	4	6,23		*	0,30	4,75	87,23
5	36x	5.5	31	6,56	6,51	6,52	6,54	4	6,53			0,02	0,34	91,48
6	76	5.5	31	6,75	6,49	6,69	6,31	4	6,56			0,20	3,09	91,87
7	02	5.3	31	6,80	6,70	6,40	6,40	4	6,58			0,21	3,14	92,07
8	77	5.1	31	6,70	6,57	6,75	6,78	4	6,70			0,09	1,38	93,82
9	12x	5.1	31	5,95	6,93	7,21	6,91	4	6,75			0,55	8,14	94,55
10	26	5.5	35	6,95	6,61	6,66	7,03	4	6,81			0,21	3,06	95,40
11	47x	4.1	31	6,55	6,57	7,10	7,14	4	6,84			0,32	4,73	95,78
12	72	6.4	21.1	6,90	6,81	6,85	6,88	4	6,86			0,04	0,57	96,06
13	33a	5.1	21	6,87	6,96	6,75	6,87	4	6,86			0,09	1,26	96,10
14	46	5.1	35	6,81	6,79	6,90	7,08	4	6,90			0,13	1,92	96,55
15	50x	4.1	31	6,81	6,99	6,94	6,93	4	6,92			0,08	1,11	96,87
16	39x	5.5	31	6,95	6,92	6,88	6,94	4	6,92			0,03	0,45	96,94
17	64	6.4	28	6,94	7,22	6,92	6,66	4	6,94			0,23	3,30	97,11
18	11	5.1	31	6,88	7,03	6,99	6,93	4	6,96			0,07	0,95	97,43
19	04x	9.1	41	6,92	6,97	7,02	7,05	4	6,99			0,06	0,82	97,88
20	08	6.3	31	6,85	7,07	7,02	7,03	4	6,99			0,10	1,39	97,92
21	60	3.3	31	7,02	6,92	7,10	7,03	4	7,02			0,08	1,07	98,24
22	44x	4.1	31	7,02	7,09	7,03	6,96	4	7,03			0,05	0,76	98,37
23	37	5.5	31	6,91	7,04	7,10	7,06	4	7,03			0,08	1,17	98,41
24	20x	5.1	31	7,11	7,00	6,99	7,07	4	7,04			0,06	0,81	98,62
25	52	3.1	31	7,05	7,05	6,93	7,15	4	7,05			0,09	1,28	98,65
26	56	5.5	31	6,97	7,14	7,08	7,13	4	7,08			0,08	1,08	99,16
27	38a	9.1	42	7,10	7,09	7,09	7,09	4	7,09			0,00	0,07	99,32
28	17x	5.5	31	7,11	7,19	7,08	7,03	4	7,10			0,07	0,94	99,46
29	18x	3.5	31	7,15	7,23	7,14	6,92	4	7,11			0,13	1,83	99,55
30	23x	5.1	31	7,12	7,14	7,17	7,10	4	7,13			0,03	0,42	99,88
31	49	4.1	31	7,12	7,16	7,20	7,13	4	7,15			0,04	0,50	100,16
32	66	5.5	31	7,09	7,17	7,21	7,23	4	7,18			0,06	0,86	100,47
33	04a	9.1	42	7,36	7,24	7,08	7,20	4	7,22			0,12	1,60	101,10
34	78	5.5	31	7,14	7,24	7,24	7,39	4	7,25			0,10	1,42	101,56
35	38x	4.5	31	7,16	7,13	7,22	7,61	4	7,28			0,22	3,07	101,95
36	48x	4.1	31	7,30	7,16	7,54	7,26	4	7,32			0,16	2,18	102,48
37	61x	4.1	28	7,38	7,34	7,33	7,24	4	7,32			0,06	0,81	102,54
38	43x	4.1	31	7,27	7,39	7,35	7,32	4	7,33			0,05	0,69	102,68
39	37a	9.1	42	7,44	7,31	7,26	7,39	4	7,35			0,08	1,09	102,93
40	07x	5.5	31	7,33	7,38	7,45	7,29	4	7,36			0,07	0,94	103,10
41	32	5.7	31	7,39	7,45	7,31	7,39	4	7,39			0,05	0,74	103,42
42	28	3.31	21.1	7,44	7,38	7,45	7,39	4	7,42			0,04	0,47	103,84
43	29x	3.3	31	7,46	7,46	7,38	7,43	4	7,43			0,04	0,53	104,07
44	42	4.1	32	7,53	7,43	7,44	7,45	4	7,46			0,04	0,60	104,51
45	73	5	31	7,58	7,58	7,61	7,61	4	7,60			0,02	0,23	106,36
46	03x	3.10	31	7,56	7,75	7,55	7,65	4	7,63			0,09	1,22	106,81
47	25	5.1	31	7,46	7,53	8,03	7,66	4	7,67			0,25	3,29	107,41
48	09	5.5	31	7,59	7,75	8,10	8,10	4	7,89		*	0,25	3,23	110,46
49	15	5.1	21.1	7,73	7,99	7,68	8,25	4	7,91		*	0,26	3,32	110,80
50	05	3.3	21.1	7,65	8,15	7,95	8,10	4	7,96		*	0,22	2,83	111,50
51	01x	3.21	21.1	8,60	8,30	8,80	8,30	4	8,50		*	0,24	2,88	119,03
52	13x	5.3	21.1	8,38	8,66	8,61	8,59	4	8,56		*	0,12	1,44	119,87
53														
54														
55														

	N	Mean	SI	VI
all labs	204	**7,14**	**0,120**	**1,679**
10	% from the mean			

L	SR	VR
51	**0,500**	**7,001**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: K **Sample: 2** Dimension: 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	79	3.3	31	*4,81*	*4,71*	*4,76*	*4,72*	0	*4,75*	b	*	0,04	0,90	64,87
2	30	2.3	21.1	6,30	5,88	6,31	6,04	4	6,13		*	0,21	3,47	83,74
3	74x	5.5	21.1	6,21	6,26	6,20	6,23	4	6,23		*	0,03	0,43	85,04
4	02	5.3	31	6,80	6,50	6,40	6,60	4	6,58		*	0,17	2,60	89,82
5	36x	5.5	31	6,66	6,53	6,57	6,63	4	6,60			0,06	0,89	90,12
6	76	5.5	31	6,88	6,80	6,52	6,91	4	6,78			0,18	2,68	92,58
7	77	5.1	31	6,84	6,84	6,79	6,85	4	6,83			0,03	0,40	93,30
8	08	6.3	31	6,86	7,03	7,02	6,83	4	6,94			0,10	1,51	94,74
9	39x	5.5	31	6,83	6,98	6,98	6,97	4	6,94			0,07	1,06	94,80
10	12x	5.1	31	7,04	7,11	6,93	6,79	4	6,97			0,14	2,01	95,15
11	19x	3.10	21	7,14	6,88	6,83	7,06	4	6,98			0,15	2,11	95,31
12	20x	5.1	31	7,02	6,98	6,98	6,99	4	6,99			0,02	0,27	95,52
13	11	5.1	31	7,12	6,98	7,05	6,95	4	7,03			0,08	1,08	95,96
14	60	3.3	31	7,22	6,77	7,02	7,17	4	7,05			0,20	2,91	96,25
15	50x	4.1	31	6,98	7,15	7,21	7,00	4	7,08			0,11	1,57	96,76
16	23x	5.1	31	7,03	7,14	7,16	7,02	4	7,09			0,07	1,03	96,82
17	17x	5.5	31	7,19	7,34	7,06	7,01	4	7,15			0,15	2,07	97,67
18	72	6.4	21.1	7,18	7,21	7,15	7,10	4	7,16			0,05	0,66	97,81
19	26	5.5	35	6,84	7,47	7,12	7,24	4	7,17			0,26	3,66	97,91
20	47x	4.1	31	7,14	7,13	7,26	7,14	4	7,17			0,06	0,86	97,91
21	18x	3.5	31	7,25	7,16	7,17	7,10	4	7,17			0,06	0,87	97,93
22	52	3.1	31	7,22	7,15	7,20	7,11	4	7,17			0,05	0,69	97,95
23	49	4.1	31	7,16	7,21	7,20	7,18	4	7,19			0,02	0,31	98,18
24	44x	4.1	31	7,11	7,22	7,31	7,16	4	7,20			0,09	1,19	98,36
25	64	6.4	28	7,22	7,40	7,02	7,20	4	7,21			0,16	2,15	98,49
26	33a	5.1	21	7,32	7,91	6,96	6,78	4	7,24			0,50	6,88	98,94
27	78	5.5	31	7,22	7,39	7,17	7,28	4	7,27			0,09	1,30	99,24
28	66	5.5	31	7,31	7,31	7,28	7,29	4	7,30			0,02	0,21	99,69
29	56	5.5	31	7,18	7,26	7,40	7,36	4	7,30			0,10	1,37	99,70
30	04x	9.1	41	7,27	7,31	7,30	7,35	4	7,31			0,03	0,45	99,82
31	38a	9.1	42	7,28	7,33	7,30	7,33	4	7,31			0,02	0,34	99,86
32	04a	9.1	42	7,49	7,53	7,30	7,29	4	7,40			0,13	1,69	101,12
33	46	5.1	35	7,44	7,35	7,46	7,47	4	7,43			0,05	0,74	101,50
34	43x	4.1	31	7,43	7,34	7,48	7,50	4	7,44			0,07	0,96	101,60
35	37	5.5	31	7,42	7,51	7,40	7,47	4	7,45			0,05	0,67	101,77
36	48x	4.1	31	7,45	7,45	7,50	7,57	4	7,49			0,06	0,77	102,35
37	07x	5.5	31	7,58	7,47	7,56	7,57	4	7,55			0,05	0,67	103,07
38	42	4.1	32	7,59	7,56	7,54	7,53	4	7,55			0,03	0,38	103,16
39	61x	4.1	28	7,54	7,55	7,71	7,49	4	7,57			0,10	1,26	103,44
40	15	5.1	21.1	7,57	7,58	7,66	7,53	4	7,59			0,05	0,72	103,61
41	29x	3.3	31	7,56	7,57	7,63	7,63	4	7,60			0,04	0,50	103,79
42	28	3.31	21.1	7,60	7,64	7,62	7,63	4	7,62			0,02	0,22	104,13
43	73	5	31	7,69	7,65	7,67	7,69	4	7,68			0,02	0,25	104,84
44	37a	9.1	42	7,62	7,78	7,60	7,80	4	7,70			0,10	1,36	105,19
45	38x	4.5	31	7,86	7,64	7,57	7,75	4	7,71			0,13	1,65	105,25
46	32	5.7	31	7,74	7,69	7,82	7,72	4	7,74			0,06	0,73	105,73
47	03x	3.10	31	7,69	7,76	7,84	7,77	4	7,77			0,06	0,79	106,07
48	09	5.5	31	7,78	7,72	8,20	7,44	4	7,78			0,32	4,05	106,34
49	25	5.1	31	7,81	8,17	8,47	7,91	4	8,09		*	0,29	3,63	110,54
50	13x	5.3	21.1	8,79	8,52	8,52	8,26	4	8,52		*	0,22	2,54	116,42
51	01x	3.21	21.1	8,60	8,80	8,90	8,80	4	8,78		*	0,13	1,43	119,87
52	05	3.3	21.1	8,75	*9,05a*	8,75	8,80	3	8,77		*	0,03	0,33	119,76
53														
54														
55														

	N	Mean	SI	VI
all labs	203	**7,32**	**0,103**	**1,413**
10	% from the mean			

L	SR	VR
51	**0,512**	**6,982**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	19x	3.10	21	*1,01*	*1,22*	*1,26*	*1,19*	0	*1,17*	b	*	0,11	9,61	10,34
2	30	2.3	21.1	*8,31*	*8,34*	*8,31*	*8,37*	0	*8,33*	b	*	0,03	0,35	73,66
3	79	3.3	31	*8,24*	*8,72*	*8,68*	*8,08*	0	*8,43*	b	*	0,32	3,77	74,52
4	02	5.3	31	9,80	9,40	10,20	10,00	4	9,85		*	0,34	3,47	87,11
5	76	5.5	31	10,72	10,07	10,19	10,45	4	10,36			0,29	2,79	91,60
6	11	5.1	31	10,50	10,60	10,60	10,30	4	10,50			0,14	1,35	92,86
7	07x	5.5	31	10,50	10,60	10,60	10,60	4	10,58			0,05	0,47	93,52
8	66	5.5	31	10,50	10,60	10,60	10,70	4	10,60			0,08	0,77	93,74
9	04x	9.1	41	10,58	10,62	10,62	10,68	4	10,63			0,04	0,39	93,96
10	36x	5.5	31	10,68	10,61	10,63	10,60	4	10,63			0,04	0,33	94,01
11	50x	4.1	31	10,55	11,01	10,86	10,68	4	10,78			0,20	1,87	95,29
12	08	6.3	31	10,80	10,70	10,90	10,80	4	10,80			0,08	0,76	95,51
13	77	5.1	31	10,75	10,80	10,78	10,87	4	10,80			0,05	0,47	95,51
14	39x	5.5	31	10,90	11,00	10,70	10,90	4	10,88			0,13	1,16	96,17
15	74x	5.5	21.1	10,92	10,82	10,85	10,93	4	10,88			0,05	0,49	96,22
16	52	3.1	31	10,95	10,89	10,96	10,86	4	10,92			0,05	0,44	96,53
17	72	6.4	21.1	10,88	11,12	10,92	11,05	4	10,99			0,11	1,02	97,21
18	47x	4.1	31	11,00	11,00	11,00	11,10	4	11,03			0,05	0,45	97,50
19	44x	4.1	31	11,10	11,20	11,00	10,90	4	11,05			0,13	1,17	97,72
20	42	4.1	32	11,11	11,11	10,92	11,10	4	11,06			0,09	0,84	97,84
21	04a	9.1	42	11,31	11,07	10,88	11,01	4	11,07			0,18	1,63	97,88
22	38a	9.1	42	11,10	11,10	11,10	11,10	4	11,10			0,00	0,00	98,16
23	23x	5.1	31	11,09	11,09	11,28	11,12	4	11,15			0,09	0,82	98,56
24	60	3.3	31	11,14	10,95	11,59	10,93	4	11,15			0,31	2,75	98,62
25	18x	3.5	31	11,37	11,27	10,80	11,18	4	11,15			0,25	2,25	98,64
26	15	5.1	21.1	11,50	11,40	11,20	11,10	4	11,30			0,18	1,62	99,93
27	49	4.1	31	11,31	11,30	11,26	11,42	4	11,32			0,07	0,60	100,13
28	20x	5.1	31	11,34	11,34	11,33	11,31	4	11,33			0,01	0,12	100,20
29	78	5.5	31	11,30	11,30	11,40	11,40	4	11,35			0,06	0,51	100,37
30	43x	4.1	31	11,31	11,36	11,47	11,40	4	11,39			0,07	0,59	100,68
31	17x	5.5	31	11,11	11,04	11,76	11,64	4	11,39			0,37	3,21	100,71
32	26	5.5	35	11,40	10,90	11,64	11,66	4	11,40			0,35	3,10	100,82
33	61x	4.1	28	11,68	11,42	11,36	11,24	4	11,43			0,19	1,63	101,04
34	33a	5.1	21	10,54	10,94	12,38	11,92	4	11,45			0,85	7,44	101,21
35	37a	9.1	42	11,38	11,46	11,54	11,62	4	11,50			0,10	0,90	101,70
36	29x	3.3	31	11,73	11,32	11,75	11,58	4	11,60			0,20	1,71	102,54
37	05	3.3	21.1	11,45	12,10	11,40	11,45	4	11,60			0,33	2,88	102,59
38	46	5.1	35	11,50	11,50	11,70	11,70	4	11,60			0,12	1,00	102,59
39	28	3.31	21.1	11,62	11,68	11,66	11,69	4	11,66			0,03	0,27	103,14
40	32	5.7	31	11,61	11,69	11,76	11,72	4	11,69			0,07	0,57	103,42
41	12x	5.1	31	11,60	11,93	11,77	11,53	4	11,71			0,18	1,55	103,54
42	48x	4.1	31	11,77	11,58	11,78	11,76	4	11,72			0,10	0,81	103,67
43	37	5.5	31	11,75	11,79	11,65	11,84	4	11,76			0,08	0,69	103,98
44	73	5	31	11,80	11,80	11,70	11,90	4	11,80			0,08	0,69	104,35
45	25	5.1	31	11,62	12,11	12,17	11,68	4	11,90			0,28	2,39	105,20
46	56	5.5	31	11,44	12,06	11,74	12,47	4	11,93			0,44	3,70	105,48
47	09	5.5	31	11,87	11,99	12,81	11,97	4	12,16			0,44	3,59	107,54
48	64	6.4	28	12,53	12,27	11,97	12,23	4	12,25			0,23	1,87	108,33
49	38x	4.5	31	12,20	12,30	12,40	12,40	4	12,33			0,10	0,78	109,00
50	03x	3.10	31	12,10	12,75	12,95	12,53	4	12,58		*	0,36	2,90	111,27
51	13x	5.3	21.1	12,83	13,54	12,76	11,71	4	12,71		*	0,75	5,93	112,40
52	01x	3.21	21.1	*14,10*	*15,20*	*13,90*	*14,40*	0	*14,40*	b	*	0,57	3,97	127,35
53														
54														
55														

	N	Mean	SI	VI
all labs	192	**11,31**	**0,183**	**1,620**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
48	**0,580**	**5,130**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	19x	3.10	21	*0,34*	*0,27*	*0,20*	*0,22*	0	*0,26*	b	*	0,07	25,21	1,39
2	47x	4.1	31	*3,33*	*3,36*	*3,32*	*3,30*	0	*3,33*	b	*	0,03	0,75	17,91
3	30	2.3	21.1	*12,52*	*12,57*	*12,51*	*12,60*	0	*12,55*	b	*	0,04	0,32	67,53
4	79	3.3	31	14,27	14,63	14,63	15,12	4	14,66		*	0,35	2,38	78,92
5	74x	5.5	21.1	15,31	15,22	15,37	15,14	4	15,26		*	0,10	0,66	82,13
6	36x	5.5	31	15,19	16,51	15,99	15,84	4	15,88		*	0,54	3,42	85,48
7	02	5.3	31	16,70	16,40	15,60	15,70	4	16,10		*	0,54	3,33	86,65
8	07x	5.5	31	17,20	17,40	17,20	17,10	4	17,23			0,13	0,73	92,71
9	76	5.5	31	17,20	17,61	17,48	16,72	4	17,25			0,39	2,28	92,85
10	05	3.3	21.1	17,80	17,85	17,20	17,60	4	17,61			0,30	1,68	94,79
11	38a	9.1	42	17,60	17,60	17,70	17,80	4	17,68			0,10	0,54	95,13
12	04a	9.1	42	17,86	18,54	17,23	17,46	4	17,77			0,57	3,23	95,65
13	39x	5.5	31	17,90	17,70	18,00	17,60	4	17,80			0,18	1,03	95,80
14	04x	9.1	41	17,83	17,82	17,78	17,80	4	17,81			0,02	0,12	95,84
15	50x	4.1	31	17,80	18,08	17,96	17,43	4	17,82			0,28	1,59	95,90
16	66	5.5	31	18,00	17,90	17,60	17,90	4	17,85			0,17	0,97	96,07
17	33a	5.1	21	17,85	18,57	17,64	17,82	4	17,97			0,41	2,28	96,72
18	77	5.1	31	18,18	18,32	17,84	17,77	4	18,03			0,26	1,47	97,03
19	72	6.4	21.1	18,00	18,14	18,15	18,02	4	18,08			0,08	0,43	97,29
20	52	3.1	31	17,68	18,27	18,25	18,14	4	18,09			0,28	1,53	97,33
21	12x	5.1	31	19,31	17,90	17,07	18,93	4	18,30			1,02	5,55	98,51
22	43x	4.1	31	18,21	18,28	18,44	18,83	4	18,44			0,28	1,50	99,25
23	17x	5.5	31	18,56	18,40	18,53	18,42	4	18,48			0,08	0,43	99,45
24	18x	3.5	31	18,31	18,09	18,67	18,85	4	18,48			0,34	1,86	99,45
25	49	4.1	31	18,68	18,31	18,59	18,45	4	18,51			0,16	0,88	99,61
26	61x	4.1	28	19,06	18,36	18,52	18,15	4	18,52			0,39	2,10	99,69
27	08	6.3	31	18,60	18,70	18,40	18,40	4	18,53			0,15	0,81	99,70
28	78	5.5	31	19,10	18,20	19,00	18,00	4	18,58			0,56	2,99	99,97
29	37a	9.1	42	18,51	18,65	18,55	18,69	4	18,60			0,08	0,45	100,11
30	32	5.7	31	18,60	18,56	18,69	18,62	4	18,62			0,06	0,30	100,21
31	11	5.1	31	18,50	18,70	18,50	19,10	4	18,70			0,28	1,51	100,64
32	23x	5.1	31	18,50	18,86	18,88	18,60	4	18,71			0,19	1,01	100,70
33	42	4.1	32	18,66	19,49	18,16	19,10	4	18,85			0,57	3,04	101,47
34	37	5.5	31	18,86	18,73	18,97	18,92	4	18,87			0,10	0,55	101,56
35	29x	3.3	31	19,10	19,22	18,81	18,75	4	18,97			0,23	1,19	102,10
36	73	5	31	18,60	19,10	19,10	19,10	4	18,98			0,25	1,32	102,12
37	15	5.1	21.1	18,70	19,10	19,60	18,60	4	19,00			0,45	2,39	102,26
38	28	3.31	21.1	18,86	19,06	19,04	19,15	4	19,03			0,12	0,64	102,41
39	20x	5.1	31	19,14	19,09	19,11	19,14	4	19,12			0,02	0,13	102,91
40	44x	4.1	31	19,30	19,30	18,90	19,10	4	19,15			0,19	1,00	103,07
41	25	5.1	31	19,87	19,27	19,09	18,69	4	19,23			0,49	2,55	103,50
42	64	6.4	28	19,31	19,67	19,27	18,91	4	19,29			0,31	1,61	103,82
43	26	5.5	35	18,90	19,30	19,40	20,30	4	19,48			0,59	3,03	104,82
44	56	5.5	31	19,76	19,32	19,68	19,28	4	19,51			0,25	1,26	105,00
45	48x	4.1	31	20,10	19,11	20,20	19,12	4	19,63			0,60	3,05	105,66
46	46	5.1	35	20,10	19,60	20,10	19,50	4	19,83			0,32	1,61	106,70
47	03x	3.10	31	19,53	20,16	19,55	20,78	4	20,01			0,59	2,97	107,67
48	38x	4.5	31	19,90	20,30	20,30	20,10	4	20,15			0,19	0,95	108,45
49	13x	5.3	21.1	21,65	21,64	19,93	20,42	4	20,91		*	0,87	4,17	112,54
50	09	5.5	31	20,21	20,47	21,30	21,92	4	20,98		*	0,78	3,73	112,89
51	60	3.3	31	20,43	22,04	21,82	21,11	4	21,35		*	0,73	3,42	114,90
52	01x	3.21	21.1	22,20	23,40	22,90	22,60	4	22,78		*	0,51	2,22	122,58
53														
54														
55														

	N	Mean	SI	VI
all labs	196	**18,58**	**0,336**	**1,808**
10	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
49	**1,422**	**7,654**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Zn **Sample: 1** Dimension: mg/kg

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	36x	5.5	31	*22,31*	*22,76*	*22,57*	*22,43*	0	*22,52*	b	*	0,19	0,86	72,20
2	32	5.7	31	*25,44*	*25,31*	*25,26*	*25,34*	0	*25,34*	b	*	0,08	0,30	81,24
3	78	5.5	31	26,00	28,00	28,00	26,00	4	27,00			1,15	4,28	86,57
4	20x	5.1	31	27,51	27,52	27,42	27,46	4	27,48			0,05	0,17	88,10
5	52	3.1	31	29,01	27,17	27,71	29,11	4	28,25			0,96	3,40	90,58
6	04x	9.1	41	28,20	29,10	29,70	29,70	4	29,18			0,71	2,43	93,54
7	77	5.1	31	29,80	28,44	29,76	29,21	4	29,30			0,63	2,17	93,95
8	33a	5.1	21	29,40	30,90	29,00	30,30	4	29,90			0,86	2,88	95,87
9	23x	5.1	31	29,67	29,59	29,69	30,91	4	29,96			0,63	2,11	96,07
10	11	5.1	31	30,00	29,90	29,90	30,30	4	30,03			0,19	0,63	96,27
11	38x	5.5	31	30,20	30,70	30,70	29,00	4	30,15			0,80	2,66	96,67
12	07x	5.5	31	30,20	29,90	30,30	30,40	4	30,20			0,22	0,72	96,83
13	03x	3.10	31	31,00	30,00	30,00	30,00	4	30,25			0,50	1,65	96,99
14	44x	4.1	32	30,30	30,80	30,00	29,90	4	30,25			0,40	1,34	96,99
15	39x	5.5	35	30,00	30,20	30,50	30,30	4	30,25			0,21	0,69	96,99
16	50x	4.1	31	30,39	29,81	30,24	30,93	4	30,34			0,46	1,52	97,29
17	29x	3.3	31	30,93	30,44	29,96	30,06	4	30,35			0,44	1,45	97,30
18	26	5.5	31	31,30	30,70	27,70	33,30	4	30,75			2,32	7,54	98,59
19	66	5.5	31	30,50	30,80	30,90	31,20	4	30,85			0,29	0,94	98,92
20	08	6.3	31	30,40	32,70	32,10	28,90	4	31,03			1,72	5,54	99,48
21	37	5.5	31	31,08	30,67	31,29	31,50	4	31,14			0,35	1,14	99,83
22	47x	4.1	31	31,20	31,10	31,20	31,20	4	31,18			0,05	0,16	99,96
23	13	5.3	21.1	31,82	30,78	31,34	30,89	4	31,21			0,47	1,52	100,06
24	25	5.1	31	31,10	31,50	32,30	30,20	4	31,28			0,87	2,79	100,28
25	64	6.4	21.1	29,85	30,89	33,61	31,48	4	31,46			1,59	5,04	100,86
26	17x	5.5	31	31,41	32,21	32,24	31,13	4	31,75			0,56	1,77	101,79
27	04a	9.1	42	31,20	32,10	31,30	32,50	4	31,78			0,63	1,98	101,88
28	42	4.1	32	31,80	31,80	31,80	31,70	4	31,78			0,05	0,16	101,88
29	46	5.1	31	31,00	32,70	32,30	31,20	4	31,80			0,83	2,61	101,96
30	49	4.1	31	31,60	31,60	32,00	32,10	4	31,83			0,26	0,83	102,04
31	60	3.3	31	31,80	31,99	32,15	32,21	4	32,04			0,18	0,57	102,72
32	74x	5.5	21.1	30,87	32,42	32,84	32,41	4	32,14			0,87	2,70	103,04
33	56	5.5	31	32,70	32,60	31,70	32,10	4	32,28			0,46	1,44	103,48
34	12x	5.1	31	29,70	32,84	33,77	33,04	4	32,34			1,80	5,58	103,68
35	02	5.3	31	33,50	33,30	32,00	31,60	4	32,60			0,94	2,89	104,53
36	18x	3.31	31	*38,42*	*30,82*	*31,93*	*29,70*	0	*32,72*	c		3,91	11,95	104,90
37	38a	9.1	42	32,90	32,70	32,80	32,80	4	32,80			0,08	0,25	105,17
38	37a	9.1	42	32,95	33,35	33,45	33,05	4	33,20			0,24	0,72	106,45
39	73	5	31	33,40	33,20	33,00	33,20	4	33,20			0,16	0,49	106,45
40	48x	4.1	31	33,37	32,90	34,07	32,95	4	33,32			0,54	1,62	106,84
41	76	5.5	31	32,90	34,30	37,60	31,70	4	34,13			2,55	7,47	109,42
42	09	5.5	31	33,79	33,61	33,90	*36,034a*	3	33,76			0,15	0,44	108,26
43	43x	4.1	31	36,50	35,30	35,80	35,20	4	35,70			0,59	1,67	114,47
44	05	3.3	21.1	*47,50*	*47,50*	*47,50*	*48a*	0	*47,50*	b	*	0,00	0,00	152,30
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	N	Mean	SI	VI
all labs	159	**31,19**	**0,670**	**2,148**
15	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
40	**1,735**	**5,559**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Zn **Sample: 2** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	36x	5.5	31	*20,81*	*21,32*	*22,65*	*21,76*	0	*21,64*	b	*	0,78	3,61	79,09
2	78	5.5	31	24,10	22,70	22,60	22,80	4	23,05		*	0,70	3,06	84,26
3	20x	5.1	31	23,50	23,21	23,83	23,15	4	23,42			0,31	1,33	85,62
4	32	5.7	31	24,18	24,05	24,16	24,09	4	24,12			0,06	0,25	88,17
5	38x	5.5	31	25,10	26,10	25,40	25,70	4	25,58			0,43	1,67	93,49
6	08	6.3	31	26,40	25,90	25,50	24,70	4	25,63			0,72	2,80	93,67
7	33a	5.1	21	26,30	26,40	25,20	25,50	4	25,85			0,59	2,29	94,49
8	52	3.1	31	26,74	25,26	25,63	26,25	4	25,97			0,66	2,53	94,93
9	23x	5.1	31	25,50	26,15	27,04	25,79	4	26,12			0,67	2,56	95,48
10	77	5.1	31	25,92	26,14	26,34	26,29	4	26,17			0,19	0,72	95,67
11	66	5.5	31	26,60	26,60	26,40	26,50	4	26,53			0,10	0,36	96,96
12	04x	9.1	41	26,70	26,60	26,50	26,70	4	26,63			0,10	0,36	97,33
13	39x	5.5	35	26,60	26,70	26,40	27,10	4	26,70			0,29	1,10	97,60
14	18x	3.31	31	27,28	27,18	26,16	26,87	4	26,87			0,51	1,88	98,23
15	29x	3.3	31	27,16	26,05	28,57	25,84	4	26,91			1,25	4,65	98,35
16	37	5.5	31	26,72	27,44	26,72	26,82	4	26,93			0,35	1,29	98,42
17	07x	5.5	31	26,90	26,90	26,90	27,10	4	26,95			0,10	0,37	98,52
18	44x	4.1	32	26,40	27,40	27,20	26,90	4	26,98			0,43	1,61	98,61
19	11	5.1	31	27,10	26,80	27,00	27,10	4	27,00			0,14	0,52	98,70
20	03x	3.10	31	26,00	28,00	27,00	27,00	4	27,00			0,82	3,02	98,70
21	13	5.3	21.1	27,48	26,88	27,37	26,38	4	27,03			0,50	1,87	98,80
22	50x	4.1	31	26,83	26,45	27,52	28,60	4	27,35			0,94	3,45	99,98
23	17x	5.5	31	27,88	27,74	27,19	26,74	4	27,39			0,52	1,91	100,11
24	26	5.5	31	27,60	26,90	25,10	30,20	4	27,45			2,11	7,70	100,34
25	25	5.1	31	28,30	27,90	26,80	27,10	4	27,53			0,69	2,52	100,62
26	49	4.1	31	27,90	27,90	26,90	27,40	4	27,53			0,48	1,74	100,62
27	47x	4.1	31	27,70	27,70	27,40	27,40	4	27,55			0,17	0,63	100,71
28	04a	9.1	42	27,10	27,10	28,40	28,30	4	27,73			0,72	2,61	101,35
29	74x	5.5	21.1	27,83	27,62	*36,54a*	28,02	3	27,82			0,20	0,72	101,71
30	42	4.1	32	28,60	28,00	27,90	27,90	4	28,10			0,34	1,20	102,72
31	64	6.4	21.1	26,55	28,92	29,13	28,21	4	28,20			1,17	4,15	103,09
32	60	3.3	31	28,66	26,87	29,98	28,09	4	28,40			1,29	4,55	103,82
33	12x	5.1	31	29,95	29,01	26,43	29,02	4	28,60			1,51	5,29	104,56
34	02	5.3	31	29,00	28,60	27,90	29,00	4	28,63			0,52	1,81	104,64
35	46	5.1	31	28,90	29,40	28,20	28,10	4	28,65			0,61	2,14	104,73
36	56	5.5	31	29,60	28,80	28,80	28,10	4	28,83			0,61	2,13	105,37
37	37a	9.1	42	28,72	29,05	28,75	29,08	4	28,90			0,19	0,66	105,64
38	38a	9.1	42	29,30	29,30	29,00	29,50	4	29,28			0,21	0,70	107,01
39	48x	4.1	31	28,93	29,32	29,47	29,79	4	29,38			0,36	1,22	107,39
40	73	5	31	29,30	29,60	29,20	29,50	4	29,40			0,18	0,62	107,47
41	76	5.5	31	28,00	31,10	27,80	32,00	4	29,73			2,14	7,20	108,66
42	43x	4.1	31	30,40	30,30	30,90	29,90	4	30,38			0,41	1,35	111,04
43	09	5.5	31	29,61	29,77	31,95	32,15	4	30,87			1,36	4,42	112,85
44	05	3.3	21.1	*45,00*	*45,00*	*45,00*	*45,00*	0	*45,00*	b	*	0,00	0,00	164,50
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	N	Mean	SI	VI
all labs	167	**27,36**	**0,611**	**2,235**
15	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
42	**1,652**	**6,040**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Zn **Sample: 3** Dimension: mg/kg

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean			Lab.standard dev. Si	Vi	Recovery %
1	52	3.1	31	10,68	10,99	12,92	11,87	4	11,62		*	1,01	8,66	77,79
2	36x	5.5	31	12,56	11,51	11,98	12,06	4	12,03		*	0,43	3,58	80,55
3	32	5.7	31	12,11	12,28	12,15	12,18	4	12,18		*	0,07	0,60	81,57
4	78	5.5	31	12,90	12,60	12,60	12,90	4	12,75			0,17	1,36	85,39
5	29x	3.3	31	13,49	12,74	13,24	13,19	4	13,17			0,31	2,37	88,17
6	18x	3.31	31	13,74	13,63	13,02	14,14	4	13,63			0,46	3,40	91,30
7	77	5.1	31	13,43	13,70	13,94	14,20	4	13,82			0,33	2,38	92,54
8	08	6.3	31	15,10	12,70	14,60	13,90	4	14,08			1,04	7,39	94,27
9	07x	5.5	31	13,90	15,10	13,60	13,80	4	14,10			0,68	4,81	94,43
10	20x	5.1	31	14,15	13,78	14,06	14,50	4	14,12			0,30	2,10	94,58
11	66	5.5	31	14,20	14,00	14,20	14,10	4	14,13			0,10	0,68	94,60
12	03x	3.10	31	13,00	16,00	14,00	14,00	4	14,25			1,26	8,83	95,44
13	44x	4.1	32	14,40	14,50	14,40	14,00	4	14,33			0,22	1,55	95,94
14	39x	5.5	35	14,40	14,40	14,50	14,30	4	14,40			0,08	0,57	96,44
15	50x	4.1	31	14,34	13,98	14,55	14,79	4	14,42			0,34	2,38	96,54
16	23x	5.1	31	14,02	15,97	14,13	14,05	4	14,54			0,95	6,55	97,40
17	33a	5.1	21	13,70	14,50	14,80	15,70	4	14,68			0,83	5,63	98,28
18	47x	4.1	31	14,80	14,80	14,70	14,90	4	14,80			0,08	0,55	99,12
19	60	3.3	31	14,56	14,98	15,45	14,41	4	14,85			0,47	3,15	99,46
20	11	5.1	31	14,60	15,10	15,10	14,70	4	14,88			0,26	1,77	99,62
21	04x	9.1	41	14,30	14,90	15,10	15,60	4	14,98			0,54	3,59	100,29
22	56	5.5	31	14,90	15,00	15,30	14,80	4	15,00			0,22	1,44	100,46
23	38x	5.5	31	15,00	15,00	15,10	15,10	4	15,05			0,06	0,38	100,80
24	02	5.3	31	14,60	14,70	15,50	15,70	4	15,13			0,56	3,68	101,30
25	04a	9.1	42	16,00	15,00	15,10	15,50	4	15,40			0,45	2,95	103,14
26	42	4.1	32	15,20	15,30	15,10	16,00	4	15,40			0,41	2,65	103,14
27	73	5	31	15,50	15,40	15,40	15,40	4	15,43			0,05	0,32	103,31
28	37	5.5	31	15,17	15,79	15,38	15,59	4	15,48			0,27	1,73	103,69
29	43x	4.1	31	15,60	15,50	16,20	15,30	4	15,65			0,39	2,47	104,81
30	38a	9.1	42	15,60	15,70	15,80	15,90	4	15,75			0,13	0,82	105,48
31	46	5.1	31	15,90	16,30	15,80	15,60	4	15,90			0,29	1,85	106,49
32	26	5.5	31	15,50	16,20	15,00	17,00	4	15,93			0,87	5,46	106,66
33	17x	5.5	31	16,89	15,95	15,43	15,44	4	15,93			0,69	4,31	106,67
34	74x	5.5	21.1	15,99	16,93	15,44	15,70	4	16,02			0,65	4,06	107,26
35	13	5.3	21.1	16,27	16,72	15,68	15,68	4	16,09			0,51	3,14	107,74
36	76	5.5	31	16,10	15,70	16,70	16,20	4	16,18			0,41	2,54	108,33
37	37a	9.1	42	16,43	16,41	16,57	16,59	4	16,50			0,09	0,56	110,51
38	49	4.1	31	15,80	17,20	16,00	17,00	4	16,50			0,70	4,26	110,51
39	48x	4.1	31	16,77	16,61	16,75	16,61	4	16,69			0,09	0,52	111,75
40	12x	5.1	31	16,36	16,56	17,15	16,78	4	16,71			0,34	2,02	111,93
41	25	5.1	31	16,70	18,80	15,80	17,80	4	17,28		*	1,30	7,55	115,70
42	09	5.5	31	17,86	17,09	16,72	17,96	4	17,40		*	0,60	3,46	116,56
43	64	6.4	21.1	*22,59*	*18,39*	*20,10*	*20,88*	0	*20,49*	b	*	1,74	8,51	137,23
44	05	3.3	21.1	*40a*	*30,00*	*27,50*	*30,00*	0	*29,17*	b	*	1,44	4,95	195,34
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	N	Mean	SI	VI
all labs	168	**14,93**	**0,452**	**3,030**
15	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
42	**1,345**	**9,006**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Zn **Sample: 4** Dimension: mg/kg

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	36x	5.5	31	*19,76*	*19,91*	*19,75*	*19,82*	0	*19,81*	b	*	0,07	0,37	68,59
2	78	5.5	31	*24,00*	*23,70*	*23,70*	*24,10*	0	*23,88*	b	*	0,21	0,86	82,67
3	32	5.7	31	25,11	25,19	25,31	25,33	4	25,24			0,10	0,41	87,38
4	39x	5.5	35	26,80	26,70	26,40	26,40	4	26,58			0,21	0,78	92,02
5	52	3.1	31	27,09	27,47	26,09	27,04	4	26,92			0,59	2,18	93,22
6	07x	5.5	31	27,10	26,50	26,90	27,30	4	26,95			0,34	1,27	93,31
7	08	6.3	31	26,80	27,80	26,80	26,60	4	27,00			0,54	2,01	93,49
8	33a	5.1	21	27,70	27,60	26,50	28,00	4	27,45			0,66	2,39	95,05
9	18x	3.31	31	30,71	25,71	26,94	27,85	4	27,80			2,13	7,65	96,27
10	50x	4.1	31	28,20	27,99	27,83	27,94	4	27,99			0,16	0,55	96,92
11	47x	4.1	31	28,50	27,70	28,00	27,80	4	28,00			0,36	1,27	96,95
12	11	5.1	31	27,40	28,00	29,00	28,30	4	28,18			0,67	2,36	97,56
13	77	5.1	31	28,38	29,19	27,74	27,41	4	28,18			0,78	2,78	97,57
14	66	5.5	31	29,10	28,50	27,60	27,80	4	28,25			0,69	2,43	97,82
15	23x	5.1	31	27,26	27,82	29,06	28,96	4	28,27			0,88	3,12	97,90
16	26	5.5	31	27,90	31,90	25,10	28,50	4	28,35			2,79	9,85	98,16
17	38x	5.5	31	28,90	28,10	28,60	28,50	4	28,53			0,33	1,16	98,77
18	73	5	31	28,40	29,00	29,00	28,30	4	28,68			0,38	1,32	99,29
19	74x	5.5	21.1	28,39	28,34	29,27	28,73	4	28,68			0,43	1,49	99,31
20	37	5.5	31	28,42	29,06	28,94	28,58	4	28,75			0,30	1,04	99,55
21	37a	9.1	42	28,66	28,86	28,94	28,74	4	28,80			0,12	0,43	99,72
22	04x	9.1	41	27,20	29,30	29,20	29,50	4	28,80			1,07	3,73	99,72
23	03x	3.10	31	29,00	30,00	27,00	30,00	4	29,00			1,41	4,88	100,41
24	38a	9.1	42	28,70	28,80	29,40	29,40	4	29,08			0,38	1,30	100,67
25	29x	3.3	31	29,11	30,68	28,08	28,61	4	29,12			1,12	3,85	100,83
26	04a	9.1	42	28,40	28,50	29,70	30,20	4	29,20			0,89	3,05	101,11
27	13	5.3	21.1	29,86	30,29	28,40	28,64	4	29,30			0,92	3,14	101,44
28	44x	4.1	32	29,30	30,20	29,10	29,00	4	29,40			0,55	1,86	101,80
29	43x	4.1	31	30,50	28,90	29,50	29,10	4	29,50			0,71	2,41	102,14
30	42	4.1	32	29,30	30,10	29,40	29,40	4	29,55			0,37	1,25	102,32
31	56	5.5	31	29,20	29,70	30,40	30,20	4	29,88			0,54	1,80	103,44
32	60	3.3	31	28,84	30,23	30,98	29,80	4	29,96			0,89	2,98	103,75
33	20x	5.1	31	29,96	29,67	30,10	30,40	4	30,03			0,30	1,01	103,99
34	49	4.1	31	30,30	29,80	28,90	31,20	4	30,05			0,96	3,20	104,05
35	12x	5.1	31	*34,23a*	29,74	30,39	30,41	3	30,18			0,38	1,26	104,50
36	76	5.5	31	29,20	31,40	31,40	29,10	4	30,28			1,30	4,29	104,83
37	17x	5.5	31	32,78	30,51	29,54	28,31	4	30,29			1,89	6,25	104,86
38	09	5.5	31	30,32	30,49	30,31	*31,375a*	3	30,37			0,10	0,32	105,17
39	02	5.3	31	31,70	30,30	30,70	30,10	4	30,70			0,71	2,32	106,30
40	48x	4.1	31	31,23	30,22	31,67	30,66	4	30,95			0,64	2,06	107,15
41	46	5.1	31	31,10	30,80	*35,5a*	31,10	3	31,00			0,17	0,56	107,34
42	25	5.1	31	31,90	31,30	32,60	29,20	4	31,25			1,47	4,69	108,20
43	64	6.4	21.1	*33,93*	*35,55*	*37,70*	*34,95*	0	*35,53*	b	*	1,59	4,48	123,03
44	05	3.3	21.1	*40,00*	*40,00*	*45,00*	*42,00*	0	*41,75*	b	*	2,36	5,66	144,56
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	N	Mean	SI	VI
all labs	157	**28,88**	**0,731**	**2,530**
15	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
40	**1,326**	**4,586**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Mn **Sample: 1** Dimension: mg/kg

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	76	5.5	31	*825*	*775*	*840*	*767*	0	801,8	b	*	36,18	4,51	83,78
2	78	5.5	31	*810*	*810*	*820*	*840*	0	820,0	b		14,14	1,72	85,68
3	32	5.7	31	865	851	851	854	4	855,2			6,69	0,78	89,36
4	13	5.3	21.1	888	907	898	914	4	901,8			11,31	1,25	94,23
5	43x	4.1	31	903	900	905	904	4	903,0			2,16	0,24	94,36
6	04x	9.1	41	898	904	906	904	4	903,0			3,46	0,38	94,36
7	29x	3.3	31	919	908	917	887	4	908,0			14,64	1,61	94,88
8	08	6.3	31	894	937	936	883	4	912,5			28,08	3,08	95,35
9	44x	4.1	31	929	934	916	917	4	924,0			8,91	0,96	96,55
10	26	5.5	31	910	964	910	920	4	926,0			25,77	2,78	96,76
11	05	3.3	21.1	895	940	930	940	4	926,3			21,36	2,31	96,79
12	74x	5.5	21.1	933	933	935	916	4	929,4			8,86	0,95	97,12
13	38a	9.1	42	933	933	930	926	4	930,5			3,32	0,36	97,23
14	04a	9.1	42	927	925	939	939	4	932,5			7,55	0,81	97,44
15	02	5.3	31	959	945	913	919	4	934,0			21,69	2,32	97,59
16	20x	4.1	31	935	938	933	936	4	935,3			2,09	0,22	97,73
17	52	3.1	31	939	942	927	939	4	936,8			6,90	0,74	97,88
18	77	5.1	31	938	909	957	945	4	937,4			20,59	2,20	97,96
19	11	5.1	31	934	938	939	949	4	940,0			6,38	0,68	98,22
20	50x	4.1	31	953	925	940	952	4	942,5			13,13	1,39	98,49
21	64	6.4	21.1	958	936	938	944	4	943,8			10,10	1,07	98,62
22	23x	5.1	31	940	953	941	947	4	945,3			6,02	0,64	98,78
23	18x	3.31	31	957	955	973	934	4	954,6			15,78	1,65	99,74
24	12	4.1	31	925	958	967	978	4	956,9			22,78	2,38	99,98
25	49	4.1	31	951	973	948	962	4	958,5			11,39	1,19	100,15
26	39x	5.5	35	960	963	960	957	4	959,9			2,43	0,25	100,30
27	46	5.1	31	941	986	944	969	4	960,0			21,40	2,23	100,31
28	33a	5.1	21	989	943	971	940	4	960,6			23,49	2,45	100,37
29	56	5.5	31	944	964	973	991	4	968,0			19,54	2,02	101,15
30	07x	5.5	31	975	977	968	959	4	969,8			8,14	0,84	101,33
31	42	4.1	32	971	971	971	969	4	970,5			1,00	0,10	101,41
32	03x	3.10	31	986	958	965	988	4	974,3			15,02	1,54	101,80
33	37	5.5	31	988	982	978	976	4	980,7			5,28	0,54	102,47
34	47x	4.1	31	988	975	985	975	4	980,8			6,75	0,69	102,48
35	17x	5.5	31	980	994	984	977	4	983,7			7,35	0,75	102,79
36	48x	4.1	31	971	982	1023	970	4	986,5			24,87	2,52	103,08
37	37a	9.1	42	1011	983	969	997	4	990,0			18,07	1,83	103,45
38	61x	4.1	21.1	994	995	986	1001	4	994,0			6,16	0,62	103,86
39	38x	4.5	31	990	981	977	1036	4	996,0			27,22	2,73	104,07
40	60	3.3	31	1017	985	981	1016	4	999,6			19,22	1,92	104,45
41	66	5.5	31	1010	998	1010	1010	4	1007,0			6,00	0,60	105,22
42	25	5.1	31	1015	1015	1041	978	4	1012,4			25,74	2,54	105,78
43	73	5	31	1022	1011	1016	1011	4	1015,0			5,23	0,52	106,06
44	09	5.5	31	1040	1046	1055	1063	4	1051,3			10,12	0,96	109,85
45	36x	5.5	31	1057	1062	1047	1053	4	1054,8			6,34	0,60	110,21
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	N	Mean	SI	VI
all labs	172	**957,0**	**12,519**	**1,308**
15	% from the mean			

L	SR	VR
43	**40,229**	**4,204**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Mn **Sample: 2** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	76	5.5	31	1077	1091	1061	1086	4	1078,8	13,18	1,22	85,65
2	78	5.5	31	1072	1100	1075	1087	4	1083,5	12,77	1,18	86,02
3	32	5.7	31	1180	1171	1165	1158	4	1168,3	9,20	0,79	92,76
4	29x	3.3	31	1157	1178	1157	1228	4	1180,0	33,50	2,84	93,69
5	43x	4.1	31	1186	1155	1203	1194	4	1184,5	20,86	1,76	94,04
6	08	6.3	31	1180	1200	1190	1170	4	1185,0	12,91	1,09	94,08
7	05	3.3	21.1	1175	1195	1195	1190	4	1188,8	9,46	0,80	94,38
8	13	5.3	21.1	1180	1227	1188	1243	4	1209,5	30,34	2,51	96,03
9	20x	4.1	31	1217	1225	1228	1189	4	1214,5	17,94	1,48	96,43
10	04x	9.1	41	1215	1222	1224	1227	4	1222,0	5,10	0,42	97,02
11	26	5.5	31	1240	1266	1224	1200	4	1232,5	27,73	2,25	97,85
12	04a	9.1	42	1224	1221	1244	1244	4	1233,3	12,47	1,01	97,91
13	02	5.3	31	1253	1229	1209	1248	4	1234,8	20,04	1,62	98,03
14	74x	5.5	21.1	1231	1261	1215	1232	4	1234,9	18,78	1,52	98,04
15	44x	4.1	31	1225	1240	1262	1240	4	1241,8	15,24	1,23	98,59
16	38x	4.5	31	1227	1262	1234	1260	4	1245,8	17,86	1,43	98,91
17	38a	9.1	42	1251	1245	1251	1247	4	1248,5	3,00	0,24	99,12
18	37	5.5	31	1248	1228	1260	1270	4	1251,6	18,26	1,46	99,37
19	23x	5.1	31	1260	1257	1248	1246	4	1252,8	6,80	0,54	99,46
20	11	5.1	31	1250	1250	1270	1260	4	1257,5	9,57	0,76	99,84
21	77	5.1	31	1251	1251	1285	1266	4	1263,3	16,01	1,27	100,30
22	52	3.1	31	1281	1254	1279	1244	4	1264,5	18,58	1,47	100,40
23	64	6.4	21.1	1298	1240	1254	1284	4	1269,2	26,53	2,09	100,76
24	18x	3.31	31	1283	1266	1273	1255	4	1269,4	11,95	0,94	100,79
25	39x	5.5	35	1272	1261	1280	1266	4	1269,8	8,18	0,64	100,81
26	61x	4.1	21.1	1251	1280	1278	1292	4	1275,3	17,31	1,36	101,25
27	50x	4.1	31	1267	1267	1273	1296	4	1275,8	13,79	1,08	101,29
28	49	4.1	31	1280	1310	1253	1267	4	1277,5	24,31	1,90	101,43
29	47x	4.1	31	1280	1270	1280	1280	4	1277,5	5,00	0,39	101,43
30	12	4.1	31	1254	1285	1301	1279	4	1279,7	19,82	1,55	101,60
31	37a	9.1	42	1258	1295	1265	1302	4	1280,0	21,74	1,70	101,62
32	46	5.1	31	1300	1290	1290	1250	4	1282,5	22,17	1,73	101,82
33	17x	5.5	31	1289	1289	1278	1298	4	1288,5	8,19	0,64	102,30
34	36x	5.5	31	1288	1283	1305	1296	4	1293,0	9,63	0,74	102,66
35	07x	5.5	31	1290	1300	1290	1310	4	1297,5	9,57	0,74	103,01
36	56	5.5	31	1318	1287	1305	1301	4	1302,8	12,76	0,98	103,43
37	33a	5.1	21	1322	1284	1321	1297	4	1305,7	18,62	1,43	103,66
38	42	4.1	32	1309	1309	1308	1304	4	1307,5	2,38	0,18	103,81
39	03x	3.10	31	1287	1330	1312	1314	4	1310,8	17,76	1,36	104,07
40	60	3.3	31	1305	1306	1310	1347	4	1316,9	20,13	1,53	104,55
41	48x	4.1	31	1357	1342	1317	1321	4	1334,3	18,71	1,40	105,93
42	66	5.5	31	1350	1360	1350	1340	4	1350,0	8,16	0,60	107,18
43	73	5	31	1348	1349	1352	1361	4	1352,5	5,92	0,44	107,38
44	25	5.1	31	1358	1352	1382	1362	4	1363,5	13,00	0,95	108,25
45	09	5.5	31	1417	1391	1416	1471	4	1423,8	33,58	2,36	113,04
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	N	Mean	SI	VI
all labs	180	**1259,5**	**15,529**	**1,233**
15	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
45	**64,398**	**5,113**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Mn **Sample: 3** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	78	5.5	31	*24,70*	*24,40*	*24,00*	*25,10*	0	*24,55*	b	*	0,47	1,90	71,96
2	32	5.7	31	28,97	28,54	28,83	28,69	4	28,76		*	0,18	0,64	84,30
3	52	3.1	31	29,45	29,24	30,00	29,10	4	29,45			0,40	1,34	86,32
4	76	5.5	31	29,80	30,10	29,00	29,70	4	29,65			0,47	1,57	86,91
5	74x	5.5	21.1	30,36	30,18	29,32	30,17	4	30,01			0,47	1,55	87,96
6	07x	5.5	31	30,40	30,50	30,70	30,90	4	30,63			0,22	0,72	89,77
7	39x	5.5	35	30,60	30,80	31,00	30,40	4	30,70			0,26	0,84	89,99
8	23x	5.1	31	30,87	30,58	31,12	31,21	4	30,95			0,28	0,91	90,71
9	44x	4.1	31	31,30	31,60	30,90	30,60	4	31,10			0,44	1,41	91,16
10	09	5.5	31	31,11	31,32	31,92	31,60	4	31,49			0,35	1,12	92,30
11	46	5.1	31	31,00	31,10	32,10	33,00	4	31,80			0,94	2,96	93,22
12	02	5.3	31	32,00	31,00	33,00	33,00	4	32,25			0,96	2,97	94,54
13	66	5.5	31	32,60	32,40	32,50	32,50	4	32,50			0,08	0,25	95,27
14	43x	4.1	31	30,00	35,00	34,00	32,00	4	32,75			2,22	6,77	96,00
15	61x	4.1	21.1	30,00	34,00	34,00	34,00	4	33,00			2,00	6,06	96,73
16	64	6.4	21.1	35,84	31,31	31,47	33,41	4	33,01			2,12	6,41	96,76
17	36x	5.5	31	33,73	32,81	32,71	33,05	4	33,08			0,46	1,39	96,95
18	13	5.3	21.1	33,18	32,92	34,07	32,43	4	33,15			0,69	2,07	97,17
19	20x	4.1	31	33,66	32,98	33,60	33,91	4	33,54			0,40	1,18	98,31
20	33a	5.1	21	33,40	33,70	33,50	33,60	4	33,55			0,13	0,38	98,35
21	08	6.3	31	33,70	34,60	33,60	33,30	4	33,80			0,56	1,66	99,08
22	11	5.1	31	34,80	33,70	33,60	33,40	4	33,88			0,63	1,86	99,30
23	17x	5.5	31	34,81	34,43	34,00	33,68	4	34,23			0,49	1,44	100,34
24	60	3.3	31	34,86	33,40	34,86	33,90	4	34,26			0,73	2,12	100,41
25	04x	9.1	41	34,40	34,60	33,60	34,70	4	34,33			0,50	1,45	100,62
26	25	5.1	31	34,90	34,80	34,10	34,30	4	34,53			0,39	1,12	101,20
27	47x	4.1	31	34,50	34,60	34,80	35,10	4	34,75			0,26	0,76	101,86
28	56	5.5	31	34,90	35,00	35,10	35,10	4	35,03			0,10	0,27	102,67
29	42	4.1	32	36,00	35,00	35,00	35,00	4	35,25			0,50	1,42	103,33
30	29x	3.3	31	34,95	35,76	35,39	35,13	4	35,31			0,35	1,00	103,50
31	12	4.1	31	34,10	36,00	34,70	36,60	4	35,35			1,15	3,25	103,62
32	50x	4.1	31	36,97	33,90	36,06	34,73	4	35,42			1,37	3,86	103,81
33	03x	3.10	31	34,00	37,00	37,00	34,00	4	35,50			1,73	4,88	104,06
34	37	5.5	31	35,09	35,54	35,90	36,59	4	35,78			0,63	1,77	104,88
35	05	3.3	21.1	37,00	35,00	35,50	36,00	4	35,88			0,85	2,38	105,16
36	49	4.1	31	37,90	35,40	34,80	36,50	4	36,15			1,36	3,77	105,97
37	38x	4.5	31	36,60	36,20	36,50	36,20	4	36,38			0,21	0,57	106,63
38	73	5	31	36,80	36,30	36,30	36,40	4	36,45			0,24	0,65	106,85
39	18x	3.31	31	39,60	37,10	34,20	35,30	4	36,55			2,36	6,45	107,14
40	48x	4.1	31	36,74	37,02	36,61	36,76	4	36,78			0,17	0,47	107,82
41	38a	9.1	42	36,80	37,20	36,80	37,60	4	37,10			0,38	1,03	108,75
42	37a	9.1	42	36,80	36,10	38,90	38,20	4	37,50			1,28	3,41	109,93
43	04a	9.1	42	36,90	37,10	38,30	38,50	4	37,70			0,82	2,17	110,51
44	26	5.5	31	40,90	40,30	42,50	38,20	4	40,48		*	1,78	4,39	118,65
45	77	5.1	31	40,62	42,35	41,24	41,12	4	41,33		*	0,73	1,77	121,16
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	N	Mean	SI	VI
all labs	176	**34,11**	**0,741**	**2,173**
15	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
44	**2,747**	**8,052**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Mn **Sample: 4** Dimension: mg/kg

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	78	5.5	31	*34,30*	*34,30*	*34,00*	*34,70*	0	*34,33*	b	*	0,29	0,84	72,53
2	39x	5.5	35	40,80	41,50	40,20	41,10	4	40,90			0,55	1,34	86,43
3	76	5.5	31	40,90	42,40	40,70	42,40	4	41,60			0,93	2,23	87,90
4	32	5.7	31	42,13	42,13	41,80	41,20	4	41,82			0,44	1,05	88,36
5	43x	4.1	31	43,00	41,00	43,00	42,00	4	42,25			0,96	2,27	89,28
6	52	3.1	31	43,70	41,90	43,00	41,20	4	42,45			1,12	2,63	89,70
7	07x	5.5	31	42,50	42,30	42,70	42,50	4	42,50			0,16	0,38	89,81
8	44x	4.1	31	43,30	43,10	43,50	44,20	4	43,53			0,48	1,10	91,97
9	36x	5.5	31	44,81	43,17	43,67	43,26	4	43,73			0,75	1,72	92,40
10	74x	5.5	21.1	43,98	42,77	42,93	45,52	4	43,80			1,27	2,89	92,55
11	23x	5.1	31	45,00	43,61	42,87	44,50	4	44,00			0,94	2,15	92,97
12	66	5.5	31	44,80	44,40	45,40	45,10	4	44,93			0,43	0,95	94,93
13	46	5.1	31	46,80	44,60	45,10	45,20	4	45,43			0,95	2,10	95,99
14	13	5.3	21.1	46,90	44,73	45,58	45,83	4	45,76			0,89	1,95	96,69
15	09	5.5	31	45,62	45,32	46,88	46,46	4	46,07			0,72	1,57	97,35
16	11	5.1	31	47,10	46,60	46,00	46,90	4	46,65			0,48	1,03	98,58
17	50x	4.1	31	45,19	43,98	48,91	49,15	4	46,81			2,62	5,59	98,91
18	08	6.3	31	46,80	47,60	46,90	46,70	4	47,00			0,41	0,87	99,32
19	60	3.3	31	48,06	46,25	46,04	47,75	4	47,03			1,03	2,19	99,37
20	04x	9.1	41	46,30	48,30	47,20	46,90	4	47,18			0,84	1,78	99,68
21	02	5.3	31	47,00	48,00	48,00	48,00	4	47,75			0,50	1,05	100,90
22	29x	3.3	31	47,69	47,69	47,91	47,76	4	47,76			0,10	0,22	100,93
23	26	5.5	31	46,10	48,50	50,30	47,90	4	48,20			1,73	3,59	101,85
24	05	3.3	21.1	48,00	49,00	47,50	48,50	4	48,25			0,65	1,34	101,96
25	33a	5.1	21	48,30	48,00	49,00	49,00	4	48,58			0,51	1,04	102,64
26	73	5	31	48,60	48,70	48,70	48,40	4	48,60			0,14	0,29	102,70
27	64	6.4	21.1	52,42	45,08	48,49	48,60	4	48,65			3,00	6,17	102,80
28	20x	4.1	31	48,76	49,09	48,58	48,68	4	48,78			0,22	0,45	103,07
29	42	4.1	32	49,00	49,00	49,00	49,00	4	49,00			0,00	0,00	103,54
30	56	5.5	31	48,80	48,50	50,10	49,30	4	49,18			0,70	1,42	103,91
31	61x	4.1	21.1	48,00	50,00	50,00	49,00	4	49,25			0,96	1,94	104,07
32	48x	4.1	31	47,80	50,99	49,43	49,72	4	49,49			1,31	2,65	104,57
33	37a	9.1	42	49,00	50,20	49,20	50,40	4	49,70			0,70	1,41	105,02
34	17x	5.5	31	50,02	49,79	49,40	49,66	4	49,72			0,26	0,52	105,06
35	25	5.1	31	48,30	49,40	50,90	50,50	4	49,78			1,17	2,35	105,18
36	47x	4.1	31	50,00	49,80	49,80	49,60	4	49,80			0,16	0,33	105,23
37	37	5.5	31	48,71	49,04	51,54	50,38	4	49,92			1,30	2,61	105,48
38	03x	3.10	31	50,00	51,00	48,00	51,00	4	50,00			1,41	2,83	105,65
39	49	4.1	31	52,30	50,40	48,70	48,90	4	50,08			1,67	3,33	105,81
40	18x	3.31	31	48,60	49,30	51,30	51,20	4	50,10			1,36	2,71	105,87
41	38x	4.5	31	49,30	50,20	50,30	50,70	4	50,13			0,59	1,18	105,92
42	38a	9.1	42	51,20	50,40	49,80	49,30	4	50,18			0,82	1,63	106,02
43	12	4.1	31	52,70	51,60	51,30	47,50	4	50,78			2,26	4,46	107,29
44	04a	9.1	42	49,20	50,00	52,30	52,90	4	51,10			1,78	3,48	107,98
45	77	5.1	31	54,86	52,41	53,94	55,30	4	54,13			1,28	2,36	114,38
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	N	Mean	SI	VI
all labs	176	**47,32**	**0,921**	**1,947**
15	% from the mean			

L	SR	VR
44	**3,077**	**6,502**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Fe **Sample: 1** Dimension: mg/kg

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	26	5.5	35	*110,00*	*111,00*	*110,00*	*110,00*	0	*110,25*	b	*	0,50	0,45	46,37
2	07x	5.5	31	174,00	176,00	182,00	179,00	4	177,75		*	3,50	1,97	74,77
3	46	5.1	31	188,00	194,00	184,00	186,00	4	188,00		*	4,32	2,30	79,08
4	05	3.3	21.1	194,00	201,00	184,00	190,00	4	192,25			7,14	3,71	80,87
5	11	5.1	31	202,00	196,00	205,00	206,00	4	202,25			4,50	2,22	85,07
6	36x	5.5	31	214,08	202,13	196,41	198,56	4	202,80			7,88	3,89	85,30
7	32	5.7	31	207,76	208,16	207,91	207,96	4	207,95			0,17	0,08	87,47
8	64	6.4	21.1	212,00	209,40	215,80	213,35	4	212,64			2,67	1,26	89,44
9	02	5.3	31	223,00	216,80	208,20	211,70	4	214,93			6,44	3,00	90,40
10	66	5.5	31	214,00	213,00	217,00	216,00	4	215,00			1,83	0,85	90,44
11	72	6.5	21.1	215,89	218,70	213,69	224,06	4	218,09			4,48	2,05	91,73
12	76	5.5	31	232,00	234,00	225,00	214,00	4	226,25			9,03	3,99	95,17
13	09	5.5	31	224,88	236,10	229,50	227,89	4	229,59			4,74	2,06	96,57
14	23x	5.1	31	229,00	245,00	234,00	217,00	4	231,25			11,62	5,02	97,27
15	08	6.3	31	230,00	239,00	243,00	229,00	4	235,25			6,85	2,91	98,95
16	20x	4.1	31	233,77	241,11	234,45	242,59	4	237,98			4,52	1,90	100,10
17	17x	5.5	31	238,40	241,90	241,20	239,00	4	240,13			1,69	0,70	101,00
18	29x	3.3	31	244,60	241,30	236,60	242,00	4	241,13			3,33	1,38	101,42
19	77	5.1	31	240,54	242,20	240,25	245,98	4	242,24			2,64	1,09	101,89
20	25	5.1	31	230,30	251,20	249,70	239,10	4	242,58			9,80	4,04	102,03
21	33a	5.1	21	237,80	236,30	253,60	247,20	4	243,73			8,16	3,35	102,52
22	49	4.1	31	247,00	244,00	245,00	243,00	4	244,75			1,71	0,70	102,95
23	50x	4.1	31	240,70	244,20	244,30	251,10	4	245,08			4,35	1,78	103,09
24	44x	4.1	31	253,00	246,00	244,00	238,00	4	245,25			6,18	2,52	103,16
25	43x	4.1	31	255,00	235,00	252,00	242,00	4	246,00			9,20	3,74	103,48
26	37a	9.1	42	242,80	249,40	245,00	251,60	4	247,20			4,02	1,62	103,98
27	38a	9.1	42	245,00	248,00	252,00	246,00	4	247,75			3,10	1,25	104,21
28	39x	5.5	31	252,90	243,30	244,20	250,70	4	247,78			4,75	1,92	104,22
29	56	5.5	31	247,80	243,00	248,60	251,80	4	247,80			3,64	1,47	104,23
30	18x	3.31	31	251,80	240,90	251,70	248,10	4	248,13			5,11	2,06	104,37
31	48x	4.1	31	254,60	247,90	247,70	243,50	4	248,43			4,59	1,85	104,50
32	74x	5.5	21.1	253,69	247,19	247,52	259,57	4	251,99			5,87	2,33	106,00
33	12	4.1	31	246,10	257,60	247,60	257,90	4	252,30			6,32	2,51	106,13
34	37	5.5	31	254,68	248,44	258,84	251,56	4	253,38			4,44	1,75	106,58
35	04a	9.1	42	251,00	250,00	257,00	260,00	4	254,50			4,80	1,88	107,05
36	03x	3.10	31	262,00	247,00	262,00	250,00	4	255,25			7,89	3,09	107,37
37	61x	4.1	21.1	262,00	258,00	247,00	260,00	4	256,75			6,70	2,61	108,00
38	73	5	31	252,00	262,00	257,00	257,00	4	257,00			4,08	1,59	108,10
39	38x	4.5	31	254,00	263,00	259,00	255,00	4	257,75			4,11	1,60	108,42
40	52	3.1	31	275,20	250,71	260,49	244,82	4	257,81			13,28	5,15	108,44
41	78	5.5	31	256,00	265,00	254,00	260,00	4	258,75			4,86	1,88	108,84
42	42	4.1	32	261,00	255,00	266,00	265,00	4	261,75			4,99	1,91	110,10
43	47x	4.1	31	265,00	262,00	263,00	263,00	4	263,25			1,26	0,48	110,73
44	60	3.3	31	275,45	283,15	269,38	261,41	4	272,35			9,22	3,38	114,56
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	N	Mean	SI	VI
all labs	172	**237,74**	**5,343**	**2,247**
20	% from the mean			

L	SR	VR
43	**22,038**	**9,270**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Fe **Sample: 2** Dimension: mg/kg

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean		Lab.standard dev. Si	Vi	Recovery %
1	07x	5.5	31	48,50	48,00	48,20	48,50	4	48,30	*	0,24	0,51	74,12
2	26	5.5	35	48,50	48,50	49,90	49,90	4	49,20	*	0,81	1,64	75,50
3	46	5.1	31	51,40	53,10	53,30	53,90	4	52,93		1,07	2,03	81,22
4	05	3.3	21.1	53,50	48,50	61,50	50,00	4	53,38		5,81	10,88	81,91
5	36x	5.5	31	59,02	53,51	50,51	56,12	4	54,79		3,63	6,63	84,08
6	11	5.1	31	55,40	54,90	55,60	53,50	4	54,85		0,95	1,73	84,17
7	66	5.5	31	56,40	57,20	56,70	55,40	4	56,43		0,76	1,34	86,59
8	32	5.7	31	57,34	57,96	58,13	57,86	4	57,82		0,34	0,59	88,74
9	02	5.3	31	59,60	61,10	58,80	59,00	4	59,63		1,04	1,74	91,50
10	78	5.5	31	64,70	59,50	59,80	61,20	4	61,30		2,38	3,89	94,07
11	09	5.5	31	61,60	60,75	60,77	64,66	4	61,94		1,86	3,00	95,06
12	29x	3.3	31	61,63	62,56	61,63	61,95	4	61,94		0,44	0,71	95,06
13	76	5.5	31	62,10	61,50	60,30	67,00	4	62,73		2,95	4,70	96,26
14	23x	5.1	31	60,60	62,00	65,30	63,90	4	62,95		2,07	3,29	96,60
15	64	6.4	21.1	63,09	63,00	64,88	62,46	4	63,36		1,05	1,66	97,23
16	08	6.3	31	68,20	63,80	61,30	60,70	4	63,50		3,41	5,37	97,45
17	39x	5.5	31	64,70	63,50	64,20	64,60	4	64,25		0,54	0,85	98,60
18	20x	4.1	31	64,91	63,17	65,54	64,45	4	64,52		1,00	1,56	99,01
19	44x	4.1	31	63,00	64,00	66,00	66,00	4	64,75		1,50	2,32	99,37
20	74x	5.5	21.1	66,37	66,36	61,49	65,38	4	64,90		2,32	3,58	99,60
21	61x	4.1	21.1	65,00	65,00	64,00	66,00	4	65,00		0,82	1,26	99,75
22	77	5.1	31	65,05	64,27	65,27	66,41	4	65,25		0,88	1,36	100,13
23	37	5.5	31	65,48	66,87	65,81	64,91	4	65,77		0,82	1,25	100,93
24	49	4.1	31	66,00	65,70	66,10	67,00	4	66,20		0,56	0,85	101,59
25	43x	4.1	31	66,00	66,00	67,00	66,00	4	66,25		0,50	0,75	101,67
26	33a	5.1	21	66,00	66,50	67,90	67,10	4	66,88		0,82	1,22	102,63
27	17x	5.5	31	66,89	66,35	67,38	68,32	4	67,24		0,84	1,24	103,18
28	38x	4.5	31	66,00	69,10	67,10	67,70	4	67,48		1,29	1,91	103,55
29	50x	4.1	31	65,92	65,06	71,69	68,11	4	67,70		2,96	4,37	103,89
30	48x	4.1	31	68,29	70,98	68,27	68,30	4	68,96		1,35	1,95	105,83
31	47x	4.1	31	69,40	68,50	69,30	68,80	4	69,00		0,42	0,61	105,89
32	18x	3.31	31	71,50	70,10	67,70	67,80	4	69,28		1,85	2,67	106,31
33	03x	3.10	31	69,00	71,00	69,00	69,00	4	69,50		1,00	1,44	106,66
34	42	4.1	32	69,50	69,80	69,60	69,90	4	69,70		0,18	0,26	106,96
35	12	4.1	31	70,00	68,00	71,50	71,00	4	70,13		1,55	2,21	107,62
36	56	5.5	31	69,90	73,00	68,80	70,00	4	70,43		1,80	2,56	108,08
37	37a	9.1	42	71,50	69,30	69,90	72,10	4	70,70		1,32	1,86	108,50
38	73	5	31	71,50	71,50	70,20	70,90	4	71,03		0,62	0,87	109,00
39	72	6.5	21.1	70,80	71,53	70,66	72,79	4	71,45		0,97	1,36	109,64
40	38a	9.1	42	73,30	72,60	72,80	72,10	4	72,70		0,50	0,68	111,57
41	25	5.1	31	78,00	70,50	78,90	73,30	4	75,18		3,97	5,28	115,37
42	52	3.1	31	75,06	69,54	73,76	86,27	4	76,16		7,14	9,38	116,87
43	60	3.3	31	77,75	73,81	78,59	79,40	4	77,39		2,48	3,20	118,76
44	04a	9.1	42	82,80	82,20	86,20	86,30	4	84,38	*	2,18	2,58	129,48
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	N	Mean	SI	VI
all labs	176	**65,16**	**1,613**	**2,476**
20	% from the mean			

L	SR	VR
44	**7,341**	**11,265**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Fe **Sample: 3** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	36x	5.5	31	68,37	72,43	74,32	80,27	4	73,85			4,95	6,70	83,07
2	07x	5.5	31	74,90	75,40	74,90	74,40	4	74,90			0,41	0,55	84,25
3	32	5.7	31	77,19	77,49	78,80	77,82	4	77,83			0,70	0,90	87,55
4	11	5.1	31	77,20	82,30	78,50	75,40	4	78,35			2,92	3,73	88,14
5	26	5.5	35	74,00	89,00	81,90	72,30	4	79,30			7,70	9,71	89,20
6	66	5.5	31	80,80	80,20	80,90	80,80	4	80,68			0,32	0,40	90,75
7	78	5.5	31	82,20	82,50	81,60	83,90	4	82,55			0,97	1,18	92,86
8	76	5.5	31	86,20	82,00	81,30	81,60	4	82,78			2,30	2,78	93,11
9	46	5.1	31	82,80	81,90	85,60	84,10	4	83,60			1,61	1,93	94,04
10	05	3.3	21.1	86,50	84,00	84,00	85,00	4	84,88			1,18	1,39	95,48
11	33a	5.1	21	84,70	84,80	85,20	86,80	4	85,38			0,97	1,14	96,04
12	44x	4.1	31	88,00	87,00	84,00	85,00	4	86,00			1,83	2,12	96,74
13	43x	4.1	31	86,00	87,00	86,00	87,00	4	86,50			0,58	0,67	97,30
14	17x	5.5	31	87,40	87,03	86,04	86,22	4	86,67			0,65	0,75	97,50
15	50x	4.1	31	87,03	85,43	89,32	91,26	4	88,26			2,56	2,90	99,28
16	08	6.3	31	90,80	88,10	89,30	86,30	4	88,63			1,90	2,15	99,69
17	61x	4.1	21.1	89,00	89,00	88,00	89,00	4	88,75			0,50	0,56	99,83
18	39x	5.5	31	88,90	88,30	89,80	88,10	4	88,78			0,76	0,86	99,86
19	23x	5.1	31	89,40	88,50	90,40	87,70	4	89,00			1,16	1,31	100,12
20	20x	4.1	31	89,29	87,93	89,95	89,42	4	89,15			0,86	0,97	100,28
21	09	5.5	31	87,45	87,96	91,18	91,75	4	89,58			2,19	2,44	100,77
22	72	6.5	21.1	89,19	87,09	91,81	90,70	4	89,70			2,04	2,28	100,90
23	47x	4.1	31	89,70	88,80	90,00	91,00	4	89,88			0,91	1,01	101,10
24	77	5.1	31	87,40	89,41	91,92	91,59	4	90,08			2,11	2,34	101,33
25	18x	3.31	31	91,40	92,40	87,60	90,70	4	90,53			2,07	2,29	101,83
26	49	4.1	31	90,10	91,00	89,90	91,60	4	90,65			0,79	0,88	101,97
27	02	5.3	31	88,60	89,70	93,40	91,50	4	90,80			2,11	2,32	102,14
28	38a	9.1	42	91,20	92,00	90,40	90,70	4	91,08			0,70	0,77	102,45
29	29x	3.3	31	90,14	92,22	91,38	90,61	4	91,09			0,91	1,00	102,46
30	42	4.1	32	92,40	91,90	91,80	91,50	4	91,90			0,37	0,41	103,38
31	37	5.5	31	91,52	90,19	94,49	93,06	4	92,32			1,86	2,02	103,84
32	48x	4.1	31	92,11	92,88	92,67	92,18	4	92,46			0,37	0,41	104,01
33	52	3.1	31	88,64	92,62	102,27	89,65	4	93,30			6,22	6,66	104,95
34	12	4.1	31	90,90	94,10	92,70	96,10	4	93,45			2,20	2,35	105,12
35	38x	4.5	31	93,50	94,40	94,90	94,40	4	94,30			0,58	0,62	106,08
36	03x	3.10	31	93,00	97,00	96,00	93,00	4	94,75			2,06	2,18	106,58
37	37a	9.1	42	95,90	94,30	95,50	93,90	4	94,90			0,95	1,00	106,75
38	73	5	31	94,20	94,70	98,80	95,40	4	95,78			2,08	2,17	107,74
39	56	5.5	31	95,90	95,10	94,50	97,80	4	95,83			1,44	1,50	107,79
40	60	3.3	31	97,95	99,90	99,39	98,30	4	98,89			0,91	0,92	111,24
41	64	6.4	21.1	107,69	99,81	110,63	95,08	4	103,30			7,14	6,91	116,20
42	74x	5.5	21.1	99,91	102,90	109,07	101,49	4	103,34			4,01	3,88	116,25
43	04a	9.1	42	*111,00*	*115,00*	*111,00*	*115,00*	0	*113,00*	b	*	2,31	2,04	127,11
44	25	5.1	31	*117,60*	*117,90*	*126,00*	*123,80*	0	*121,33*	b	*	4,23	3,48	136,48
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	N	Mean	SI	VI
all labs	168	**88,90**	**1,878**	**2,112**
20	% from the mean			

L	SR	VR
42	**6,583**	**7,405**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Fe **Sample: 4** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	11	5.1	31	*105,00*	*90,80*	*90,10*	*101,00*	0	*96,73*	b	*	7,43	7,68	70,28
2	26	5.5	35	110,00	102,00	98,60	118,00	4	107,15		*	8,67	8,09	77,86
3	07x	5.5	31	111,00	113,00	112,00	111,00	4	111,75			0,96	0,86	81,20
4	36x	5.5	31	121,51	121,35	121,89	121,45	4	121,55			0,24	0,19	88,32
5	46	5.1	31	125,00	124,00	122,00	123,00	4	123,50			1,29	1,05	89,74
6	78	5.5	31	124,00	124,00	124,00	126,00	4	124,50			1,00	0,80	90,46
7	32	5.7	31	124,12	125,48	127,30	128,18	4	126,27			1,82	1,44	91,75
8	66	5.5	31	136,00	120,00	135,00	122,00	4	128,25			8,42	6,57	93,19
9	05	3.3	21.1	126,00	138,00	127,00	125,00	4	129,00			6,06	4,69	93,73
10	44x	4.1	31	132,00	127,00	129,00	133,00	4	130,25			2,75	2,11	94,64
11	33a	5.1	21	129,20	126,30	132,90	133,80	4	130,55			3,46	2,65	94,86
12	02	5.3	31	128,30	128,30	134,90	136,80	4	132,08			4,43	3,35	95,97
13	43x	4.1	31	132,00	135,00	137,00	130,00	4	133,50			3,11	2,33	97,00
14	39x	5.5	31	136,10	131,70	132,10	134,10	4	133,50			2,03	1,52	97,00
15	61x	4.1	21.1	132,00	136,00	134,00	135,00	4	134,25			1,71	1,27	97,55
16	09	5.5	31	135,85	133,78	133,27	134,32	4	134,30			1,11	0,83	97,59
17	76	5.5	31	142,00	128,00	136,00	132,00	4	134,50			5,97	4,44	97,73
18	64	6.4	21.1	140,03	134,60	133,83	132,92	4	135,35			3,20	2,36	98,35
19	29x	3.3	31	139,10	135,50	137,80	136,50	4	137,23			1,56	1,14	99,71
20	48x	4.1	31	141,30	143,10	134,20	131,30	4	137,48			5,63	4,10	99,89
21	08	6.3	31	136,00	141,00	138,00	136,00	4	137,75			2,36	1,72	100,09
22	49	4.1	31	134,00	142,00	135,00	141,00	4	138,00			4,08	2,96	100,27
23	73	5	31	141,00	138,00	137,00	139,00	4	138,75			1,71	1,23	100,82
24	25	5.1	31	140,10	147,10	132,70	135,70	4	138,90			6,25	4,50	100,93
25	23x	5.1	31	141,10	141,50	136,20	140,60	4	139,85			2,46	1,76	101,62
26	50x	4.1	31	139,00	135,20	142,90	145,70	4	140,70			4,58	3,26	102,24
27	20x	4.1	31	141,62	142,77	141,74	140,41	4	141,64			0,97	0,68	102,92
28	17x	5.5	31	140,60	142,40	142,70	141,60	4	141,83			0,94	0,66	103,05
29	38a	9.1	42	146,00	143,00	140,00	139,00	4	142,00			3,16	2,23	103,18
30	42	4.1	32	144,00	142,00	139,00	145,00	4	142,50			2,65	1,86	103,54
31	60	3.3	31	149,18	139,08	138,08	144,07	4	142,60			5,11	3,58	103,62
32	56	5.5	31	144,30	143,90	143,00	144,10	4	143,83			0,57	0,40	104,51
33	37	5.5	31	142,52	145,09	147,33	142,41	4	144,34			2,35	1,63	104,88
34	03x	3.10	31	152,00	138,00	141,00	151,00	4	145,50			7,05	4,84	105,72
35	47x	4.1	31	144,00	147,00	148,00	144,00	4	145,75			2,06	1,41	105,91
36	77	5.1	31	144,49	142,13	149,95	148,18	4	146,19			3,53	2,42	106,22
37	72	6.5	21.1	146,20	146,83	147,81	145,70	4	146,64			0,91	0,62	106,55
38	38x	4.5	31	147,00	145,00	149,00	148,00	4	147,25			1,71	1,16	107,00
39	37a	9.1	42	148,50	146,70	146,30	148,10	4	147,40			1,06	0,72	107,10
40	52	3.1	31	150,32	145,35	145,63	148,45	4	147,44			2,38	1,61	107,13
41	18x	3.31	31	141,10	146,40	153,70	151,40	4	148,15			5,60	3,78	107,65
42	12	4.1	31	143,30	148,80	149,80	152,70	4	148,65			3,93	2,64	108,01
43	74x	5.5	21.1	156,31	158,98	151,10	152,35	4	154,69			3,62	2,34	112,40
44	04a	9.1	42	160,00	155,00	168,00	167,00	4	162,50			6,14	3,78	118,08
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	N	Mean	SI	VI
all labs	172	**137,62**	**3,223**	**2,342**
20	% from the mean			

L	SR	VR
43	**10,508**	**7,636**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Cu **Sample: 1** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	05	3.3	21.1	2,50	3,00	2,50	3,00	4	2,75			0,29	10,50	85,01
2	07x	5.5	31	2,73	2,77	2,78	2,75	4	2,76			0,02	0,80	85,24
3	36x	5.5	31	2,61	2,75	2,97	2,73	4	2,77			0,15	5,42	85,47
4	32	5.7	31	2,79	2,82	2,83	2,78	4	2,81			0,02	0,85	86,71
5	25	5.1	21.1	2,84	3,05	2,64	2,74	4	2,82			0,18	6,22	87,09
6	77	5.1	31	2,79	2,70	2,97	2,88	4	2,84			0,12	4,10	87,63
7	18x	3.31	31	3,32	2,95	2,68	2,48	4	2,86			0,36	12,72	88,33
8	11	5.1	22	2,87	2,80	2,87	2,98	4	2,88			0,07	2,58	89,02
9	46	5.1	35	2,75	3,33	2,60	2,89	4	2,89			0,31	10,88	89,41
10	44x	4.1	32	3,10	3,10	3,00	2,90	4	3,03			0,10	3,17	93,51
11	78	5.5	31	3,20	2,90	3,10	3,00	4	3,05			0,13	4,23	94,28
12	74x	5.5	22	3,09	3,16	3,07	3,09	4	3,10			0,04	1,27	95,90
13	17x	5.5	32	3,21	3,07	3,12	3,09	4	3,12			0,06	1,98	96,52
14	43x	4.1	31	3,17	3,08	3,00	3,28	4	3,13			0,12	3,84	96,83
15	56	5.5	31	3,23	3,21	3,06	3,06	4	3,14			0,09	2,95	97,06
16	52	3.1	31	3,13	3,16	2,88	3,39	4	3,14			0,21	6,64	97,06
17	33a	5.1	21	3,30	3,02	3,16	3,14	4	3,16			0,11	3,64	97,52
18	39x	4.5	35	3,11	3,19	3,14	3,19	4	3,16			0,04	1,25	97,60
19	08	6.3	31	3,27	3,24	3,18	3,05	4	3,19			0,10	3,06	98,45
20	38x	4.5	31	3,20	3,20	3,37	3,08	4	3,21			0,12	3,71	99,30
21	47x	4.1	31	3,23	3,23	3,22	3,22	4	3,23			0,01	0,18	99,69
22	37	5.5	35	3,20	3,26	3,22	3,28	4	3,24			0,04	1,13	100,15
23	50x	4.1	31	3,42	3,39	3,32	3,19	4	3,33			0,10	3,07	102,93
24	29x	3.3	31	3,39	3,39	3,39	3,31	4	3,37			0,04	1,16	104,03
25	23x	5.1	31	3,26	3,33	3,36	3,63	4	3,39			0,16	4,82	104,94
26	37a	9.1	42	3,50	3,45	3,35	3,30	4	3,40			0,09	2,68	105,10
27	48x	4.1	31	3,49	3,28	3,58	3,43	4	3,44			0,12	3,62	106,48
28	26	5.5	31	3,38	3,35	3,80	3,30	4	3,46			0,23	6,67	106,88
29	49	4.1	31	3,20	3,60	3,50	3,60	4	3,48			0,19	5,45	107,42
30	09	4.5	31	3,51	3,59	3,53	3,40	4	3,51			0,08	2,33	108,35
31	73	4	31	3,56	3,56	3,59	3,47	4	3,55			0,05	1,47	109,58
32	64	6.4	31	3,66	3,98	3,35	3,25	4	3,56			0,33	9,27	110,04
33	04x	9.1	41	3,20	3,80	3,70	3,90	4	3,65			0,31	8,52	112,83
34	60	3.3	31	3,66	3,71	3,62	3,63	4	3,66			0,04	1,11	112,98
35	38a	9.1	42	3,70	3,69	3,68	3,63	4	3,68			0,03	0,85	113,60
36	02	5.3	31	3,90	3,80	3,60	3,40	4	3,68			0,22	6,03	113,60
37	42	4.1	32	3,74	3,70	3,68	3,78	4	3,73			0,04	1,19	115,14
38	04a	9.1	42	3,63	3,61	3,99	4,08	4	3,83			0,24	6,34	118,31
39	13	5.3	21.1	*4,60*	*4,69*	*3,36*	*2,89*	0	*3,89*	c	*	0,90	23,14	120,09
40														
41														
42	76	4.5	31	<3,44	<3,44	<3,44	<3,44							
43	12	4.1	31	<1,66	<1,66	<1,66	<1,66							
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	N	Mean	SI	VI
all labs	152	**3,24**	**0,131**	**4,055**
20	% from the mean			

L	SR	VR
38	**0,311**	**9,606**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Cu **Sample: 2** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	46	5.1	35	1,62	1,78	1,92	2,04	4	1,84	*	0,18	9,84	72,95
2	11	5.1	22	2,18	2,06	2,12	2,03	4	2,10		0,07	3,17	83,16
3	77	5.1	31	2,04	2,02	2,15	2,18	4	2,10		0,08	3,78	83,16
4	32	5.7	31	2,06	2,10	2,18	2,20	4	2,14		0,07	3,10	84,65
5	78	5.5	31	2,10	2,10	2,20	2,30	4	2,18		0,10	4,40	86,24
6	07x	5.5	31	2,22	2,20	2,16	2,13	4	2,18		0,04	1,85	86,34
7	36x	5.5	31	2,18	2,19	2,21	2,22	4	2,20		0,02	0,83	87,23
8	13	5.3	21.1	1,95	2,65	2,11	2,11	4	2,21		0,31	13,88	87,43
9	25	5.1	21.1	2,20	2,44	2,34	2,23	4	2,30		0,11	4,76	91,29
10	56	5.5	31	2,33	2,31	2,30	2,29	4	2,31		0,02	0,74	91,49
11	17x	5.5	32	2,32	2,29	2,31	2,34	4	2,32		0,02	0,90	91,79
12	44x	4.1	32	2,30	2,30	2,40	2,40	4	2,35		0,06	2,46	93,17
13	43x	4.1	31	2,16	2,46	2,69	2,13	4	2,36		0,27	11,26	93,57
14	39x	4.5	35	2,44	2,34	2,29	2,42	4	2,37		0,07	2,95	94,07
15	18x	3.31	31	2,44	2,24	2,18	2,66	4	2,38		0,22	9,13	94,36
16	29x	3.3	31	2,40	2,46	2,40	2,44	4	2,42		0,03	1,23	96,02
17	37	5.5	35	2,38	2,45	2,46	2,49	4	2,45		0,05	1,90	96,94
18	74x	5.5	22	2,29	2,36	2,30	2,86	4	2,45		0,27	11,15	97,24
19	33a	5.1	21	2,36	2,38	2,39	2,73	4	2,47		0,18	7,18	97,73
20	47x	4.1	31	2,47	2,47	2,46	2,47	4	2,47		0,00	0,20	97,83
21	08	6.3	31	2,52	2,48	2,48	2,41	4	2,47		0,05	1,85	98,03
22	38x	4.5	31	2,45	2,56	2,52	2,46	4	2,50		0,05	2,08	99,02
23	23x	5.1	31	2,50	2,51	2,54	2,50	4	2,51		0,02	0,70	99,71
24	37a	9.1	42	2,42	2,57	2,62	2,45	4	2,52		0,10	3,79	99,72
25	48x	4.1	31	2,57	2,55	2,64	2,62	4	2,59		0,04	1,53	102,85
26	02	5.3	31	2,90	2,40	2,90	2,20	4	2,60		0,36	13,69	103,09
27	50x	4.1	31	2,64	2,54	2,67	2,62	4	2,62		0,06	2,12	103,78
28	09	4.5	31	2,71	2,57	2,66	2,72	4	2,66		0,07	2,48	105,58
29	26	5.5	31	2,56	2,39	3,08	2,66	4	2,67		0,29	10,99	105,96
30	49	4.1	31	2,60	2,90	2,70	2,50	4	2,68		0,17	6,38	106,06
31	42	4.1	32	2,79	2,87	2,67	2,82	4	2,79		0,08	3,05	110,52
32	73	4	31	2,87	2,76	2,71	2,84	4	2,80		0,07	2,62	110,82
33	04x	9.1	41	2,50	3,00	3,20	2,60	4	2,83		0,33	11,70	112,01
34	60	3.3	31	2,80	2,90	3,03	2,81	4	2,89		0,11	3,70	114,39
35	05	3.3	21.1	3,00	3,00	3,00	3,00	4	3,00		0,00	0,00	118,95
36	04a	9.1	42	2,91	2,99	3,13	3,15	4	3,05	*	0,11	3,77	120,73
37	38a	9.1	42	3,24	3,09	3,15	3,21	4	3,17	*	0,07	2,10	125,79
38	52	3.1	31	3,99	2,90	3,15	2,79	4	3,21	*	0,54	16,93	127,17
39	64	6.4	31	3,42	3,26	3,10	3,25	4	3,26	*	0,13	4,01	129,16
40													
41													
42	76	4.5	31	<3,44	<3,44	<3,44	<3,44						
43	12	4.1	31	<1,66	<1,66	<1,66	<1,66						
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	N	Mean	SI	VI
all labs	156	**2,52**	**0,123**	**4,866**
20	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
39	**0,327**	**12,984**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Cu **Sample: 3** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	76	4.5	31	7,36	6,41	7,12	7,00	4	6,97	0,40	5,79	83,33
2	07x	5.5	31	7,02	7,02	7,12	7,18	4	7,09	0,08	1,11	84,67
3	12	4.1	31	7,82	7,72	7,32	7,18	4	7,51	0,31	4,11	89,75
4	32	5.7	31	7,63	7,51	7,68	7,54	4	7,59	0,08	1,04	90,71
5	46	5.1	35	7,78	7,13	7,56	8,12	4	7,65	0,41	5,42	91,40
6	77	5.1	31	7,69	7,74	7,85	7,93	4	7,80	0,11	1,39	93,25
7	39x	4.5	35	7,65	7,80	8,01	7,79	4	7,81	0,15	1,90	93,37
8	25	5.1	21.1	7,92	7,79	7,93	7,93	4	7,89	0,07	0,87	94,32
9	11	5.1	22	8,01	7,98	7,88	7,82	4	7,92	0,09	1,11	94,68
10	78	5.5	31	8,20	7,70	7,70	8,10	4	7,93	0,26	3,32	94,71
11	36x	5.5	31	8,47	7,34	7,87	8,09	4	7,94	0,47	5,94	94,92
12	49	4.1	31	7,50	8,20	7,60	8,50	4	7,95	0,48	6,03	95,01
13	18x	3.31	31	8,14	8,32	7,55	8,01	4	8,01	0,33	4,11	95,67
14	52	3.1	31	7,68	7,79	9,03	7,87	4	8,09	0,63	7,78	96,71
15	17x	5.5	32	8,12	8,07	8,08	8,16	4	8,11	0,04	0,51	96,89
16	08	6.3	31	8,07	8,03	8,17	8,26	4	8,13	0,10	1,27	97,19
17	43x	4.1	31	8,05	8,11	8,38	8,19	4	8,18	0,14	1,76	97,79
18	23x	5.1	31	8,33	8,35	8,30	8,27	4	8,31	0,03	0,41	99,37
19	26	5.5	31	7,83	8,10	8,94	8,42	4	8,32	0,48	5,73	99,46
20	33a	5.1	21	8,21	8,09	8,20	8,79	4	8,32	0,32	3,80	99,46
21	37a	9.1	42	8,53	8,46	8,27	8,34	4	8,40	0,12	1,39	100,39
22	56	5.5	31	8,52	8,46	8,28	8,53	4	8,45	0,12	1,37	100,96
23	50x	4.1	31	8,63	8,25	8,71	8,26	4	8,46	0,24	2,86	101,14
24	13	5.3	21.1	9,82	8,80	8,33	6,95	4	8,48	1,19	14,06	101,29
25	02	5.3	31	8,20	8,30	8,70	8,70	4	8,48	0,26	3,10	101,29
26	05	3.3	21.1	8,50	8,50	8,50	8,50	4	8,50	0,00	0,00	101,58
27	47x	4.1	31	8,46	8,38	8,61	8,62	4	8,52	0,12	1,38	101,79
28	38a	9.1	42	8,58	8,46	8,56	8,62	4	8,56	0,07	0,80	102,24
29	37	5.5	35	8,55	8,66	8,88	8,62	4	8,68	0,14	1,64	103,71
30	44x	4.1	32	9,00	8,50	8,70	8,60	4	8,70	0,22	2,48	103,97
31	42	4.1	32	8,94	8,79	8,73	8,81	4	8,82	0,09	1,00	105,38
32	29x	3.3	31	8,78	8,89	8,88	8,73	4	8,82	0,08	0,89	105,44
33	04x	9.1	41	7,30	9,00	10,00	9,00	4	8,83	1,12	12,70	105,47
34	38x	4.5	31	8,76	8,81	8,92	8,81	4	8,83	0,07	0,77	105,47
35	09	4.5	31	8,74	8,97	8,84	9,08	4	8,91	0,15	1,66	106,43
36	60	3.3	31	8,94	9,04	9,17	8,72	4	8,97	0,19	2,12	107,17
37	74x	5.5	22	9,08	8,90	*10,28a*	8,93	3	8,97	0,10	1,08	107,20
38	64	6.4	31	9,40	9,46	9,25	9,50	4	9,40	0,11	1,17	112,37
39	73	4	31	9,69	9,47	9,59	9,50	4	9,56	0,10	1,04	114,28
40	48x	4.1	31	9,58	9,65	9,67	9,67	4	9,64	0,04	0,44	115,22
41	04a	9.1	42	9,84	9,49	9,53	10,08	4	9,74	0,28	2,86	116,34
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	N	Mean	SI	VI
all labs	163	**8,37**	**0,238**	**2,850**
20	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
41	**0,624**	**7,454**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Cu **Sample: 4** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	76	4.5	31	6,68	6,56	6,48	6,39	4	6,53	0,12	1,89	81,18
2	07x	5.5	31	6,77	6,82	6,77	6,66	4	6,76	0,07	1,00	84,01
3	12	4.1	31	6,65	7,39	7,32	6,84	4	7,05	0,36	5,13	87,68
4	49	4.1	31	7,20	7,70	7,00	7,50	4	7,35	0,31	4,23	91,41
5	39x	4.5	35	7,32	7,33	7,38	7,47	4	7,38	0,07	0,93	91,72
6	11	5.1	22	7,34	7,38	7,34	7,45	4	7,38	0,05	0,70	91,75
7	25	5.1	21.1	7,56	7,29	7,39	7,39	4	7,41	0,11	1,51	92,12
8	78	5.5	31	7,50	7,50	7,50	7,30	4	7,45	0,10	1,34	92,65
9	77	5.1	31	7,41	7,51	7,62	7,63	4	7,54	0,10	1,38	93,80
10	32	5.7	31	7,40	7,71	7,58	7,69	4	7,60	0,14	1,87	94,46
11	17x	5.5	32	7,60	7,88	7,69	7,57	4	7,69	0,14	1,82	95,58
12	18x	3.31	31	7,77	7,75	7,98	7,47	4	7,74	0,21	2,70	96,29
13	46	5.1	35	7,57	8,45	7,68	7,54	4	7,81	0,43	5,52	97,13
14	43x	4.1	31	8,04	7,72	7,84	7,90	4	7,88	0,13	1,69	97,94
15	13	5.3	21.1	9,02	7,20	7,20	8,23	4	7,91	0,88	11,17	98,41
16	60	3.3	31	7,84	7,82	7,98	8,06	4	7,93	0,11	1,45	98,56
17	04x	9.1	41	7,90	8,10	8,20	7,60	4	7,95	0,26	3,33	98,87
18	23x	5.1	31	7,92	7,96	8,03	8,03	4	7,98	0,06	0,71	99,29
19	52	3.1	31	7,72	8,60	7,83	8,00	4	8,04	0,39	4,88	99,96
20	33a	5.1	21	7,83	7,88	8,18	8,35	4	8,06	0,25	3,07	100,24
21	08	6.3	31	8,07	7,98	7,85	8,39	4	8,07	0,23	2,85	100,40
22	38a	9.1	42	7,87	8,21	8,14	8,23	4	8,11	0,17	2,05	100,89
23	50x	4.1	31	8,12	8,18	8,29	7,95	4	8,14	0,14	1,75	101,17
24	47x	4.1	31	8,08	8,12	8,23	8,22	4	8,16	0,07	0,91	101,51
25	56	5.5	31	8,09	8,27	8,12	8,21	4	8,17	0,08	1,01	101,64
26	26	5.5	31	7,94	8,66	8,63	7,60	4	8,21	0,52	6,38	102,07
27	37	5.5	35	8,37	8,47	8,00	8,19	4	8,26	0,21	2,51	102,70
28	44x	4.1	32	8,30	8,40	8,10	8,30	4	8,28	0,13	1,52	102,91
29	04a	9.1	42	7,99	7,90	8,73	8,59	4	8,30	0,42	5,04	103,26
30	74x	5.5	22	8,31	8,33	8,44	8,38	4	8,37	0,06	0,69	104,03
31	09	4.5	31	8,33	8,40	8,31	8,54	4	8,40	0,10	1,25	104,43
32	29x	3.3	31	8,43	8,35	8,50	8,46	4	8,44	0,06	0,72	104,91
33	38x	4.5	31	8,41	8,49	8,45	8,46	4	8,45	0,03	0,39	105,12
34	02	5.3	31	8,50	8,50	8,50	8,50	4	8,50	0,00	0,00	105,71
35	36x	5.5	31	8,31	8,74	8,63	8,52	4	8,55	0,18	2,15	106,33
36	37a	9.1	42	8,52	8,56	8,64	8,68	4	8,60	0,07	0,85	106,96
37	73	4	31	8,62	8,81	8,80	8,81	4	8,76	0,09	1,07	108,95
38	42	4.1	32	9,02	8,65	9,26	8,56	4	8,87	0,33	3,68	110,34
39	05	3.3	21.1	9,00	9,00	9,00	9,00	4	9,00	0,00	0,00	111,93
40	48x	4.1	31	9,16	8,99	8,97	9,23	4	9,09	0,13	1,43	113,00
41	64	6.4	31	10,23	9,69	8,99	9,26	4	9,54	0,54	5,67	118,68
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	N	Mean	SI	VI
	all labs	164	**8,04**	**0,192**	**2,393**
* = non tolerable mean because more than +/-	20	% from the mean		
	L		SR	VR
	41		**0,610**	**7,586**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Pb **Sample: 1** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	11	5.1	22	0,16	0,14	0,17	0,16	4	0,16		*	0,01	7,99	48,06
2	38x	5.5	22	0,24	0,25	0,24	0,24	4	0,24			0,00	1,93	73,46
3	39x	5.5	35	0,24	0,25	0,25	0,24	4	0,25			0,01	2,36	74,76
4	37	5.5	35	0,26	0,23	0,30	0,26	4	0,26			0,03	11,11	80,02
5	74x	5.5	22	0,27	0,25	0,27	0,29	4	0,27			0,02	6,05	82,39
6	48x	4.1	35	0,28	0,27	0,28	0,28	4	0,28			0,01	2,39	84,76
7	03	4.1	22	0,29	0,28	0,30	0,26	4	0,28			0,02	6,35	86,69
8	60	3.1	22	0,28	0,30	0,30	0,28	4	0,29			0,01	3,98	88,49
9	73	5	35	0,31	0,31	0,29	0,29	4	0,30			0,01	3,85	91,54
10	13	5.3	21.1	0,27	0,29	0,31	0,35	4	0,31			0,03	11,20	93,07
11	64	5.1	22	0,35	0,30	0,32	0,32	4	0,32			0,02	6,11	98,02
12	56	5.5	22	0,31	0,37	0,34	0,33	4	0,34			0,03	7,48	102,45
13	32	5.7	31	0,34	0,34	0,44	0,37	4	0,37			0,05	12,64	113,28
14	09	5.5	31	0,43	0,38	0,34	0,38	4	0,38			0,04	9,14	117,32
15	47x	4.1	31	0,47	0,50	0,21	0,36	4	0,39			0,13	33,91	117,48
16	42	4.1	32	0,39	0,36	0,40	0,40	4	0,39			0,02	4,89	118,24
17	44x	4.1	32	*0,51a*	0,40	0,42	0,41	3	0,41			0,01	2,44	125,10
18	26	5.5	35	0,42	0,41	0,46	0,42	4	0,43		*	0,02	5,36	130,06
19	50x	4.1	31	0,45	0,52	0,44	0,38	4	0,44		*	0,06	12,76	135,40
20	36x	5.5	31	0,49	0,47	0,48	0,47	4	0,48		*	0,01	2,01	145,70
21	78	5.5	31	*1,06*	*1,05*	*1,30*	*1,30*	0	*1,18*	b	*	0,14	12,02	359,29
22														
23														
24	33a	5.1	21	<2	<2	<2	<2							
25	17x	5.5	32	<2	<2	<2	<2							
26	08	6.3	32	<1,19	<1,19	<1,19	<1,18							
27	29x	3.3	31	<1	<1	<1	<1							
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	N	Mean	SI	VI
all labs	79	**0,33**	**0,026**	**8,022**
30	% from the mean			
	L		SR	VR
	20		**0,080**	**24,428**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Pb **Sample: 2** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	11	5.1	22	0,10	0,11	0,10	0,10	4	0,10		*	0,00	4,88	42,62
2	39x	5.5	35	0,16	0,17	0,18	0,17	4	0,17			0,01	4,80	70,69
3	38x	5.5	22	0,17	0,18	0,17	0,18	4	0,17			0,00	1,52	72,56
4	74x	5.5	22	0,19	0,18	0,18	0,18	4	0,18			0,01	2,74	75,89
5	37	5.5	35	0,19	0,18	0,17	0,19	4	0,18			0,01	4,02	76,61
6	13	5.3	21.1	0,15	0,31	0,15	0,18	4	0,20			0,08	38,64	82,12
7	48x	4.1	35	0,20	0,21	0,19	0,20	4	0,20			0,00	2,28	82,73
8	56	5.5	22	0,23	0,22	0,16	0,21	4	0,21			0,03	15,90	85,76
9	60	3.1	22	0,20	0,22	0,22	0,22	4	0,22			0,01	4,65	89,40
10	03	4.1	22	0,23	0,20	0,24	0,22	4	0,22			0,02	8,24	91,64
11	73	5	35	0,25	0,23	0,23	0,24	4	0,24			0,01	4,03	98,76
12	64	5.1	22	0,28	0,27	0,27	0,30	4	0,28			0,01	4,55	116,22
13	47x	4.1	31	0,33	0,30	0,30	0,31	4	0,31			0,01	4,79	128,70
14	50x	4.1	31	0,33	0,39	0,25	0,30	4	0,32		*	0,06	17,50	131,09
15	42	4.1	32	0,33	0,32	0,28	0,37	4	0,33		*	0,04	11,37	135,14
16	26	5.5	35	0,38	0,32	0,34	0,28	4	0,33		*	0,04	12,62	137,22
17	32	5.7	31	0,32	0,34	0,34	0,33	4	0,33		*	0,01	3,06	138,47
18	09	5.5	31	0,34	0,35	0,31	0,39	4	0,35		*	0,03	9,92	144,39
19	36x	5.5	31	*0,53*	*0,55*	*0,53*	*0,54*	0	*0,54*	b	*	0,01	1,78	223,50
20	78	5.5	31	*0,94*	*0,98*	*0,93*	*1,00*	0	*0,96*	b	*	0,03	3,43	400,22
21														
22														
23	33a	5.1	21	<2	<2	<2	<2							
24	17x	5.5	32	<2	<2	<2	<2							
25	08	6.3	32	<1,2	<1,2	<1,2	<1,2							
26	29x	3.3	31	<1	<1	<1	<1							
27	44x	4.1	32	<,38	<,38	<,38	<,38							
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	N	Mean	SI	VI
all labs	72	**0,24**	**0,021**	**8,907**
30	% from the mean			

L	SR	VR
18	**0,072**	**29,863**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Pb **Sample: 3** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	47x	4.1	31	0,36	0,39	0,38	0,43	4	0,39			0,03	7,68	79,57
2	32	5.7	31	0,42	0,37	0,40	0,45	4	0,41			0,03	8,05	83,72
3	64	5.1	22	0,40	0,48	0,37	0,41	4	0,42			0,05	10,93	85,21
4	38x	5.5	22	0,43	0,42	0,47	0,42	4	0,44			0,02	5,56	89,56
5	50x	4.1	31	0,41	0,43	0,55	0,39	4	0,44			0,07	15,51	91,10
6	37	5.5	35	0,43	0,45	0,44	0,46	4	0,45			0,01	2,73	91,20
7	09	5.5	31	0,52	0,47	0,45	0,45	4	0,47			0,03	6,41	96,73
8	39x	5.5	35	0,46	0,48	0,48	0,47	4	0,47			0,01	2,03	96,78
9	13	5.3	21.1	0,46	0,47	0,56	0,47	4	0,49			0,05	9,57	100,36
10	48x	4.1	35	0,49	0,49	0,50	0,50	4	0,49			0,00	0,94	101,28
11	60	3.1	22	0,52	0,52	0,47	0,47	4	0,50			0,03	5,83	101,39
12	11	5.1	22	0,48	0,52	0,51	0,51	4	0,51			0,02	3,43	103,44
13	73	5	35	0,52	0,53	0,51	0,51	4	0,52			0,01	1,85	106,00
14	74x	5.5	22	0,52	0,54	0,51	0,53	4	0,53			0,01	2,46	107,53
15	44x	4.1	32	0,53	0,52	0,54	0,52	4	0,53			0,01	1,82	108,04
16	56	5.5	22	0,52	0,54	0,54	0,52	4	0,53			0,01	2,01	108,25
17	03	4.1	22	0,54	0,52	0,59	0,50	4	0,54			0,04	6,67	110,21
18	42	4.1	32	0,60	0,56	0,54	0,55	4	0,56			0,03	4,68	115,21
19	26	5.5	35	0,62	0,59	0,63	0,59	4	0,61			0,02	3,39	124,43
20	36x	5.5	31	*0,72*	*0,68*	*0,67*	*0,71*	0	*0,70*	b	*	0,02	3,43	142,35
21														
22														
23	33a	5.1	21	<2	<2	<2	<2							
24	17x	5.5	32	<2	<2	<2	<2							
25	08	6.3	32	<1,19	<1,19	<1,19	<1,2							
26	29x	3.3	31	<1	<1	<1	<1							
27	78	5.5	31	<,5	<,5	<,5	<,5							
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	N	Mean	SI	VI
all labs	76	**0,49**	**0,025**	**5,139**
30	% from the mean			

L	SR	VR
19	**0,056**	**11,454**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Pb **Sample: 4** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	50x	4.1	31	*0,61*	*0,57*	*0,51*	*0,51*	0	*0,55*	b		0,05	8,50	80,78
2	42	4.1	32	0,58	0,58	0,63	0,65	4	0,61			0,04	5,83	89,71
3	48x	4.1	35	0,64	0,66	0,60	0,65	4	0,64			0,03	3,95	93,44
4	64	5.1	22	0,70	0,58	0,65	0,63	4	0,64			0,05	7,63	94,19
5	11	5.1	22	0,69	0,64	0,64	0,62	4	0,65			0,03	4,61	95,22
6	38x	5.5	22	0,65	0,66	0,65	0,64	4	0,65			0,01	1,12	95,48
7	37	5.5	35	0,67	0,64	0,67	0,66	4	0,66			0,01	1,72	96,88
8	73	5	35	0,68	0,66	0,68	0,64	4	0,67			0,02	2,88	97,80
9	13	5.3	21.1	*0,66*	*0,51*	*0,79*	*0,72*	0	*0,67*	c		0,12	17,79	98,53
10	39x	5.5	35	0,64	0,72	0,67	0,71	4	0,69			0,04	5,40	100,74
11	32	5.7	31	0,73	0,72	0,62	0,69	4	0,69			0,05	7,60	101,25
12	74x	5.5	22	0,71	0,66	0,67	0,74	4	0,70			0,04	5,32	102,21
13	60	3.1	22	0,68	0,71	0,70	0,71	4	0,70			0,01	2,02	102,95
14	09	5.5	31	0,71	0,78	0,66	0,69	4	0,71			0,05	7,42	104,16
15	44x	4.1	32	*0,80*	*0,70*	*0,81*	*0,58*	0	*0,72*	c		0,11	14,84	106,25
16	56	5.5	22	0,81	0,68	0,73	0,68	4	0,72			0,06	8,41	106,40
17	36x	5.5	31	0,78	0,71	0,71	0,74	4	0,74			0,03	4,51	108,09
18	03	4.1	22	*0,8439a*	0,68	0,71	0,71	3	0,70			0,02	2,39	103,19
19	47x	4.1	31	0,81	0,77	0,74	0,65	4	0,74			0,07	9,01	109,08
20	26	5.5	35	*0,94*	*0,92*	*0,91*	*1,1a*	0	*0,92*	b	*	0,02	1,65	135,79
21														
22														
23	33a	5.1	21	<2	<2	<2	<2							
24	17x	5.5	32	<2	<2	<2	<2							
25	08	6.3	32	<1,22	<1,22	<1,23	<1,22							
26	29x	3.3	31	<1	<1	<1	<1							
27	78	5.5	31	<,5	<,5	<,5	<,5							
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	N	Mean	SI	VI
all labs	63	**0,68**	**0,034**	**5,035**
30	% from the mean			
	L		SR	VR
	16		**0,038**	**5,610**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: B **Sample: 1** Dimension: mg/kg

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	76	5.5	31	*4,88*	*5,10*	*5,68*	*4,45*	0	*5,03*	b *	0,51	10,18	36,45
2	36x	5.5	31	9,21	8,27	10,65	9,43	4	9,39	*	0,98	10,43	68,08
3	38x	4.5	31	12,00	11,90	12,00	12,50	4	12,10		0,27	2,24	87,73
4	50x	4.1	31	12,27	11,83	12,39	12,34	4	12,21		0,26	2,10	88,51
5	56	5.5	31	12,60	12,10	12,70	12,10	4	12,38		0,32	2,59	89,73
6	52	3.1	31	12,49	12,73	12,10	12,70	4	12,51		0,29	2,32	90,67
7	64	6.4	31	12,43	12,93	12,62	12,09	4	12,52		0,35	2,81	90,76
8	37	5.5	31	12,75	13,14	12,72	12,66	4	12,82		0,22	1,70	92,94
9	77	5.1	31	12,77	12,45	13,45	13,08	4	12,94		0,43	3,31	93,81
10	39x	5.5	31	12,80	13,00	12,90	13,30	4	13,00		0,22	1,66	94,26
11	26	3.5	31	12,80	12,80	12,90	13,60	4	13,03		0,39	2,97	94,44
12	25	5.1	31	13,80	12,90	13,70	13,10	4	13,38		0,44	3,31	96,98
13	11	5.1	31	13,20	13,50	13,70	13,60	4	13,50		0,22	1,60	97,88
14	17x	5.5	31	13,72	13,66	14,03	13,04	4	13,61		0,41	3,05	98,70
15	07x	5.5	31	13,70	13,80	13,50	13,70	4	13,68		0,13	0,92	99,15
16	42	4.1	32	13,70	13,60	13,70	13,70	4	13,68		0,05	0,37	99,15
17	60	3.3	32	14,09	14,04	13,69	13,87	4	13,92		0,18	1,30	100,95
18	66	5.5	31	14,50	14,50	14,70	14,70	4	14,60		0,12	0,79	105,86
19	32	5.7	31	14,71	14,89	15,01	14,96	4	14,89		0,13	0,88	107,98
20	02	5.3	31	15,80	15,40	15,70	15,10	4	15,50		0,32	2,04	112,39
21	73	5	31	15,80	15,80	15,60	14,90	4	15,53		0,43	2,75	112,57
22	48x	4.1	35	16,48	15,84	15,62	16,22	4	16,04		0,38	2,39	116,30
23	29x	3.3	31	15,68	19,75	15,26	18,09	4	17,20	*	2,11	12,28	124,68
24	49	4.1	31	22,00	14,30	17,80	21,20	4	18,83	*	3,52	18,72	136,49
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	N	Mean	SI	VI
all labs	92	**13,79**	**0,529**	**3,832**
20	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
24	**1,943**	**14,085**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: B **Sample: 2** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	76	5.5	31	15,00	15,30	14,50	15,90	4	15,18	*	0,59	3,86	63,48
2	36x	5.5	31	18,41	17,64	18,76	16,87	4	17,92	*	0,84	4,70	74,97
3	50x	4.1	31	21,13	21,14	21,65	21,04	4	21,24		0,28	1,30	88,85
4	56	5.5	31	22,30	22,40	22,30	22,50	4	22,38		0,10	0,43	93,60
5	26	3.5	31	22,00	21,80	22,90	23,40	4	22,53		0,75	3,35	94,23
6	77	5.1	31	22,29	22,62	22,65	22,96	4	22,63		0,27	1,21	94,67
7	32	5.7	31	22,16	22,98	22,74	22,78	4	22,67		0,35	1,56	94,81
8	52	3.1	31	22,92	22,46	22,71	22,93	4	22,76		0,22	0,97	95,19
9	25	5.1	31	23,10	23,50	24,50	22,10	4	23,30		0,99	4,26	97,47
10	07x	5.5	31	23,30	23,70	23,40	23,50	4	23,48		0,17	0,73	98,20
11	17x	5.5	31	23,61	23,77	23,42	23,21	4	23,50		0,24	1,03	98,32
12	60	3.3	32	23,79	23,21	23,48	23,65	4	23,53		0,25	1,06	98,44
13	37	5.5	31	23,72	24,49	23,06	23,50	4	23,69		0,60	2,53	99,11
14	38x	4.5	31	24,20	23,50	23,50	23,90	4	23,78		0,34	1,43	99,46
15	42	4.1	32	24,10	24,10	24,10	24,10	4	24,10		0,00	0,00	100,82
16	11	5.1	31	23,90	24,10	24,00	24,50	4	24,13		0,26	1,09	100,92
17	66	5.5	31	24,70	24,20	24,30	24,60	4	24,45		0,24	0,97	102,28
18	29x	3.3	31	24,07	24,09	26,05	26,42	4	25,16		1,25	4,98	105,24
19	64	6.4	31	26,74	25,24	25,39	25,92	4	25,82		0,68	2,62	108,02
20	73	5	31	26,40	26,50	26,00	25,90	4	26,20		0,29	1,12	109,60
21	02	5.3	31	26,90	26,30	25,70	26,60	4	26,38		0,51	1,94	110,33
22	49	4.1	31	28,20	24,70	27,70	25,10	4	26,43		1,78	6,74	110,54
23	48x	4.1	35	29,28	30,56	30,77	30,85	4	30,37	*	0,73	2,42	127,03
24	39x	5.5	31	32,10	32,50	32,20	31,70	4	32,13	*	0,33	1,03	134,39
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	N	Mean	SI	VI
all labs	96	**23,90**	**0,503**	**2,105**
20	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
24	**3,371**	**14,104**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: B **Sample: 3** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	76	5.5	31	18,20	18,50	18,30	18,30	4	18,33	*	0,13	0,69	66,53
2	32	5.7	31	23,20	23,14	23,18	22,98	4	23,13		0,10	0,43	83,96
3	50x	4.1	31	23,46	23,61	23,71	23,90	4	23,67		0,18	0,78	85,94
4	56	5.5	31	25,80	25,40	26,00	26,00	4	25,80		0,28	1,10	93,67
5	52	3.1	31	26,06	25,92	25,86	25,39	4	25,81		0,29	1,13	93,70
6	60	3.3	32	26,11	25,40	26,38	25,46	4	25,84		0,48	1,87	93,81
7	07x	5.5	31	25,70	26,00	25,70	26,30	4	25,93		0,29	1,11	94,13
8	77	5.1	31	25,02	25,50	26,67	26,58	4	25,94		0,81	3,13	94,19
9	26	3.5	31	25,30	26,20	26,10	26,30	4	25,98		0,46	1,76	94,31
10	17x	5.5	31	26,25	26,55	26,23	25,48	4	26,13		0,46	1,74	94,86
11	25	5.1	31	26,70	26,60	28,20	25,30	4	26,70		1,19	4,44	96,94
12	37	5.5	31	26,85	26,53	27,29	26,97	4	26,91		0,31	1,17	97,70
13	49	4.1	31	26,60	27,80	26,00	27,70	4	27,03		0,87	3,23	98,12
14	42	4.1	32	27,10	27,20	27,10	27,20	4	27,15		0,06	0,21	98,58
15	38x	4.5	31	27,10	27,70	27,10	27,60	4	27,38		0,32	1,17	99,39
16	66	5.5	31	28,10	27,70	27,80	27,70	4	27,83		0,19	0,68	101,03
17	73	5	31	28,90	29,20	29,50	29,40	4	29,25		0,26	0,90	106,20
18	11	5.1	31	29,30	30,60	29,40	28,70	4	29,50		0,80	2,70	107,11
19	02	5.3	31	28,90	28,80	30,40	30,40	4	29,63		0,90	3,02	107,56
20	36x	5.5	31	30,27	28,67	30,41	29,25	4	29,65		0,83	2,81	107,65
21	64	6.4	31	34,82	29,37	30,94	29,47	4	31,15		2,55	8,19	113,10
22	29x	3.3	31	30,25	30,08	34,10	35,86	4	32,57		2,87	8,82	118,26
23	39x	5.5	31	34,80	34,60	34,20	34,80	4	34,60	*	0,28	0,82	125,62
24	48x	4.1	35	35,11	34,94	35,54	35,00	4	35,15	*	0,27	0,77	127,61
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	N	Mean	SI	VI
all labs	96	**27,54**	**0,633**	**2,297**
20	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
24	**3,619**	**13,139**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: B **Sample: 4** Dimension: mg/kg

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	76	5.5	31	22,30	22,20	22,80	22,50	4	22,45	*	0,26	1,18	69,40
2	50x	4.1	31	26,27	27,43	28,41	26,89	4	27,25		0,91	3,33	84,24
3	32	5.7	31	28,56	28,93	28,71	28,81	4	28,75		0,16	0,55	88,88
4	56	5.5	31	30,60	30,60	30,1a	30,60	3	30,60		0,00	0,00	94,59
5	60	3.3	32	30,32	31,01	30,93	29,98	4	30,56		0,49	1,62	94,47
6	07x	5.5	31	30,70	30,70	30,30	30,60	4	30,58		0,19	0,62	94,51
7	52	3.1	31	31,43	31,29	30,36	30,06	4	30,79		0,68	2,20	95,16
8	25	5.1	31	31,50	31,00	32,20	28,80	4	30,88		1,47	4,76	95,44
9	17x	5.5	31	31,51	31,33	30,93	30,33	4	31,03		0,52	1,69	95,90
10	77	5.1	31	30,64	30,81	31,71	31,08	4	31,06		0,47	1,51	96,01
11	37	5.5	31	30,60	30,87	32,08	31,39	4	31,24		0,65	2,09	96,55
12	36x	5.5	31	31,65	31,14	32,32	30,40	4	31,38		0,81	2,59	96,99
13	38x	4.5	31	31,70	31,60	32,30	32,10	4	31,93		0,33	1,03	98,69
14	42	4.1	32	31,80	32,20	32,00	32,00	4	32,00		0,16	0,51	98,92
15	66	5.5	31	32,40	32,70	32,90	33,20	4	32,80		0,34	1,03	101,39
16	73	5	31	32,90	33,00	33,00	33,00	4	32,98		0,05	0,15	101,93
17	26	3.5	31	30,60	33,00	35,10	34,80	4	33,38		2,07	6,20	103,17
18	49	4.1	31	34,50	32,70	33,90	35,00	4	34,03		0,99	2,91	105,18
19	11	5.1	31	34,90	33,80	33,90	34,60	4	34,30		0,54	1,56	106,03
20	29x	3.3	31	33,25	35,25	34,93	35,54	4	34,74		1,03	2,95	107,40
21	02	5.3	31	35,80	35,90	35,70	35,10	4	35,63		0,36	1,01	110,12
22	64	6.4	31	41,57	36,08	34,90	38,24	4	37,70		2,93	7,77	116,53
23	39x	5.5	31	38,20	38,20	38,40	37,80	4	38,15		0,25	0,66	117,93
24	48x	4.1	35	41,84	41,63	42,04	41,69	4	41,80	*	0,18	0,44	129,21
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	N	Mean	SI	VI
all labs	95	**32,35**	**0,660**	**2,040**
20	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
24	**3,806**	**11,771**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Cd **Sample: 1** Dimension: ng/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	78	5.5	31	45,00	37,00	43,00	44,00	4	42,25	*	3,59	8,51	67,19
2	09	5.5	31	47,00	43,00	41,00	40,00	4	42,75	*	3,10	7,24	67,98
3	74x	5.5	22	57,52	57,06	57,08	53,72	4	56,35		1,76	3,13	89,60
4	47x	4.1	31	55,00	57,00	57,00	58,00	4	56,75		1,26	2,22	90,25
5	56	5.5	22	56,00	57,00	55,00	60,00	4	57,00		2,16	3,79	90,64
6	37	5.5	35	59,00	57,00	56,00	60,00	4	58,00		1,83	3,15	92,23
7	38x	5.5	22	58,00	59,00	59,00	60,00	4	59,00		0,82	1,38	93,82
8	11	5.1	22	65,00	58,00	56,00	58,00	4	59,25		3,95	6,66	94,22
9	73	5	35	61,00	59,00	61,00	60,00	4	60,25		0,96	1,59	95,81
10	39x	5.5	35	58,90	61,50	60,80	61,30	4	60,63		1,19	1,96	96,41
11	26	5.5	35	60,00	62,00	65,00	62,00	4	62,25		2,06	3,31	98,99
12	48x	4.1	35	61,06	61,29	63,74	63,39	4	62,37		1,39	2,23	99,18
13	60	3.1	22	61,80	63,90	62,90	62,90	4	62,88		0,86	1,36	99,99
14	44x	4.1	32	67,90	61,70	63,50	63,60	4	64,18		2,63	4,10	102,05
15	64	5.1	22	63,87	65,67	64,92	63,87	4	64,58		0,88	1,36	102,70
16	25	5.1	22	69,18	66,23	63,44	69,96	4	67,20		2,98	4,43	106,87
17	13	5.3	22	66,27	70,91	67,51	67,67	4	68,09		1,98	2,91	108,28
18	03	4.1	22	69,20	70,10	70,90	70,50	4	70,18		0,73	1,04	111,59
19	42	4.1	20	73,00	75,00	73,00	75,00	4	74,00		1,15	1,56	117,68
20	50x	4.1	31	82,30	80,40	77,90	86,70	4	81,83	*	3,72	4,54	130,12
21	36x	5.5	31	91,30	89,67	92,21	90,03	4	90,80	*	1,17	1,29	144,40
22													
23													
24	08	6.3	32	<263	<263	<264	<262						
25	33a	5.1	21	<200	<200	<200	<200						
26	29x	3.3	31	<100	<100	<100	<100						
27	17x	5.5	32	<100	<100	<100	<100						
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	N	Mean	SI	VI
all labs	84	**62,88**	**1,912**	**3,041**
30	% from the mean			

L	SR	VR
21	**10,900**	**17,334**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	47x	4.1	31	25,00	22,00	25,00	21,00	4	23,25			2,06	8,87	75,98
2	56	5.5	22	25,00	26,00	23,00	25,00	4	24,75			1,26	5,08	80,88
3	74x	5.5	22	25,75	28,99	21,68	25,89	4	25,58			3,00	11,72	83,58
4	37	5.5	35	27,00	28,00	29,00	24,00	4	27,00			2,16	8,00	88,23
5	11	5.1	22	28,00	26,00	27,00	28,00	4	27,25			0,96	3,51	89,05
6	44x	4.1	32	29,60	25,60	28,80	27,80	4	27,95			1,73	6,19	91,33
7	38x	5.5	22	28,00	28,00	30,00	28,00	4	28,50			1,00	3,51	93,13
8	73	5	35	30,00	30,00	30,00	30,00	4	30,00			0,00	0,00	98,03
9	39x	5.5	35	30,00	29,30	30,60	30,70	4	30,15			0,65	2,14	98,52
10	48x	4.1	35	31,64	29,11	31,82	31,45	4	31,01			1,27	4,10	101,32
11	26	5.5	35	30,00	32,00	33,00	31,00	4	31,50			1,29	4,10	102,93
12	60	3.1	22	31,50	32,55	31,50	32,55	4	32,03			0,61	1,89	104,65
13	03	4.1	22	33,50	34,40	33,80	33,90	4	33,90			0,37	1,10	110,78
14	64	5.1	22	35,75	36,28	33,12	32,60	4	34,44			1,85	5,36	112,53
15	25	5.1	22	37,64	35,10	31,25	38,46	4	35,61			3,24	9,10	116,37
16	13	5.3	22	37,37	34,99	37,49	35,46	4	36,33			1,29	3,55	118,71
17	42	4.1	20	41,00	42,00	40,00	41,00	4	41,00		*	0,82	1,99	133,98
18	50x	4.1	31	*63,60*	*56,70*	*51,50*	*65,40*	0	*59,30*	b	*	6,41	10,81	193,78
19	36x	5.5	31	*74,98*	*82,02*	*78,98*	*83,23*	0	*79,80*	b	*	3,68	4,61	260,77
20														
21														
22	08	6.3	32	<266	<265	<265	<266							
23	33a	5.1	21	<200	<200	<200	<200							
24	29x	3.3	31	<100	<100	<100	<100							
25	17x	5.5	32	<100	<100	<100	<100							
26	09	5.5	31	<40	<40	<40	<40							
27	78	5.5	31	<20	<20	<20	<20							
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	N	Mean	SI	VI
all labs	68	**30,60**	**1,385**	**4,526**
30	% from the mean			

L	SR	VR
17	**4,639**	**15,160**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean			Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4					Si	Vi	%
1	47x	4.1	31	10,00	10,00	11,00	10,00	4	10,25		*	0,50	4,88	68,55
2	38x	5.5	22	11,00	11,00	11,00	10,00	4	10,75			0,50	4,65	71,90
3	11	5.1	22	12,00	13,00	11,00	13,00	4	12,25			0,96	7,82	81,93
4	60	3.1	22	11,55	12,60	12,60	12,60	4	12,34			0,52	4,26	82,51
5	48x	4.1	35	12,33	12,09	12,79	12,31	4	12,38			0,29	2,38	82,80
6	37	5.5	35	14,00	16,00	12,00	12,00	4	13,50			1,91	14,18	90,29
7	73	5	35	14,00	14,00	13,00	13,00	4	13,50			0,58	4,28	90,29
8	26	5.5	35	14,00	14,00	15,00	13,00	4	14,00			0,82	5,83	93,63
9	03	4.1	22	14,80	13,00	14,50	13,90	4	14,05			0,79	5,65	93,97
10	25	5.1	22	15,66	16,38	17,31	19,49	4	17,21			1,66	9,66	115,10
11	42	4.1	20	20,00	19,00	18,00	18,00	4	18,75			0,96	5,11	125,40
12	74x	5.5	22	19,19	16,97	21,51	19,38	4	19,26			1,86	9,63	128,83
13	64	5.1	22	20,49	21,54	20,49	18,24	4	20,19		*	1,39	6,89	135,03
14	13	5.3	22	20,72	19,32	23,22	20,35	4	20,90		*	1,65	7,92	139,79
15	50x	4.1	31	*26,30*	*33,30*	*36,50*	*35,30*	0	*32,85*	b	*	4,56	13,89	219,70
16	36x	5.5	31	*37,78*	*40,09*	*39,80*	*41,11*	0	*39,70*	b	*	1,39	3,51	265,48
17														
18														
19	08	6.3	32	<264	<263	<263	<265							
20	33a	5.1	21	<200	<200	<200	<200							
21	29x	3.3	31	<100	<100	<100	<100							
22	17x	5.5	32	<100	<100	<100	<100							
23	09	5.5	31	<40	<40	<40	<40							
24	78	5.5	31	<20	<20	<20	<20							
25	39x	5.5	35	<20	<20	<20	<20							
26	44x	4.1	32	<19	<19	<19	<19							
27	56	5.5	22	<10	<10	<10	<10							
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	N	Mean	SI	VI
all labs	56	**14,95**	**1,029**	**6,879**
30	% from the mean			

L	SR	VR
14	**3,588**	**23,999**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

Element: Cd **Sample: 4** Dimension: ng/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	11	5.1	22	27,00	27,00	26,00	24,00	4	26,00			1,41	5,44	88,29
2	38x	5.5	22	26,00	26,00	25,00	27,00	4	26,00			0,82	3,14	88,29
3	47x	4.1	31	29,00	25,00	29,00	22,00	4	26,25			3,40	12,97	89,13
4	39x	5.5	35	28,20	27,20	27,40	26,50	4	27,33			0,70	2,56	92,78
5	56	5.5	22	29,00	28,00	27,00	27,00	4	27,75			0,96	3,45	94,23
6	73	5	35	28,00	27,00	29,00	27,00	4	27,75			0,96	3,45	94,23
7	60	3.1	22	27,96	27,96	27,96	27,96	4	27,96			0,00	0,00	94,94
8	48x	4.1	35	28,69	28,07	27,93	27,63	4	28,08			0,45	1,59	95,35
9	37	5.5	35	29,00	27,00	27,00	30,00	4	28,25			1,50	5,31	95,93
10	26	5.5	35	29,00	30,00	29,00	31,00	4	29,75			0,96	3,22	101,02
11	25	5.1	22	28,53	28,64	30,45	32,63	4	30,06			1,92	6,40	102,08
12	44x	4.1	32	32,00	30,20	29,40	30,50	4	30,53			1,09	3,56	103,65
13	03	4.1	22	29,50	29,80	31,60	31,50	4	30,60			1,10	3,61	103,90
14	74x	5.5	22	30,67	28,78	30,23	34,14	4	30,96			2,27	7,34	105,11
15	42	4.1	20	35,00	34,00	30,00	30,00	4	32,25			2,63	8,15	109,51
16	64	5.1	22	35,01	37,16	31,78	33,39	4	34,34			2,30	6,70	116,59
17	13	5.3	22	32,45	37,40	37,10	40,28	4	36,81			3,24	8,80	124,98
18	50x	4.1	31	*46,70*	*60,50*	*41,10*	*53,30*	0	*50,40*	b	*	8,38	16,62	171,14
19	36x	5.5	31	*72,21*	*67,45*	*70,43*	*63,89*	0	*68,50*	b	*	3,64	5,32	232,58
20														
21														
22	08	6.3	32	<270	<271	<271	<271							
23	33a	5.1	21	<200	<200	<200	<200							
24	29x	3.3	31	<100	<100	<100	<100							
25	17x	5.5	32	<100	<100	<100	<100							
26	09	5.5	31	<40	<40	<40	<40							
27	78	5.5	31	<20	<20	<20	<20							
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	N	Mean	SI	VI
all labs	68	**29,45**	**1,512**	**5,135**
30	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
17	**2,968**	**10,077**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab. Code	Method code P	Method code D	Replications 1	2	3	4	n	Lab.mean		Lab.standard dev. Si	Vi	Recovery %
1	43x	1	15.2	48,70	48,60	48,70	48,80	4	48,70	*	0,08	0,17	94,80
2	64	1	13.2	48,68	50,16	49,40	49,44	4	49,42		0,60	1,22	96,20
3	04x	1	13.3	49,41	49,48	49,50	49,48	4	49,47		0,04	0,08	96,29
4	03x	1	15.2	49,80	49,84	49,64	49,87	4	49,79		0,10	0,21	96,92
5	50x	1	17.1	49,78	49,80	50,04	50,01	4	49,91		0,14	0,27	97,15
6	32	1	19	50,20	50,31	50,10	50,24	4	50,21		0,09	0,17	97,74
7	52	7	18.1	50,31	50,30	50,29	50,20	4	50,28		0,05	0,10	97,87
8	11	1	13.2	50,00	50,00	51,00	51,00	4	50,50		0,58	1,14	98,30
9	66	1	18.1	50,60	50,60	51,10	51,00	4	50,83		0,26	0,52	98,94
10	36x	3.32	82	51,18	50,83	50,99	51,11	4	51,03		0,15	0,30	99,33
11	39x	1	13.1	50,00	51,30	51,80	51,40	4	51,13		0,78	1,53	99,52
12	20x	1	15.2	51,18	51,13	51,12	51,09	4	51,13		0,04	0,07	99,53
13	02	9.1	18.2	51,51	51,20	51,03	51,03	4	51,19		0,23	0,44	99,65
14	29x	1	15.3	51,26	51,33	51,22	51,09	4	51,23		0,10	0,20	99,72
15	07x	1	18.1	51,40	51,40	51,40	51,20	4	51,35		0,10	0,19	99,96
16	37	1	15.4	51,42	51,29	51,34	51,39	4	51,36		0,06	0,11	99,98
17	09	1	13.2	50,31	51,35	52,20	51,67	4	51,38		0,80	1,55	100,02
18	23x	1	15.1	51,66	51,70	51,02	51,27	4	51,41		0,33	0,63	100,08
19	78	1	17.4	51,39	51,40	51,49	51,40	4	51,42		0,05	0,09	100,10
20	19x	6	15.1	51,50	51,40	51,36	51,50	4	51,44		0,07	0,14	100,13
21	17x	1	17.2	51,50	51,50	51,50	51,50	4	51,50		0,00	0,00	100,25
22	47x	1	15.4	51,56	51,52	51,58	51,52	4	51,55		0,03	0,06	100,34
23	12x	1	17.1	51,76	52,07	52,17	50,36	4	51,59		0,84	1,63	100,43
24	38x	1	15.3	51,63	51,55	51,76	51,64	4	51,65		0,09	0,17	100,53
25	56	1	17.2	51,72	51,71	51,80	51,73	4	51,74		0,04	0,08	100,72
26	48x	1	15.3	51,75	51,77	51,72	51,81	4	51,76		0,04	0,07	100,76
27	61x	1	17	52,30	51,70	51,50	51,80	4	51,83		0,34	0,66	100,88
28	15	1	17	51,70	51,90	51,80	51,90	4	51,83		0,10	0,18	100,88
29	49	1	15.4	51,91	51,82	51,82	51,87	4	51,86		0,04	0,08	100,94
30	77	1	17.1	51,76	51,88	51,80	52,14	4	51,90		0,17	0,33	101,02
31	42	0	0	51,90	52,40	52,40	52,40	4	52,28		0,25	0,48	101,76
32	13x	1	17.1	52,19	52,40	52,40	52,30	4	52,32		0,10	0,19	101,85
33	04a	1	15.2	52,06	52,62	52,69	52,49	4	52,47		0,28	0,54	102,13
34	74	1	17.2	52,56	52,48	52,57	52,45	4	52,52		0,06	0,11	102,23
35	25	1	17	52,70	52,40	52,60	52,70	4	52,60		0,14	0,27	102,39
36	44x	1	15.5	52,19	52,23	52,46	*53,83a*	3	52,29		0,15	0,28	101,80
37	46	1	17.2	52,59	52,59	52,62	53,11	4	52,73		0,26	0,48	102,64
38	08	1	17.1	53,40	53,40	53,30	53,20	4	53,33		0,10	0,18	103,80
39	01x	1	17.1	*53,89a*	53,35	53,26	53,35	3	53,32		0,05	0,10	103,79
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	N	Mean	SI	VI
all labs	154	**51,37**	**0,198**	**0,385**
5	% from the mean			

L	SR	VR
39	**1,033**	**2,010**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	43x	1	15.2	48,80	48,90	48,80	49,00	4	48,88	*	0,10	0,20	94,77
2	64	1	13.2	49,86	49,31	48,68	49,23	4	49,27		0,48	0,98	95,53
3	04x	1	13.3	49,46	49,62	49,53	49,57	4	49,55		0,07	0,14	96,07
4	03x	1	15.2	50,28	50,47	49,81	49,97	4	50,13		0,30	0,59	97,21
5	50x	1	17.1	50,34	50,19	50,18	49,88	4	50,15		0,19	0,38	97,23
6	11	1	13.2	51,00	50,00	50,00	50,00	4	50,25		0,50	1,00	97,43
7	52	7	18.1	50,53	50,54	50,60	50,50	4	50,54		0,04	0,08	98,00
8	32	1	19	50,93	51,13	50,58	50,40	4	50,76		0,33	0,65	98,42
9	36x	3.32	82	51,04	50,94	51,12	50,83	4	50,98		0,13	0,25	98,85
10	66	1	18.1	50,80	51,30	51,10	51,50	4	51,18		0,30	0,58	99,23
11	20x	1	15.2	51,23	51,22	51,22	51,20	4	51,22		0,01	0,02	99,31
12	37	1	15.4	51,24	51,39	51,30	51,33	4	51,32		0,06	0,12	99,50
13	29x	1	15.3	51,46	51,39	51,38	51,16	4	51,35		0,13	0,25	99,56
14	25	1	17	51,10	51,90	51,00	51,50	4	51,38		0,41	0,80	99,61
15	17x	1	17.2	51,40	51,40	51,40	51,40	4	51,40		0,00	0,00	99,66
16	09	1	13.2	51,44	51,23	51,58	51,62	4	51,47		0,18	0,34	99,79
17	02	9.1	18.2	51,56	51,53	51,43	51,48	4	51,50		0,06	0,11	99,86
18	07x	1	18.1	51,60	51,60	51,70	51,60	4	51,63		0,05	0,10	100,10
19	23x	1	15.1	51,45	50,86	52,00	52,28	4	51,65		0,63	1,22	100,14
20	38x	1	15.3	51,66	51,71	51,82	51,79	4	51,75		0,07	0,14	100,33
21	19x	6	15.1	51,80	51,78	51,71	51,88	4	51,79		0,07	0,14	100,42
22	78	1	17.4	52,02	51,50	51,63	52,17	4	51,83		0,32	0,61	100,50
23	47x	1	15.4	51,84	51,82	51,82	51,84	4	51,83		0,01	0,02	100,50
24	56	1	17.2	51,86	51,91	51,82	51,92	4	51,88		0,05	0,09	100,59
25	15	1	17	51,90	51,90	51,80	52,10	4	51,93		0,13	0,24	100,68
26	77	1	17.1	52,11	52,02	52,16	51,75	4	52,01		0,18	0,35	100,85
27	49	1	15.4	52,12	51,98	52,11	52,07	4	52,07		0,06	0,12	100,96
28	39x	1	13.1	51,40	52,30	52,00	52,60	4	52,08		0,51	0,98	100,97
29	48x	1	15.3	52,03	52,07	52,11	52,09	4	52,08		0,03	0,07	100,97
30	12x	1	17.1	51,99	52,30	52,32	52,28	4	52,22		0,16	0,30	101,26
31	61x	1	17	53,40	52,60	51,50	51,80	4	52,33		0,85	1,63	101,46
32	13x	1	17.1	52,51	52,61	53,03	52,61	4	52,69		0,23	0,44	102,16
33	74	1	17.2	52,90	52,87	52,89	52,75	4	52,85		0,07	0,13	102,48
34	04a	1	15.2	52,61	53,05	53,01	52,82	4	52,87		0,20	0,38	102,52
35	42	0	0	52,70	52,90	53,10	53,20	4	52,98		0,22	0,42	102,72
36	46	1	17.2	52,84	*53,73a*	52,76	52,80	3	52,80		0,04	0,08	102,38
37	01x	1	17.1	53,42	53,28	53,09	53,13	4	53,23		0,15	0,28	103,21
38	44x	1	15.5	52,63	52,29	52,97	*55,15a*	3	52,63		0,34	0,65	102,05
39	08	1	17.1	53,50	53,50	53,60	53,60	4	53,55		0,06	0,11	103,83
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	N	Mean	SI	VI
all labs	154	**51,57**	**0,198**	**0,384**
5	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
39	**1,067**	**2,069**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean	Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4			Si	Vi	%
1	43x	1	15.2	45,40	45,40	45,40	45,40	4	45,40	0,00	0,00	95,09
2	04x	1	13.3	45,58	45,71	45,66	45,71	4	45,67	0,06	0,13	95,65
3	64	1	13.2	45,78	46,26	45,74	45,26	4	45,76	0,41	0,89	95,85
4	03x	1	15.2	45,63	45,04	46,56	46,45	4	45,92	0,72	1,56	96,18
5	36x	3.32	82	45,86	46,02	45,93	46,34	4	46,04	0,21	0,46	96,43
6	50x	1	17.1	46,07	45,96	46,72	46,10	4	46,21	0,34	0,74	96,80
7	52	7	18.1	46,51	46,49	46,51	46,51	4	46,51	0,01	0,02	97,41
8	32	1	19	46,97	46,65	47,15	46,90	4	46,92	0,21	0,44	98,27
9	78	1	17.4	46,99	47,06	47,40	47,49	4	47,24	0,25	0,52	98,94
10	61x	1	17	*45,1a*	48,00	47,80	48,20	3	48,00	0,20	0,42	100,54
11	07x	1	18.1	47,30	47,30	47,30	47,40	4	47,33	0,05	0,11	99,13
12	17x	1	17.2	47,50	47,40	47,40	47,30	4	47,40	0,08	0,17	99,28
13	09	1	13.2	47,43	47,08	47,41	47,97	4	47,47	0,37	0,78	99,43
14	66	1	18.1	47,50	47,40	47,20	47,80	4	47,48	0,25	0,53	99,44
15	39x	1	13.1	48,40	47,60	47,30	46,90	4	47,55	0,64	1,34	99,60
16	20x	1	15.2	47,62	47,58	47,53	47,52	4	47,56	0,05	0,10	99,62
17	02	9.1	18.2	47,57	47,65	47,52	47,81	4	47,64	0,13	0,27	99,78
18	29x	1	15.3	47,67	47,67	47,72	47,53	4	47,65	0,08	0,17	99,80
19	23x	1	15.1	47,46	47,23	47,95	48,22	4	47,72	0,45	0,95	99,94
20	11	1	13.2	48,00	48,00	49,00	46,00	4	47,75	1,26	2,64	100,02
21	47x	1	15.4	47,87	47,88	47,88	47,90	4	47,88	0,01	0,03	100,29
22	49	1	15.4	47,95	47,92	47,95	47,87	4	47,92	0,04	0,08	100,38
23	37	1	15.4	47,93	47,96	47,92	47,95	4	47,94	0,02	0,04	100,41
24	56	1	17.2	48,03	47,97	48,06	47,99	4	48,01	0,04	0,08	100,57
25	38x	1	15.3	48,01	48,00	48,08	48,05	4	48,04	0,04	0,08	100,61
26	48x	1	15.3	48,22	48,16	48,13	48,18	4	48,17	0,04	0,08	100,90
27	25	1	17	48,60	48,20	48,30	47,80	4	48,23	0,33	0,69	101,01
28	77	1	17.1	48,21	48,33	48,47	48,33	4	48,34	0,11	0,22	101,24
29	12x	1	17.1	48,16	48,35	48,46	48,42	4	48,35	0,13	0,28	101,27
30	19x	6	15.1	48,67	48,06	48,64	48,04	4	48,35	0,35	0,72	101,28
31	13x	1	17.1	48,36	48,57	48,57	48,47	4	48,49	0,10	0,21	101,57
32	15	1	17	48,80	48,60	48,70	48,70	4	48,70	0,08	0,17	102,01
33	46	1	17.2	48,92	48,82	48,86	48,40	4	48,75	0,24	0,49	102,11
34	74	1	17.2	48,86	48,89	48,86	48,85	4	48,87	0,02	0,04	102,35
35	01x	1	17.1	49,41	48,95	49,02	48,95	4	49,08	0,22	0,45	102,81
36	04a	1	15.2	49,17	49,31	49,00	48,95	4	49,11	0,16	0,34	102,86
37	42	0	0	49,20	49,30	49,30	49,30	4	49,28	0,05	0,10	103,21
38	08	1	17.1	49,50	49,40	49,40	49,50	4	49,45	0,06	0,12	103,58
39	44x	1	15.5	48,87	48,97	50,72	51,01	4	49,89	1,13	2,26	104,50
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	N	Mean	SI	VI
all labs	155	**47,74**	**0,229**	**0,479**
5	% from the mean			
	L		SR	VR
	39		**1,081**	**2,265**

* = non tolerable mean because more than +/-

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008

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

No.	Lab.	Method code		Replications				n	Lab.mean		Lab.standard dev.		Recovery
	Code	P	D	1	2	3	4				Si	Vi	%
1	04x	1	13.3	44,11	*43,49a*	44,00	44,11	3	44,07	*	0,06	0,14	94,29
2	43x	1	15.2	44,30	44,30	44,40	44,30	4	44,33	*	0,05	0,11	94,83
3	36x	3.32	82	44,63	44,43	44,39	44,08	4	44,38	*	0,23	0,51	94,95
4	32	1	19	44,62	44,70	44,69	44,75	4	44,69		0,05	0,12	95,61
5	03x	1	15.2	44,47	45,01	44,96	44,94	4	44,85		0,25	0,56	95,94
6	52	7	18.1	45,09	45,32	45,09	44,91	4	45,10		0,17	0,37	96,49
7	50x	1	17.1	45,11	45,04	45,47	44,86	4	45,12		0,26	0,57	96,53
8	64	1	13.2	45,70	45,95	45,74	45,49	4	45,72		0,19	0,41	97,81
9	39x	1	13.1	45,90	44,70	46,80	45,70	4	45,78		0,86	1,88	97,93
10	09	1	13.2	46,04	46,91	46,11	45,96	4	46,26		0,44	0,95	98,96
11	49	1	15.4	46,52	46,21	46,33	46,42	4	46,37		0,13	0,28	99,20
12	61x	1	17	47,30	46,00	46,20	46,20	4	46,43		0,59	1,27	99,32
13	25	1	17	46,60	46,80	46,30	46,50	4	46,55		0,21	0,45	99,59
14	17x	1	17.2	46,70	46,70	46,60	46,60	4	46,65		0,06	0,12	99,80
15	66	1	18.1	47,10	46,50	46,60	46,40	4	46,65		0,31	0,67	99,80
16	29x	1	15.3	46,79	46,93	46,82	46,70	4	46,81		0,09	0,20	100,14
17	23x	1	15.1	46,60	46,14	47,39	47,47	4	46,90		0,64	1,37	100,34
18	37	1	15.4	46,93	46,85	46,89	46,94	4	46,90		0,04	0,09	100,34
19	38x	1	15.3	46,77	46,87	47,05	46,95	4	46,91		0,12	0,25	100,36
20	02	9.1	18.2	46,85	46,98	46,73	47,18	4	46,94		0,19	0,41	100,41
21	20x	1	15.2	47,03	46,99	47,01	46,97	4	47,00		0,03	0,05	100,55
22	11	1	13.2	48,00	47,00	46,00	47,00	4	47,00		0,82	1,74	100,55
23	78	1	17.4	47,86	46,78	46,72	46,77	4	47,03		0,55	1,17	100,62
24	19x	6	15.1	47,10	46,85	46,94	47,27	4	47,04		0,18	0,39	100,63
25	07x	1	18.1	47,30	47,30	47,20	47,20	4	47,25		0,06	0,12	101,08
26	47x	1	15.4	47,27	47,25	47,29	47,23	4	47,26		0,03	0,05	101,11
27	56	1	17.2	47,31	47,34	47,24	47,17	4	47,27		0,08	0,16	101,12
28	13x	1	17.1	47,46	47,56	47,46	47,46	4	47,49		0,05	0,11	101,59
29	48x	1	15.3	47,44	47,64	47,37	47,49	4	47,49		0,11	0,24	101,59
30	01x	1	17.1	47,59	47,74	47,31	47,49	4	47,53		0,18	0,38	101,69
31	77	1	17.1	47,38	47,60	47,59	47,60	4	47,54		0,11	0,23	101,71
32	46	1	17.2	47,64	47,66	47,49	47,63	4	47,61		0,08	0,16	101,84
33	12x	1	17.1	47,62	47,58	47,68	47,79	4	47,67		0,09	0,19	101,98
34	15	1	17	48,00	48,00	48,00	48,10	4	48,03		0,05	0,10	102,74
35	74	1	17.2	47,99	48,13	48,15	48,02	4	48,07		0,08	0,17	102,84
36	44x	1	15.5	47,53	47,65	47,90	*51,23a*	3	47,69		0,19	0,40	102,03
37	04a	1	15.2	48,62	48,79	48,38	48,64	4	48,61		0,17	0,35	103,99
38	42	0	0	48,80	49,00	48,60	48,60	4	48,75		0,19	0,39	104,29
39	08	1	17.1	48,90	48,90	48,70	48,90	4	48,85		0,10	0,20	104,51
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	N	Mean	SI	VI
all labs	154	**46,74**	**0,207**	**0,444**
5	% from the mean			

* = non tolerable mean because more than +/-

L	SR	VR
39	**1,210**	**2,589**

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Al	(µg/g)	1	32	5.7	31	173,58	172,47	171,63	172,2	172,47	0,819	0,475
			25	5.1	31	175,4	188,9	175,4	173,9	178,40	7,036	3,944
			23x	5.1	31	194,7	232,6	229,5	189,8	211,65	22,526	10,643
			02	5.3	31	219	229	203	196	211,75	14,997	7,083
			09	5.5	31	233,13	234,35	236,18	241,32	236,25	3,608	1,527
			77	5.1	31	243,08	245,43	234,67	240,99	241,04	4,619	1,916
			64	5.1	31	260,63	249,48	241,62	267,28	254,75	11,427	4,486
			76	5.5	31	265	263	253	251	258,00	7,024	2,722
			56	5.5	31	264,1	256,4	259,5	254,2	258,55	4,291	1,660
			78	5.5	31	272	271	286	286	278,75	8,382	3,007
			73	5	31	286	310	304	298	299,50	10,247	3,421
			29x	3.3	31	308,56	304,26	300,36	307,66	305,21	3,726	1,221
			50x	4.1	31	301	327	292	312	308,00	15,078	4,895
			43x	4.1	31	302	310	323	307	310,50	8,963	2,887
			18x	3.31	31	320,6	307,2	315,7	327,8	317,83	8,653	2,722
			48x	4.1	31	318,5	314	327,4	315,6	318,88	5,981	1,876
			49	4.1	31	320	325	319	327	322,75	3,862	1,197
			42	4.1	32	334	320	342	331	331,75	9,106	2,745
			47x	4.1	31	336	325	329	342	333,00	7,528	2,261
			20x	4.1	31	356,73	346,5	360,66	354,87	354,69	5,970	1,683
			52	3.1	31	371,84	380,66	369,39	368,78	372,67	5,490	1,473
			38a	9.1	42	404	410	400	394	402,00	6,733	1,675
Al	(µg/g)	2	32	5.7	31	50,96	52,8	50,85	51,35	51,49	0,899	1,747
			78	5.5	31	56,8	57,6	57,3	56,7	57,10	0,424	0,743
			23x	5.1	31	54,9	61	59	62,7	59,40	3,360	5,656
			64	5.1	31	58,1	58,41	60,78	62,88	60,04	2,239	3,728
			77	5.1	31	60,83	60,8	58,67	61,52	60,46	1,236	2,044
			76	5.5	31	62,1	61,9	60,6	62,9	61,88	0,954	1,541
			56	5.5	31	63,7	60,6	62,5	63,6	62,60	1,440	2,300

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Al	(µg/g)	2	09	5.5	31	62,88	59,61	62,45	65,97	62,73	2,603	4,150
			02	5.3	31	66	63	68	63	65,00	2,449	3,768
			48x	4.1	31	64,17	67,96	63,94	66,07	65,54	1,877	2,865
			20x	4.1	31	64,89	68,12	65,05	65,78	65,96	1,491	2,261
			29x	3.3	31	71,2	71,08	71,2	71,25	71,18	0,072	0,102
			47x	4.1	31	70,9	72,4	71,4	70,1	71,20	0,963	1,352
			73	5	31	73	69	71,2	71,6	71,20	1,657	2,328
			43x	4.1	31	71	69	70	76	71,50	3,109	4,348
			25	5.1	31	71,5	73,5	74,3	73,4	73,18	1,187	1,622
			38a	9.1	42	73,1	72,8	75	76	74,23	1,533	2,065
			49	4.1	31	74,4	74,9	74,2	75,2	74,68	0,457	0,612
			18x	3.31	31	81	77,2	78,1	72,4	77,18	3,572	4,629
			50x	4.1	31	73,5	78,8	87,8	78,2	79,58	5,973	7,507
			52	3.1	31	81,29	81,74	83,32	80,62	81,74	1,148	1,404
			42	4.1	32	84,7	81,7	77,4	86,4	82,55	3,945	4,779
Al	(µg/g)	3	64	5.1	31	38,99	43,08	38,24	38,19	39,63	2,332	5,886
			32	5.7	31	48,49	48,33	48,45	47,87	48,29	0,285	0,590
			23x	5.1	31	60	49	49,8	48	51,70	5,582	10,797
			78	5.5	31	53,5	52,3	51,7	54,2	52,93	1,132	2,140
			09	5.5	31	54,35	56,31	55,97	56,08	55,68	0,896	1,610
			25	5.1	31	55	57,3	57,3	58,9	57,13	1,605	2,810
			20x	4.1	31	57,92	60,11	57,9	56,68	58,15	1,428	2,456
			02	5.3	31	60	64	58	54	59,00	4,163	7,056
			77	5.1	31	63,95	58,82	65,52	61,05	62,34	2,987	4,791
			48x	4.1	31	63,81	61,85	62,05	63,48	62,80	0,991	1,578
			76	5.5	31	67,6	65,7	63,3	63,8	65,10	1,961	3,013
			56	5.5	31	70,6	75,2	74	70,9	72,68	2,279	3,136
			47x	4.1	31	73,4	73,7	72,8	74	73,48	0,512	0,697
			29x	3.3	31	73,47	71,73	73,85	75,07	73,53	1,381	1,878

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Al	(µg/g)	3	73	5	31	71,5	74	72,8	76,4	73,68	2,084	2,828
			18x	3.31	31	72,5	79	72,2	75,5	74,80	3,172	4,240
			43x	4.1	31	74	78	77	75	76,00	1,826	2,402
			52	3.1	31	79,75	79,11	79,36	79,09	79,33	0,307	0,387
			49	4.1	31	93,3	86,3	95,8	89,7	91,28	4,156	4,553
			42	4.1	32	96,5	89,6	89,3	90,4	91,45	3,399	3,716
			50x	4.1	31	94	90,1	93	94,3	92,85	1,916	2,063
			38a	9.1	42	100	96,6	93,9	94,4	96,23	2,777	2,885
Al	(µg/g)	4	20x	4.1	31	17,84	17,41	16,09	19,19	17,63	1,278	7,246
			48x	4.1	31	20,57	23,11	24,75	23,43	22,97	1,747	7,609
			32	5.7	31	24,08	24,33	24,33	24,25	24,25	0,118	0,486
			78	5.5	31	26,5	25,3	26,6	26,8	26,30	0,678	2,579
			23x	5.1	31	32,1	27,5	28,2	23,3	27,78	3,605	12,979
			77	5.1	31	27,16	28,38	32,2	26,42	28,54	2,570	9,006
			09	5.5	31	27,75	29,14	29,48	29,32	28,92	0,794	2,745
			02	5.3	31	29	28	31	31	29,75	1,500	5,042
			29x	3.3	31	31,8	30,95	31,94	31,74	31,61	0,446	1,412
			76	5.5	31	32,5	32,8	30,1	33,7	32,28	1,537	4,762
			73	5	31	35,2	34,2	36,6	35,5	35,38	0,988	2,792
			56	5.5	31	35,2	37,4	37,4	36,3	36,58	1,053	2,879
			25	5.1	31	33,8	35,3	38,6	38,9	36,65	2,504	6,832
			43x	4.1	31	40	41	41	39	40,25	0,957	2,379
			52	3.1	31	45,69	40,38	39,4	36,13	40,40	3,967	9,820
			47x	4.1	31	41,1	41,5	41,5	41,1	41,30	0,231	0,559
			49	4.1	31	42,2	48,9	43,1	47,6	45,45	3,297	7,254
			18x	3.31	31	45,5	44,7	53,5	46,7	47,60	4,018	8,442
			42	4.1	32	47	50	45	55	49,25	4,349	8,831
			50x	4.1	31	54,8	56,8	53,9	58,5	56,00	2,061	3,680
			38a	9.1	42	73,8	68,3	66,7	71,4	70,05	3,171	4,527

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Al	(µg/g)	4	64	5.1	31	74,96	77,13	75,95	74,97	75,75	1,029	1,358
As	(µg/g)	1	48x	4.1	35	0,0764	0,0726	0,0804	0,0754	0,08	0,003	4,238
As	(µg/g)	2	48x	4.1	35	0,0263	0,025	0,028	0,026	0,03	0,001	4,738
As	(µg/g)	3	48x	4.1	35	0,0389	0,0381	0,0412	0,0382	0,04	0,001	3,694
As	(µg/g)	4	48x	4.1	35	0,0843	0,0877	0,0887	0,0858	0,09	0,002	2,265
Ba	(µg/g)	1	02	5.3	31	31,9	31,4	31	31	31,33	0,427	1,364
			48x	4.1	35	34,59	33,92	34,37	35,06	34,49	0,474	1,375
Ba	(µg/g)	2	02	5.3	31	9,6	9,6	9,2	9,5	9,48	0,189	1,998
			48x	4.1	35	11	10,91	11	10,92	10,96	0,049	0,449
Ba	(µg/g)	3	02	5.3	31	8,5	8,4	8,7	8,7	8,58	0,150	1,749
			48x	4.1	35	10,45	10,47	10,44	10,47	10,46	0,015	0,143
Ba	(µg/g)	4	02	5.3	31	12,7	12,8	12,6	12,9	12,75	0,129	1,013
			48x	4.1	35	14,75	14,07	14,94	14,64	14,60	0,374	2,565
Br	(µg/g)	1	38a	9.1	42	<1	<1	<1	<1			
Br	(µg/g)	2	38a	9.1	42	<1	<1	<1	<1			
Br	(µg/g)	3	38a	9.1	42	5,8	5,7	5,6	5,3	5,60	0,216	3,858
Br	(µg/g)	4	38a	9.1	42	8,6	8,6	8,9	8,7	8,70	0,141	1,626
Cl	(µg/g)	1	04a	9.1	42	530	500	480	490	500,00	21,602	4,320
			38a	9.1	42	520	510	510	500	510,00	8,165	1,601
			04	9.1	41	515	509	521	536	520,25	11,587	2,227
			03	2.8	82	580	580	570	570	575,00	5,774	1,004
Cl	(µg/g)	2	04a	9.1	42	670	680	640	640	657,50	20,616	3,135
			38a	9.1	42	680	670	680	680	677,50	5,000	0,738
			04	9.1	41	687	697	694	694	693,00	4,243	0,612
			03	2.8	82	700	690	700	700	697,50	5,000	0,717
Cl	(µg/g)	3	04a	9.1	42	2290	2260	2180	2190	2230,00	53,541	2,401
			04	9.1	41	2450	2500	2420	2450	2455,00	33,166	1,351
			38a	9.1	42	2540	2530	2530	2530	2532,50	5,000	0,197

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Cl	(µg/g)	3	03	2.8	82	2590	2610	2660	2660	2630,00	35,590	1,353
Cl	(µg/g)	4	04a	9.1	42	1700	1660	1590	1620	1642,50	47,871	2,915
			38a	9.1	42	1780	1820	1790	1840	1807,50	27,538	1,524
			04	9.1	41	1840	1820	1810	1770	1810,00	29,439	1,626
			03	2.8	82	2030	2040	2020	1950	2010,00	40,825	2,031
Cr	(µg/g)	1	25	5.1	22	2,076	1,948	1,969	1,955	1,99	0,060	3,018
			09	5.5	31	2,122	2,167	2,287	2,25	2,21	0,075	3,419
			04	9.1	41	2,8	2,6	3,2	2,7	2,83	0,263	9,310
			50x	4.1	31	3,33	3,48	3,42	3,32	3,39	0,076	2,253
			56	5.5	31	3,43	3,4	3,43	3,46	3,43	0,024	0,714
			78	5.5	31	3,6	4,4	3,4	3,4	3,70	0,476	12,867
			48x	4.1	35	3,653	3,938	3,751	3,583	3,73	0,154	4,130
			18x	3.31	31	3,98	3,97	3,58	3,64	3,79	0,212	5,595
			44x	4.1	32	3,9	3,8	3,8	4	3,88	0,096	2,471
			47x	4.1	31	3,86	3,93	3,87	3,91	3,89	0,033	0,849
			42	3.1	22	4,052	4,264	3,887	4,046	4,06	0,155	3,808
Cr	(µg/g)	2	25	5.1	22	0,924	0,909	0,977	0,989	0,95	0,039	4,126
			09	5.5	31	1,824	1,531	1,547	1,854	1,69	0,174	10,288
			04	9.1	41	2,3	2,4	2,2	2,2	2,28	0,096	4,208
			56	5.5	31	3,05	2,93	2,89	3,38	3,06	0,222	7,259
			78	5.5	31	3,4	3,1	3	3	3,13	0,189	6,058
			50x	4.1	31	3,17	3,05	3,5	3,18	3,23	0,193	5,973
			18x	3.31	31	3,2	3,63	3,58	3,39	3,45	0,196	5,685
			44x	4.1	32	3,4	3,6	3,6	3,5	3,53	0,096	2,716
			42	3.1	22	3,545	3,661	3,518	3,587	3,58	0,062	1,742
			47x	4.1	31	3,69	3,68	3,61	3,61	3,65	0,043	1,192
			48x	4.1	35	3,716	3,837	3,723	3,797	3,77	0,059	1,557
Cr	(µg/g)	3	04	9.1	41	<1,5	<1,5	<1,5	<1,5			

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
			56	5.5	31	<1	<1	<1	<1			
Cr	(µg/g)	3	09	5.5	31	0,193	0,159	0,204	0,168	0,18	0,021	11,615
			50x	4.1	31	0,29	0,28	0,36	0,31	0,31	0,036	11,481
			25	5.1	22	0,286	0,309	0,425	0,279	0,32	0,068	20,955
			47x	4.1	31	0,34	0,349	0,364	0,335	0,35	0,013	3,668
			44x	4.1	32	0,42	0,41	0,4	0,49	0,43	0,041	9,494
			48x	4.1	35	0,5073	0,5231	0,5069	0,5146	0,51	0,008	1,486
			42	3.1	22	0,54	0,431	0,585	0,519	0,52	0,065	12,464
			78	5.5	31	0,52	0,53	0,64	0,73	0,61	0,099	16,446
			18x	3.31	31	0,72	1,14	0,49	0,21	0,64	0,393	61,436
Cr	(µg/g)	4	04	9.1	41	<1,5	<1,5	<1,5	<1,5			
			56	5.5	31	<1	<1	<1	<1			
			09	5.5	31	0,31	0,294	0,301	0,291	0,30	0,008	2,825
			25	5.1	22	0,475	0,459	0,429	0,374	0,43	0,044	10,239
			47x	4.1	31	0,66	0,644	0,629	0,461	0,60	0,093	15,461
			48x	4.1	35	0,7981	0,7198	0,6396	0,718	0,72	0,065	9,002
			78	5.5	31	0,75	0,71	0,83	0,6	0,72	0,096	13,246
			50x	4.1	31	0,77	0,65	0,72	0,85	0,75	0,084	11,266
			44x	4.1	32	0,79	0,75	0,73	1,12	0,85	0,183	21,637
			42	3.1	22	0,946	0,779	0,93	0,885	0,89	0,075	8,501
			18x	3.31	31	0,86	0,97	1,45	0,78	1,02	0,300	29,584
Co	(µg/g)	1	78	5.5	31	0,76	0,76	0,74	0,71	0,74	0,024	3,182
			50	4.1	31	0,772	0,753	0,793	0,819	0,78	0,028	3,615
			44x	4.1	32	0,86	0,85	0,84	0,84	0,85	0,010	1,130
			48x	4.1	35	0,8576	0,8482	0,8335	0,8509	0,85	0,010	1,199
			47x	4.1	31	0,934	0,939	0,932	0,921	0,93	0,008	0,815
Co	(µg/g)	2	78	5.5	31	0,22	0,2	0,21	0,21	0,21	0,008	3,888
			44x	4.1	32	0,22	0,23	0,23	0,23	0,23	0,005	2,198
			50	4.1	31	0,222	0,2	0,249	0,259	0,23	0,027	11,490

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
			47x	4.1	31	0,239	0,244	0,244	0,238	0,24	0,003	1,327
Co	(µg/g)	2	48x	4.1	35	0,2551	0,2484	0,2519	0,2537	0,25	0,003	1,148
Co	(µg/g)	3	47x	4.1	31	<,5	<,5	<,5	<,5			
			44x	4.1	32	<,1	<,1	<,1	<,1			
			50	4.1	31	<,05	<,05	0,055	<,05			
			78	5.5	31	0,038	0,05	0,034	0,037	0,04	0,007	17,715
			48x	4.1	35	0,0605	0,0591	0,0609	0,0603	0,06	0,001	1,287
Co	(µg/g)	4	47x	4.1	31	<,5	<,5	<,5	<,5			
			44x	4.1	32	<,1	<,1	<,1	<,1			
			50	4.1	31	<,05	<,05	<,05	<,05			
			78	5.5	31	0,045	0,044	0,045	0,045	0,04	0,000	1,117
			48x	4.1	35	0,065	0,0676	0,066	0,066	0,07	0,001	1,626
F	(µg/g)	1	03	7.1	72.2	5,2	4,9	5,4	4,6	5,03	0,350	6,965
F	(µg/g)	2	03	7.1	72.2	3,1	2,9	2,8	2,3	2,78	0,340	12,265
F	(µg/g)	3	03	7.1	72.2	3,8	3,5	3,6	3,9	3,70	0,183	4,934
F	(µg/g)	4	03	7.1	72.2	3	3,5	4,4	3,5	3,60	0,583	16,197
Hg	(ng/g)	1	03	1	25.1	18,8	18,3	18,3	18,5	18,48	0,236	1,279
Hg	(ng/g)	2	03	1	25.1	13,5	13,2	13,4	13,4	13,38	0,126	0,941
Hg	(ng/g)	3	03	1	25.1	40,8	40,6	39,4	40,5	40,33	0,629	1,560
Hg	(ng/g)	4	03	1	25.1	15,4	15	15,5	15,9	15,45	0,370	2,393
Mo	(µg/g)	1	50x	4.1	31	0,242	0,236	0,246	0,23	0,24	0,007	2,935
			48x	4.1	35	0,3173	0,3005	0,3195	0,303	0,31	0,010	3,131
Mo	(µg/g)	2	50x	4.1	31	0,336	0,343	0,384	0,355	0,35	0,021	5,973
			48x	4.1	35	0,4588	0,4712	0,4659	0,4558	0,46	0,007	1,502
Mo	(µg/g)	3	50x	4.1	31	0,171	0,168	0,176	0,152	0,17	0,010	6,220
			48x	4.1	35	0,1709	0,171	0,1736	0,1727	0,17	0,001	0,769
Mo	(µg/g)	4	50x	4.1	31	0,315	0,313	0,365	0,328	0,33	0,024	7,298
			48x	4.1	35	0,4108	0,4234	0,398	0,4165	0,41	0,011	2,611

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Ni	(µg/g)	1	25	5.1	22	3,1	2,972	3,163	3,912	3,29	0,424	12,911
			78	5.5	31	6,2	6,2	6	5,9	6,08	0,150	2,469
			50	4.1	31	6,11	6	6,29	5,91	6,08	0,164	2,692
			02	5.3	31	6,3	6,3	6	5,9	6,13	0,206	3,366
			64	5.1	31	6,07	6,23	6,6	6,29	6,30	0,222	3,525
			42	3.1	22	6,56	6,434	6,189	6,27	6,36	0,166	2,610
			04	9.1	41	5,9	6,8	6,3	6,6	6,40	0,392	6,118
			66	5.5	31	6,63	6,68	6,67	6,5	6,62	0,083	1,252
			56	5.5	31	6,68	6,67	6,76	6,73	6,71	0,042	0,632
			09	5.5	31	6,576	6,821	6,71	6,806	6,73	0,113	1,676
			44x	5.1	31	6,7	6,7	6,7	6,9	6,75	0,100	1,481
			47x	4.1	31	7,24	7,2	7,17	7,22	7,21	0,030	0,414
			18x	3.31	31	8,16	7,76	7,13	7,1	7,54	0,515	6,827
			48x	4.1	35	7,582	7,654	7,597	7,438	7,57	0,092	1,214
Ni	(µg/g)	2	25	5.1	22	2,131	1,93	2,112	1,942	2,03	0,107	5,298
			02	5.3	31	3	2,8	3	3,1	2,98	0,126	4,230
			78	5.5	31	3,8	3,6	3,4	3,5	3,58	0,171	4,777
			09	5.5	31	3,844	3,738	3,837	3,597	3,75	0,115	3,072
			66	5.5	31	3,76	3,92	3,89	3,63	3,80	0,133	3,498
			64	5.1	31	3,73	3,63	4,26	3,9	3,88	0,277	7,133
			42	3.1	22	4,273	4,068	4,022	4,121	4,12	0,109	2,648
			56	5.5	31	4,04	4,14	4,04	4,29	4,13	0,118	2,862
			50	4.1	31	4,07	3,92	4,48	4,11	4,15	0,238	5,738
			44x	5.1	31	4,3	4,4	4,4	4,3	4,35	0,058	1,327
			18x	3.31	31	4,31	4,66	4,63	4,33	4,48	0,188	4,199
			47x	4.1	31	4,6	4,63	4,63	4,62	4,62	0,014	0,306
			04	9.1	41	4,6	4,7	4,7	5,3	4,83	0,320	6,635
			48x	4.1	35	5,08	5,27	5,03	5,243	5,16	0,119	2,301

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Ni	(µg/g)	3	25	5.1	22	1,567	1,832	1,602	2,15	1,79	0,269	15,024
			64	5.1	31	2,13	1,94	2,33	2,1	2,13	0,160	7,534
			18x	3.31	31	2,08	2,24	2,76	2,72	2,45	0,342	13,941
			02	5.3	31	2,4	2,6	2,7	2,5	2,55	0,129	5,063
			50	4.1	31	2,64	2,43	2,72	2,6	2,60	0,122	4,709
			78	5.5	31	2,6	2,62	2,69	2,74	2,66	0,064	2,422
			42	3.1	22	3,107	2,675	2,606	2,68	2,77	0,229	8,282
			44x	5.1	31	2,8	2,9	2,9	2,7	2,83	0,096	3,389
			04	9.1	41	2,5	2,9	3,3	2,6	2,83	0,359	12,722
			66	5.5	31	2,84	2,82	2,81	2,87	2,84	0,026	0,933
			56	5.5	31	2,86	2,84	2,88	2,86	2,86	0,016	0,571
			47x	4.1	31	3,07	3,09	3,05	3,09	3,08	0,019	0,623
			09	5.5	31	3,155	3,47	3,312	3,143	3,27	0,154	4,708
			48x	4.1	35	3,48	3,598	3,56	3,532	3,54	0,050	1,402
Ni	(µg/g)	4	25	5.1	22	2,224	2,736	2,24	1,99	2,30	0,314	13,661
			64	5.1	31	2,57	2,71	2,9	2,68	2,72	0,137	5,055
			78	5.5	31	3,1	3,1	3,1	2,9	3,05	0,100	3,279
			42	3.1	22	3,498	2,945	3,168	3,117	3,18	0,231	7,268
			02	5.3	31	3,2	3,3	3,2	3,2	3,23	0,050	1,550
			50	4.1	31	4,05	2,99	2,96	3,17	3,29	0,513	15,594
			04	9.1	41	3,1	2,9	4,4	2,9	3,33	0,723	21,740
			18x	3.31	31	3,46	3,17	3,57	3,38	3,40	0,169	4,978
			56	5.5	31	3,42	3,45	3,43	3,44	3,44	0,013	0,376
			44x	5.1	31	3,4	3,5	3,3	3,6	3,45	0,129	3,742
			09	5.5	31	3,578	3,548	3,641	3,509	3,57	0,056	1,561
			66	5.5	31	4,31	3,55	3,31	3,28	3,61	0,480	13,299
			47x	4.1	31	3,77	3,75	3,78	3,76	3,77	0,013	0,343
			48x	4.1	35	4,139	3,915	4,12	3,999	4,04	0,106	2,612

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Rb	(µg/g)	1	04	9.1	41	15,2	15,6	15,2	15,5	15,38	0,206	1,341
			48x	4.1	35	15,39	15,62	15,55	15,77	15,58	0,158	1,012
Rb	(µg/g)	2	04	9.1	41	26,7	26,9	26,5	26,9	26,75	0,191	0,716
			48x	4.1	35	28,15	27,98	27,88	27,83	27,96	0,141	0,505
Rb	(µg/g)	3	04	9.1	41	4,6	4,7	4,9	4,6	4,70	0,141	3,009
			48x	4.1	35	5,008	5,062	5,065	5,003	5,03	0,034	0,667
Rb	(µg/g)	4	04	9.1	41	1,9	1,9	2,2	1,9	1,98	0,150	7,595
			48x	4.1	35	2,036	2,052	2,07	2,07	2,06	0,016	0,796
Si	(µg/g)	1	04a	9.1	42	2400	2560	2260	2160	2345,00	173,877	7,415
			38a	9.1	42	2440	2420	2410	2460	2432,50	22,174	0,912
Si	(µg/g)	2	04a	9.1	42	2930	2600	2810	2560	2725,00	175,214	6,430
			38a	9.1	42	3100	3110	3120	3110	3110,00	8,165	0,263
Si	(µg/g)	3	04a	9.1	42	1250	1210	1070	1060	1147,50	96,738	8,430
			38a	9.1	42	1260	1240	1270	1260	1257,50	12,583	1,001
Si	(µg/g)	4	04a	9.1	42	1570	1420	1330	1310	1407,50	118,427	8,414
			38a	9.1	42	2070	1980	2100	2010	2040,00	54,772	2,685
Na	(µg/g)	1	38a	9.1	42	<35	<35	<35	<35			
			44x	4.1	31	<16	<16	<16	<16			
			02	5.3	31	<11,1	<11,1	<11,1	<11,1			
			76	5.5	31	<5,38	<5,38	<5,38	<5,38			
			66	5.5	31	<5,2	<5,2	<5,2	<5,2			
			43x	4.1	31	<40	48	41	<40	44,50	4,950	11,123
			50x	4.1	31	3,5	3,9	4,3	4,7	4,10	0,516	12,595
			12	4.1	31	4,69	4,71	3,51	4,77	4,42	0,608	13,747
			77	5.1	31	7,18	3,93	8,65	7,98	6,94	2,092	30,159
			47x	4.1	31	8,9	9,19	8,57	8,63	8,82	0,284	3,218
			23x	5.1	31	10,03	11,74	15,12	12,1	12,25	2,117	17,287
			73	5	31	13,1	15,9	16,2	11,1	14,08	2,425	17,232

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Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Na	(µg/g)	1	20x	4.1	31	13,33	14,08	15,47	13,64	14,13	0,945	6,687
			42	4.1	31	13,1	13,1	13,7	17	14,23	1,871	13,156
			09	5.5	31	17,067	14,19	16,197	16,567	16,01	1,262	7,882
			78	5.5	31	27,6	30,6	31,4	30,1	29,93	1,640	5,480
			25	4.1	31	35,9	30,5	23,5	39,9	32,45	7,102	21,886
			79	3.3	31	90,6	73,8	75,9	81,2	80,38	7,494	9,324
			49	4.1	31	80	83	85	86	83,50	2,646	3,169
Na	(µg/g)	2	43x	4.1	31	<40	<40	<40	<40			
			38a	9.1	42	<35	<35	<35	<35			
			44x	4.1	31	<16	<16	<16	<16			
			02	5.3	31	<11,1	<11,1	<11,1	<11,1			
			76	5.5	31	<5,38	<5,38	<5,38	<5,38			
			50x	4.1	31	2,8	3,1	3,6	3,8	3,33	0,457	13,755
			12	4.1	31	4,22	3,98	3,91	3,46	3,89	0,317	8,155
			77	5.1	31	3,72	4,36	5,4	4,46	4,49	0,693	15,441
			66	5.5	31	5,48	5,68	5,31	6,82	5,82	0,682	11,713
			42	4.1	31	6,1	7,8	5,3	5,3	6,13	1,179	19,243
			47x	4.1	31	6,24	6,08	5,94	6,67	6,23	0,316	5,076
			23x	5.1	31	10,81	12,57	12,16	10,23	11,44	1,104	9,648
			73	5	31	12,6	12	16,8	13,9	13,83	2,136	15,450
			20x	4.1	31	13,48	14,32	14,67	13,49	13,99	0,600	4,292
			09	5.5	31	20,583	17,025	19,824	18,65	19,02	1,550	8,148
			78	5.5	31	26	23,3	27,1	25,7	25,53	1,601	6,271
			25	4.1	31	27,5	33,2	33,3	27,3	30,33	3,379	11,142
			79	3.3	31	64,7	73,2	74,3	74,3	71,63	4,646	6,486
			49	4.1	31	85	85	79	89	84,50	4,123	4,879
Na	(µg/g)	3	44x	4.1	31	<16	<16	<16	<16			
			76	5.5	31	<5,38	<5,38	<5,38	<5,38			
			50x	4.1	31	3,8	3,2	3,9	4,6	3,88	0,574	14,806

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Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Na	(µg/g)	3	66	5.5	31	11,7	11,4	10,8	12,5	11,60	0,707	6,096
			12	4.1	31	12,91	11,98	11,27	10,93	11,77	0,875	7,436
			47x	4.1	31	11,9	12,3	12,2	12,1	12,13	0,171	1,409
			77	5.1	31	13,38	13,92	10,35	12,54	12,55	1,571	12,522
			02	5.3	31	11,9	13,6	14,6	14,3	13,60	1,208	8,885
			42	4.1	31	15,4	20,2	12,5	13,7	15,45	3,383	21,895
			23x	5.1	31	14,58	19,92	16,41	20,21	17,78	2,745	15,437
			09	5.5	31	23,033	23,249	20,902	23,233	22,60	1,139	5,039
			73	5	31	20,6	22,8	23,3	26,6	23,33	2,478	10,626
			20x	4.1	31	27,39	28,87	28,54	28,38	28,30	0,637	2,251
			38a	9.1	42	32,8	41,1	30,2	35,1	34,80	4,653	13,370
			78	5.5	31	41,4	36,8	40,9	39,9	39,75	2,063	5,190
			25	4.1	31	37	36,8	46,6	45,2	41,40	5,228	12,628
			43x	4.1	31	42	41	50	43	44,00	4,082	9,278
			79	3.3	31	81,3	79,2	81,3	79,2	80,25	1,212	1,511
			49	4.1	31	89	94	100	90	93,25	4,992	5,353
Na	(µg/g)	4	76	5.5	31	36	35,2	35,6	35,6	35,60	0,327	0,917
			50x	4.1	31	46,46	45,68	42,81	43,42	44,59	1,753	3,932
			77	5.1	31	46,1	46,18	43,8	43,68	44,94	1,387	3,086
			66	5.5	31	44,5	44,4	44,9	46,8	45,15	1,121	2,483
			44x	4.1	31	50,5	46,9	45,7	47,3	47,60	2,049	4,305
			02	5.3	31	51,5	47,9	46,3	47,4	48,28	2,251	4,664
			47x	4.1	31	48,6	48,4	49,2	48,5	48,68	0,359	0,738
			09	5.5	31	48,338	51,321	51,156	48,686	49,88	1,582	3,172
			42	4.1	31	51,6	51,1	55	53,3	52,75	1,771	3,357
			23x	5.1	31	54,14	53,36	57,64	54,49	54,91	1,882	3,427
			73	5	31	56,2	53,1	56,3	58,2	55,95	2,111	3,773
			12	4.1	31	59,11	60,14	59,07	61,77	60,02	1,266	2,109
			20x	4.1	31	70,6	71,42	71,95	71,71	71,42	0,588	0,823

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Na	(µg/g)	4	38a	9.1	42	69,7	77,1	73,7	71,3	72,95	3,218	4,411
			25	4.1	31	83,9	91,3	92,9	74,3	85,60	8,492	9,921
			43x	4.1	31	82	88	88	100	89,50	7,550	8,436
			78	5.5	31	99,5	93,2	96	102,6	97,83	4,096	4,187
			79	3.3	31	132,3	150,6	132,3	120,5	133,93	12,431	9,282
			49	4.1	31	130	134	137	140	135,25	4,272	3,159
Sr	(µg/g)	1	38a	9.1	42	15,4	15	15	15,1	15,13	0,189	1,252
			02	5.3	31	16,1	15,8	15,8	15,7	15,85	0,173	1,093
			48x	4.1	35	15,91	16,18	15,95	15,8	15,96	0,160	1,001
			04	9.1	41	16	16,4	16,5	16,2	16,28	0,222	1,362
Sr	(µg/g)	2	02	5.3	31	3,7	3,7	3,6	3,6	3,65	0,058	1,582
			04	9.1	41	3,9	3,6	3,9	4,1	3,88	0,206	5,320
			38a	9.1	42	4,07	4,05	3,97	3,76	3,96	0,142	3,577
			48x	4.1	35	4,163	4,108	4,129	4,136	4,13	0,023	0,549
Sr	(µg/g)	3	38a	9.1	42	54,9	54,6	55	55	54,88	0,189	0,345
			02	5.3	31	58,3	58,3	60,8	59,1	59,13	1,179	1,993
			04	9.1	41	59,4	60,7	61,3	60,8	60,55	0,810	1,338
			48x	4.1	35	61,06	61,99	60,86	61,88	61,45	0,571	0,929
Sr	(µg/g)	4	38a	9.1	42	40,5	40,1	39,6	39,4	39,90	0,497	1,245
			04	9.1	41	43,6	44,1	44	44,1	43,95	0,238	0,542
			02	5.3	31	44,5	43,6	44,8	45,7	44,65	0,866	1,940
			48x	4.1	35	46,9	46,87	45,74	45,71	46,31	0,670	1,447
Ti	(µg/g)	1	48x	4.1	35	17	15,76	16,83	16,66	16,56	0,553	3,337
Ti	(µg/g)	2	48x	4.1	35	1,864	1,955	1,932	1,927	1,92	0,039	2,030
Ti	(µg/g)	3	48x	4.1	35	4,293	4,335	4,315	4,292	4,31	0,020	0,475
Ti	(µg/g)	4	48x	4.1	35	3,381	3,736	3,364	3,581	3,52	0,177	5,034
V	(µg/g)	1	64	5.1	31	0,524	0,624	0,576	0,575	0,57	0,041	7,105
			48x	4.1	35	0,6302	0,6095	0,6331	0,617	0,62	0,011	1,786

10th Needle/Leaf Interlaboratory Comparison Test 2007/2008 - additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
V	(µg/g)	2	48x	4.1	35	0,0914	0,0923	0,091	0,0918	0,09	0,001	0,607
			64	5.1	31	0,368	0,325	0,401	0,378	0,37	0,032	8,647
V	(µg/g)	3	64	5.1	31	0,123	0,125	0,15	0,133	0,13	0,012	9,254
			48x	4.1	35	0,1402	0,1395	0,1425	0,1384	0,14	0,002	1,237
V	(µg/g)	4	64	5.1	31	0,108	0,108	0,108	0,108	0,11	0,000	0,000
			48x	4.1	35	0,1031	0,1056	0,1118	0,1128	0,11	0,005	4,357