ISBN 3-901347-52-6

CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION
INTERNATIONAL CO-OPERATIVE PROGRAMME ON ASSESSMENT AND MONITORING OF AIR POLLUTION EFFECTS ON FORESTS
and
EUROPEAN UNION SCHEME
ON THE PROTECTION OF FORESTS AGAINST ATMOSPHERIC POLLUTION

United Nations
Economic Commission
for Europe

European Commission

7th Needle/Leaf Interlaboratory Comparison Test 2004/2005

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Forest Foliar Co-ordinating Centre
Seckendorff-Gudent-Weg 8
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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 two European programs 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 expert panels in Vienna/Austria in 1997. The expert panel in Vienna 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 fixed 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 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 PCC. Consequently, the 7th Interlaboratory Comparison Test was started in 2004.

2 TASK, MATERIAL, PARTICIPANTS AND EVALUATION

2.1 Task

The Forest Foliar Coordinating Centre established the following timetable:

- Informing the participating labs (May 2004)
- Registration of 43 participants via internet (30th June 2004)
- Submission of the ring test samples (End of August 2004)
- Input of the results from the labs (October-December 2004)
- Deadline of data input (31th December 2004)
- Evaluation according to DIN 38402/42 (January/February 2005)
- Final Report (February 2005)

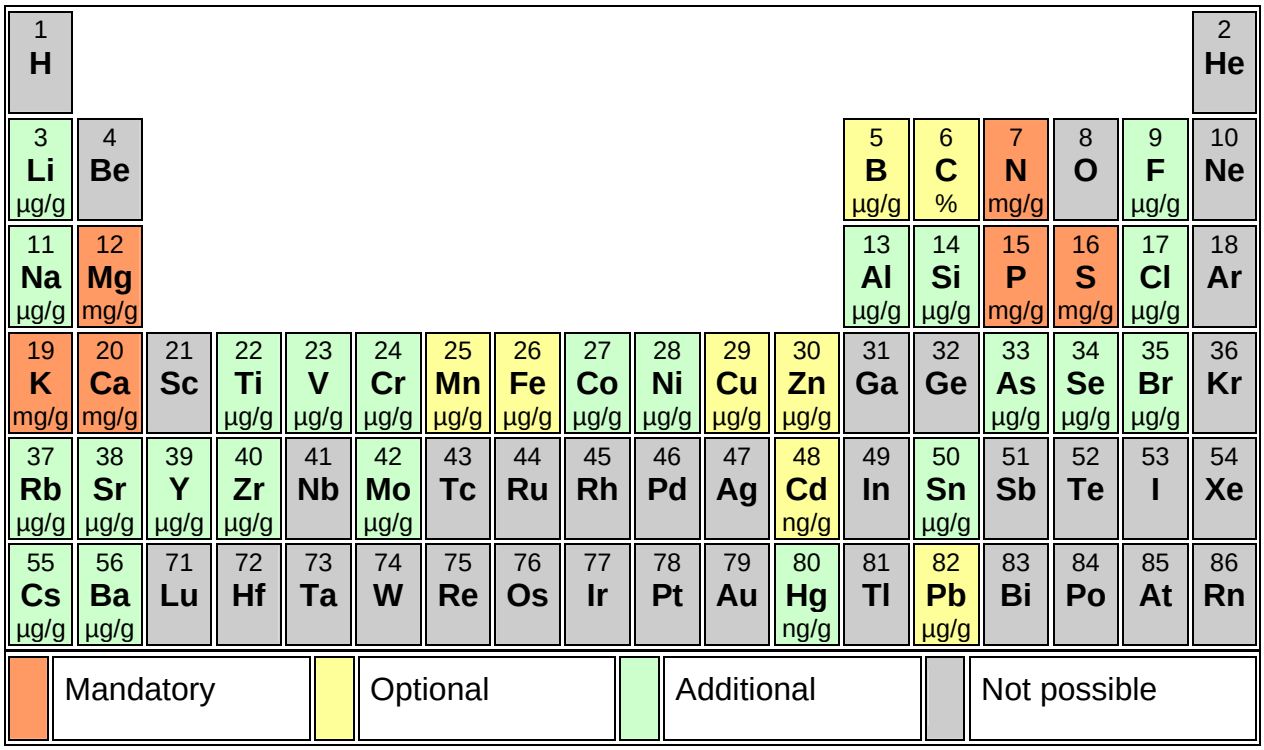
For each element four replicates per sample are necessary within this Interlaboratory Test.

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.

All samples should be dried at 80^{o}C before analysis (moisture content appr. 5%) and results must be reported as dry matter (105^{o}C).

For a deeper evaluation - all participant laboratories received 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 2004.

Figure 1: Elements and units



2.2 Material

At the end of July 2004 the Austrian Federal Office and Research Centre for Forests (BFW) sent four dried and powdered plant samples to 43 European laboratories in 23 countries.

The samples consisted of:

1. Pine needles – ("Austria") identical with
   Pine needles (Finland) from the 6th Test (sample 1)
2. Spruce needles (Germany)
3. Beech Leaves (Croatia)
4. Ash leaves (Belgium)

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.

I have to thank to Tamara Jakovljevic(Croatia), Carine Buysse and Bruno de Vos (Belgium) for sampling and preparing their leaf samples for this test.

2.3 Participants

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

Table 1: Number of countries and laboratories taking part in the seven 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

With a few exceptions, all laboratories analysed in the 7th 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 (level II samples this year…x, no level II samples this year…o):

Labcode	N	S	P	Ca	Mg	K	Zn	Mn	Fe	Cu	Pb	B	Cd	C
01	x	x	x	x	x	x	x	x	x					x
02	x	x	x	x	x	x	x	x	x	x	x	x		x
03	x	x	x	x	x	x	x	x	x	o	o		o	o
04		o	o	o	o	o	o	o	o	o	o			
04a	o	o	o	o	o	o	o	o	o	o	o	o	o	o
05	x	x	x	x	x	x	x	x	x	x				
06	x	x	x	x	x	x	x	x	x	x	x	x	x	x
07	x	x	x	x	x	x	x	x	x	x		x		o
08	o	o	o	o	o	o	o	o	o	o	o		o	o
09	x	x	x	x	x	x	x	x	x	x	x		x	o
12	x	x	x	x	x	x	o	o	o	o		o		x
13	x	x	x	x	x	x	o	o						o
15	o	o	o	o	o	o								o
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	x	x	x	x	
19	o	o	o	o	o	o								o
20	x	x	x	x	x	x								x
25	x	x	x	x	x	x	x	x	x	x	x	x	x	x
26	o	o	o	o	o	o	o	o	o	o	o	o	o	
28	o	o	o	o	o	o	o	o		o		o		
33a	o		o	o	o	o	o	o	o	o	o		o	
35	o		o			o								
36	x	x	x	x	x	x	x	x	x	x	x	x	x	x
37	x	x	x	x	x	x	x	x	x	x	x	x	x	
38	x	x	x	o	x	x	x	x	x	x	x	x	x	x
38a	x	x	x	x	x	x	x	x	x	x				
39	x	x	x	x	x	x	x	x	x	x	x	x	x	x
40	o	o	o	o	o	o								
42	o	o	o	o	o	o	o	o	o	o		o	o	o
43	x	x	x	x	x	x	x	x	x	x	x	o	x	o
44	x	x	x	x	x	x	x	x	x	x	x		x	x
46	o	o	o	o	o	o	o	o	o					o
47		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	o	o	o	o	o	o	o	o	o	o				o
50	x	x	x	x	x	x	x	x	x	o	o	x	o	x
52	x	x	x	x	x	x	x	x	x	x		x		x
56	o	o	o	o	o	o	o	o	o	o	o	o	o	o
60	o	o		o	o	o	o		o	o	o	o	o	
61			x	x	x	x		x						
64	x	x	x	x	x	x	x	x	x	x	x	x	x	x
65														
66	o	o	o	o	o	o	o		o			o		o

2.4 Data Evaluation

Only four results above the detection limits can be used for the evaluation. Results below the detection limit are marked with "<" followed by the detection 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 4. 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	80-120	6th Meeting - Bonn 1999
P	85-115	6th Meeting - Bonn 1999
Ca	85-115	6th Meeting - Bonn 1999
Mg	85-115	6th Meeting - Bonn 1999
K	85-115	6th Meeting - Bonn 1999
Zn	85-115	8th Meeting - Prague 2003
Mn	85-115	8th Meeting - Prague 2003
Fe	80-120	6th Meeting - Bonn 1999
Cu	80-120	8th Meeting - Prague 2003
Pb	70-130	6th Meeting - Bonn 1999
Cd	70-130	6th Meeting - Bonn 1999
B	80-120	6th Meeting - Bonn 1999
C	95-105	6th Meeting - Bonn 1999

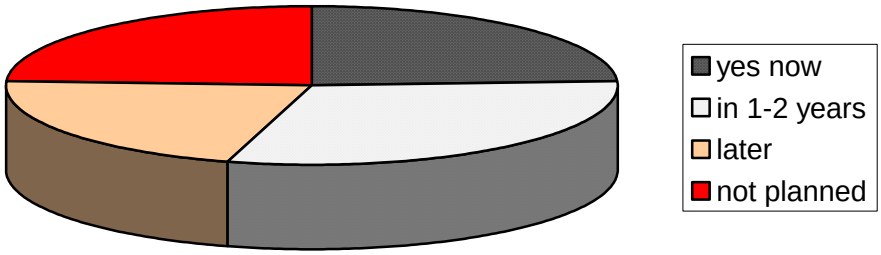
3 RESULTS

3.1 Main results of the questionnaire

All participating laboratories received a questionnaire in order to obtain information about the status of their quality control systems. 33 of the 43 laboratories have so far returned this questionnaire.

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

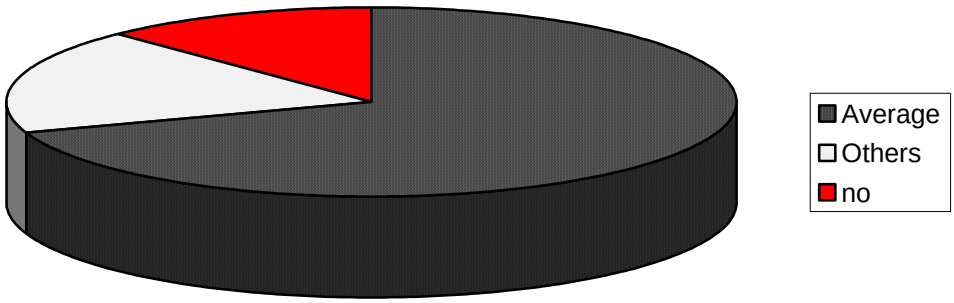
Figure 2: Accreditation status according EN 17025 (n=33)



More than 55% of the laboratories are accredited now (8 labs) or plan an accreditation within 1-2 years (10 labs). In comparison with the last test 2003/04 - 50% were accredited or planed an accreditation.

The next important question was about the usage of control charts for quality control. 90% of the laboratories are using control charts, and most of them are using average control chart (appr. 70%) – here is no change to the last ringtest.

Figure 3: Usage of control charts in foliar laboratories (n=33)



3.2 Results of the 7th Interlaboratory Comparison Test

Table 4 gives an overview as to which laboratories analysed the test samples well and which encountered problems. This evaluation is based on the tolerable limits from Table 3.

Laboratories with a percentage of non tolerable limits above 20% are the following: 40 (25%), 35 (25%), 15 (28,6%), 36 (32,1%), 01 (35%), 19 (39,3%), 25 (48,2%) and 05 (57,5%).

Table 4: Results of the 7th Interlaboratory Comparison Test – marked with the limits from table 4 (green = all four samples are analysed well; < = too low; > = too high)

Labcode	N	S	P	Ca	Mg	K	Zn	Mn	Fe	Cu	Pb	B	Cd	C
01				<<<		>>>>	>>>	<<	><					
02												<<<		<
03											<			
04					<<				><		>>>			
04a			>>		>				>>					>
05		<<<<	<<<	<<	<<<<		>>>>	<	<	<<<<				
06												<		
07								<						
08								<						
09														>>>>
12														
13		>				>>>	<	>						
15		>>	<<<<	>>										
17														
18											<<		>>>	
19		>>>>		>>	>>>									<<
20														
25	>	>		>>	>		>>>>	>	>>>>	>>>>	>>>>	>>>	>>	
26				>>								<		
28					<<		>	>				>		
33a											>>		><	
35	><													
36				<<	<<		<<	<	<	<<	>>>	<<<<	<	
37											<<			
38											<<			
38a					>				>	>				
39											<			
40	<					<								
42										<<<<				
43							>				<		<	
44														
46		>>		<<<	<									
47											>			
48											<<	>>		
49								<<						
50										>	>	<		
52														
56		>>							>	>	>	>		
60											<<	>>>		
61								<						
64			>>>>					<		>	>>			>
65														
66														

Laboratory 64 has used for phosphorous results incorrect units.

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 Pine	Sample 2 Spruce	Sample 3 Beech	Sample 4 Ash
N	mg/g	17,01	14,70	20,17	23,90
	%	0,00	2,63	5,12	5,12
S	mg/g	1,09	1,01	1,40	2,73
	%	12,82	10,25	7,69	10,25
P	mg/g	1,89	1,13	1,24	2,35
	%	7,32	9,76	7,32	7,32
Ca	mg/g	2,63	2,51	7,16	17,46
	%	19,51	17,07	7,32	0
Mg	mg/g	0,92	0,44	2,55	3,31
	%	9,76	12,20	7,32	12,20
K	mg/g	5,83	5,85	5,25	18,66
	%	4,76	4,76	4,76	4,76
Zn	µg/g	41,73	16,56	26,10	29,34
	%	5,56	22,86	16,67	11,11
Mn	µg/g	183,6	275,6	2630	49,60
	%	8,57	2,86	5,71	17,64
Fe	µg/g	36,81	162,4	91,24	142,1
	%	14,71	8,82	14,70	2,94
Cu	µg/g	3,13	3,82	7,22	8,29
	%	22,58	12,90	9,38	12,50
Pb	µg/g	0,21	1,86	0,51	0,72
	%	80,00	8,70	57,14	20,00
Cd	ng/g	78,63	41,00	149,7	28,04
	%	15,00	0,00	4,76	25,00
B	µg/g	5,98	17,40	15,33	32,11
	%	38,10	17,39	21,74	8,70
C	g/100g	51,61	51,70	50,65	46,81
	%	6,90	6,90	3,45	13,79

3.3 Comparison between the 7th Interlaboratory Comparison Test and former tests

Sample 1 of the 7th and sample 1 of the 6th Interlaboratory Comparison Tests were identical (Pine-Finland). For all of the elements the mean values harmonize very well (Table 6).

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

Element (Unit)	6th Interlaboratory Comparison Test (Sample 1)		7th Interlaboratory Comparison Test (Sample 2)	
	Mean	*Number of Labs*	Mean	*Number of Labs*
Nitrogen (mg/g)	16,94	*41*	17,01	*39*
Sulphur (mg/g)	1,12	*40*	1,09	*39*
Phosphorus (mg/g)	1,91	*42*	1,89	*41*
Calcium (mg/g)	2,64	*42*	2,63	*41*
Magnesium (mg/g)	0,93	*42*	0,92	*41*
Potassium (mg/g)	5,79	*42*	5,83	*42*
Zinc (µg/g)	41,88	*37*	41,73	*36*
Manganese (µg/g)	187,2	*38*	183,6	*35*
Iron (µg/g)	38,14	*37*	36,81	*34*
Copper (µg/g)	3,13	*34*	3,13	*31*
Lead (µg/g)	0,23	*19*	0,21	*15*
Cadmium (ng/g)	74,19	*21*	78,63	*20*
Boron (µg/g)	5,40	*18*	5,98	*21*
Carbon (g/100g)	51,69	*32*	51,61	*29*

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

Table 7: Percentage of non tolerable values

Element	Tolerable deviation from mean (± %)	2nd Labtest 1995/1996		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**	*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

3.4 Evaluation by element

3.4.1 Nitrogen

Very good results were produced and only 3,2% of non-tolerable results could be found. Only laboratory 35 failed with three samples. A possible explanation could be that this laboratory used a not recommended digestion method ($HClO_4/H_2SO_4$) for analysing nitrogen.

3.4.2 Sulphur

In comparison with the 6th Interlaboratory Test the percentage of non tolerable results is nearly the same (10,3%). Laboratories 05 and 19 failed with all samples. Laboratory 05 is still using a not recommended dry ashing method (Stefan et al. 2000).

Some of the laboratories with high or excessive sulphur values are using C/N/S analysers. As can be seen from the last ringtests for Carbon, this is frequently a calibration problem.

3.4.3 Phosphorus

A good result was produced with only 7,9% non tolerable values. Laboratory 64 was using a wrong unit for the ringtest results.

3.4.4 Calcium

The result (11% non tolerable) is not as good as the previous tests. Most of the labs used wet digestion combined with ICP, but some utilized the Flame Atomic Absorption determination method. Because of the phosphorous interference, a C_2H_2/N_2O flame or a modifier (e.g. La) must be used for the AAS method (Stefan et al. 2000). This could be a possible reason for the to low values of the labs 01, 05 and 36.

3.4.5 Magnesium

The same trends like those for Calcium were noted. 10,4% of non tolerable results were obtained and this indicates a deterioration from the previous test. Laboratories 05 and 19 failed with 4 and 3 samples respectively.

3.4.6 Potassium

A very good result with only 4.8% of non-tolerable values emerged. Laboratories 01 and 13 failed with 3 or 4 samples respectively. Both laboratories were using Flame-AAS. For this method matrix adopted standards and the use of an ionisation buffer are necessary (Stefan et al. 2000).

3.4.7 Zinc

14,0% outliers were found, which is slightly more than the results of the 6th ringtest. Laboratories 01, 05 and 25 have 3 or 4 outliers. Laboratories 01 and 05 are using open acid digestion method, but because of contamination effects it would be advantageous to use acid digestion in closed systems.

3.4.8 Manganese

A very good result, only 8,4% of non-tolerable values, which is slightly better than that of the 6th ringtest. No laboratory had severe problems analysing manganese .

3.4.9 Iron

The iron results are good (10,3% of non-tolerable results). Only laboratory 25 failed with all samples.

3.4.10 Copper

14,3% of outliers were found and this is an increase of the non-tolerable values. Three laboratories (05, 25, 42) failed with all samples.

3.4.11 Lead

An increase to 38,0% of non-tolerable results could be found, which resulted from the very low concentration in sample 1 (0.21 mg/kg) and the low concentration in sample 3 (0,51 mg/kg). Whenever the concentration of the sample is ten times higher, only 8.7% outliers could be found (sample 2). For low lead concentrations it is better to use flameless AAS or ICP-MS as determination method. The laboratories 04, 25 and 36 failed with 3 or 4 samples.

3.4.12 Cadmium

A very good result for Cadmium was noted with only 11,1% of non-tolerable results. Only laboratory 18 failed with 3 samples.

3.4.13 Boron

The results are not good as 21,1% of outliers were found. In the last ringtests only approximately 15% of non-tolerable values could be found. The laboratories 02, 25, 36, und 56 failed with 3 or 4 samples.

Most of the labs are using closed acid digestion (quartz or teflon vessels) and ICP determination.

3.4.14 Carbon

A very good result for carbon emerged and only 7,8% of outliers were found. Most of the laboratories had their calibration problems with element analysers fixed. Laboratory 09 failed with all four samples.

4 CONCLUSIONS

The results of the 7th Interlaboratory Comparison Test show generally a good analytical quality in foliar analysis. Some of the laboratories had to learn from their ringtest results, especially those with outliers type b, c and/or results outside of the tolerable limits. A few of the laboratories must change their methods (e.g. dry ashing!!!) or check their methods with standard reference materials, ring test samples or primary standards.
Calibration Problems of element analysers appear to be corrected. Most of the labs (90%) are using control charts as a daily routine procedure.

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

- For C, N,(S) element-analysers 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, Cu, Pb and Cd.
- Flameless-AAS and ICP-MS methods should be used for analysing Cd, Pb and Cu (especially for low concentrations)
- X-ray fluorescence analyses is the method to generate good results for S, P, Ca, Mg, K, Zn and Mn.

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Method Code – Pretreatment (P)

0 No information

1 No pretreatment

2 Extractions
2.1 Extraction, H2O
2.2 Extraction. HNO3
2.2 Extraction, aqua regia

3 Wet ashings at room pressure (open system)
3.1 Wet ashing, HNO_3
3.2 Wet ashing, HNO_3/HF
3.3 Wet ashing, $HNO_3/HClO_4$
3.4 Wet ashing, $HNO_3/HClO_4$/HF
3.5 Wet ashing HNO_3/H_2O_2
3.6 Wet ashing $HNO_3/HClO_4$ /H_2SO_4
3.7 Wet ashing, $HNO_3/HClO_4/CaCl_2$
3.8 Wet ashing, $HNO_3/HClO_4/H_2O_2$
3.9 Wet ashing, HNO_3,/$HClO_4$/HCl
3.10 Wet ashing, HNO_3 /H_2SO_4
3.11 Wet ashing, aqua regia
3.20 Wet ashing, $HClO_4/H_2O_2$
3.21 Wet ashing, $HClO_4/H_2SO_4$
3.31 Wet ashing, H_2SO_4/H_2O_2
3.32 Wet ashing, H_2SO_4/K_2CrO_7
3.50 Kjeldahl, H_2SO_4/ Se-catalyst
3.51 Kjeldahl, H_2SO_4/Cu-catalyst
3.52 Kjeldahl, H_2SO_4/Ti-Cu-catalyst
3.53 Kjeldahl, H_2SO_4/Hg-catalyst

4 Pressure digestions (closed system)
4.1 Pressure digestion, HNO_3,
4.2 Pressure digestion, HNO_3/HF
4.3 Pressure digestion, $HNO_3/HClO_4$,
4.4 Pressure digestion, $HNO_3/HClO_4$/HF,
4.5 Pressure digestion, HNO_3/H_2O_2,

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
6.1 Dry ashing, dissolution with HNO_3
6.2 Dry ashing, dissolution with $HNO_3/MgNO_3$
6.3 Dry ashing, dissolution with HNO_3/HF
6.4 Dry ashing, dissolution with HNO_3/HCl
6.5 Dry ashing, dissolution with HCl
6.6 Dry ashing, dissolution with HCl/HF
6.7 Dry ashing, dissolution with H_2SO_4

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)
9.3 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)

14 S-Analyzer
14.1 S-Analyzer (Leco)

15 C/N-Analyzer
15.1 C/N-Analyzer (Carlo-Erba)
15.2 C/N-Analyzer (Leco)
15.3 C/N-Analyzer (Heraeus)
15.4 C/N-Analyzer (Vario)

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

17 C/N/S-Analyzer
17.1 C/N/S-Analyzer (Leco)

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

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 technique

24 AAS-hydride technique

25 AAS-cold vapor technique

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

50 UV-VIS-spectrophotometry-techniques

51 Colorimetric N-Determination
51.1 Indophenol-blue-method
51.2 Flow Injection (FIAS) - NH_3-Membrane-diffusion, 566 nm
51.3 Continuous flow method, Indophenol blue

52 Colorimetric S-Determination
52.1 BaCl2-methods (Nephelometry)

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

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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
72.1 pH
72.2 other ion selective elektrodes

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 NH_4-back titration
82.2 Thiocyanate-titration
82.3 $FeNH_4SO_4$-Titration
82.4 Barimetric titration
82.5 $AgNO_3$-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 2003/2004 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
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
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 4)

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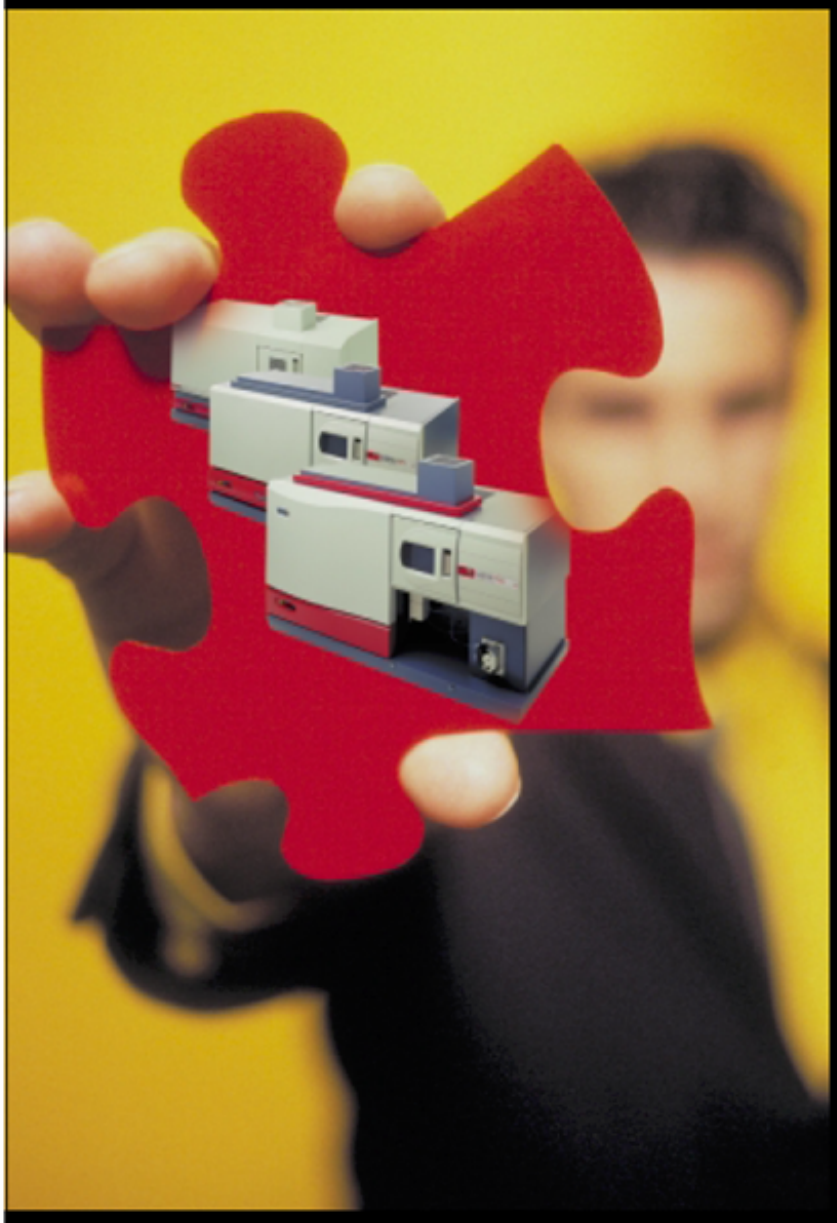

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Annex

Results of the 7th Needle/Leaf-Interlaboratory Test

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: N **Sample: 1 (Pine Needles - Finland)** 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	19	1	15.1	15,50	15,40	15,20	15,70	4	15,45	0,21	1,35	90,82
2	02x	1	15	16,50	15,10	16,00	15,60	4	15,80	0,59	3,76	92,87
3	33a	0	82	15,90	16,30	16,20	16,10	4	16,13	0,17	1,06	94,79
4	36x	3.51	11	16,20	16,24	16,11	16,17	4	16,18	0,05	0,34	95,11
5	60	1	12.3	16,32	16,30	16,27	16,30	4	16,30	0,02	0,13	95,80
6	18x	3.31	53.3	16,01	16,66	16,55	16,12	4	16,34	0,32	1,95	96,02
7	09x	3.51	11.2	16,32	16,54	16,44	16,36	4	16,42	0,10	0,59	96,49
8	12x	1	17.1	16,58	16,56	16,55	16,53	4	16,56	0,02	0,13	97,31
9	50x	1	17.1	16,71	16,45	16,73	16,55	4	16,61	0,13	0,80	97,64
10	38a	0	12.1	16,65	16,44	16,76	16,65	4	16,63	0,13	0,80	97,72
11	05x	3.52	11	16,63	16,63	16,63	16,63	4	16,63	0,00	0,00	97,75
12	04a	1	12.3	17,18	16,33	16,62	17,01	4	16,79	0,38	2,28	98,66
13	49	1	15.4	17,08	16,81	16,60	16,66	4	16,79	0,21	1,28	98,68
14	15	1	17	17,10	17,60	16,20	16,30	4	16,80	0,67	3,98	98,75
15	20x	1	15.2	16,79	16,69	16,89	16,83	4	16,80	0,08	0,50	98,75
16	01x	1	17.1	17,00	16,70	16,70	16,90	4	16,83	0,15	0,89	98,90
17	40	1	15.3	16,70	16,90	16,90	16,80	4	16,83	0,10	0,57	98,90
18	39x	7	10	17,10	16,61	16,79	16,93	4	16,86	0,21	1,23	99,09
19	28	3.31	51.3	16,99	16,84	16,86	16,77	4	16,87	0,09	0,54	99,14
20	08	1	15.2	16,90	17,20	16,80	16,80	4	16,93	0,19	1,12	99,49
21	64x	3.51	11.2	16,92	16,99	16,96	16,95	4	16,96	0,03	0,17	99,66
22	06x	1	15.1	17,41	16,76	16,94	16,77	4	16,97	0,30	1,80	99,75
23	03x	1	15.2	17,35	17,28	17,14	17,08	4	17,21	0,12	0,72	101,18
24	48x	1	15.4	17,20	17,42	17,05	17,30	4	17,24	0,16	0,91	101,35
25	13x	1	17.1	17,30	17,20	17,20	17,30	4	17,25	0,06	0,33	101,40
26	17x	1	17	17,30	17,30	17,30	17,20	4	17,28	0,05	0,29	101,55
27	42	1	12.3	17,38	17,28	17,17	17,28	4	17,28	0,09	0,50	101,56
28	44x	1	15	18,13	17,47	17,23	17,04	4	17,47	0,48	2,72	102,68
29	37x	1	12.1	17,30	17,62	17,62	17,52	4	17,52	0,15	0,86	102,96
30	07x	0	18.1	17,70	17,20	17,80	17,40	4	17,53	0,28	1,57	103,01
31	38x	1	15.3	17,60	17,60	17,30	17,70	4	17,55	0,17	0,99	103,16
32	46	1	12.1	17,43	17,88	17,68	17,54	4	17,63	0,19	1,10	103,65
33	56	7	12.2	17,87	17,68	17,33	17,69	4	17,64	0,23	1,28	103,71
34	52x	0	15.2	17,70	17,69	17,70	17,65	4	17,69	0,02	0,13	103,96
35	25x	1	17	17,40	17,90	18,00	17,70	4	17,75	0,26	1,49	104,34
36	43x	1	15.2	17,80	17,80	17,70	17,70	4	17,75	0,06	0,33	104,34
37	66	1	15.2	17,80	17,90	17,70	17,60	4	17,75	0,13	0,73	104,34
38	26	3.31	15	18,38	18,46	17,80	18,28	4	18,23	0,30	1,62	107,16
39	35	3.21	11	18,05	18,31	18,55	18,29	4	18,30	0,20	1,12	107,57
40												
41												
42												
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51												
52												
53												
54												
55												

	N	Mean	SI	VI
all labs	156	**17,01**	**0,182**	**1,072**
10	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: N **Sample: 2 (Spruce needles - Germany)** 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	02x	1	15	*13,20*	*13,30*	*14,60*	*13,40*	0	13,63	b		0,66	4,81	92,66
2	36x	3.51	11	13,83	13,95	13,89	13,91	4	13,90			0,05	0,36	94,50
3	19	1	15.1	13,90	14,00	14,20	13,80	4	13,98			0,17	1,22	95,04
4	60	1	12.3	14,07	13,93	14,03	14,07	4	14,03			0,07	0,47	95,38
5	18x	3.31	53.3	14,43	14,33	14,00	14,22	4	14,25			0,18	1,30	96,88
6	38a	0	12.1	14,18	14,07	14,29	14,50	4	14,26			0,18	1,29	96,98
7	50x	1	17.1	14,60	14,21	14,30	14,15	4	14,32			0,20	1,40	97,35
8	40	1	15.3	14,40	14,50	14,30	14,10	4	14,33			0,17	1,19	97,42
9	28	3.31	51.3	14,54	*13,68a*	14,51	14,58	3	14,54			0,04	0,24	98,90
10	12x	1	17.1	14,40	14,28	14,36	14,34	4	14,35			0,05	0,35	97,56
11	09x	3.51	11.2	14,57	14,27	14,46	14,24	4	14,39			0,16	1,09	97,83
12	33a	0	82	14,10	14,70	14,30	14,50	4	14,40			0,26	1,79	97,93
13	08	1	15.2	14,40	14,50	14,50	14,40	4	14,45			0,06	0,40	98,27
14	04a	1	12.3	14,74	14,00	14,62	14,46	4	14,46			0,32	2,24	98,30
15	05x	3.52	11	14,53	14,82	14,54	14,25	4	14,54			0,23	1,60	98,85
16	39x	7	10	14,79	14,33	14,31	14,90	4	14,58			0,31	2,10	99,17
17	64x	3.51	11.2	14,59	14,56	14,59	14,62	4	14,59			0,02	0,17	99,22
18	01x	1	17.1	14,60	14,80	14,70	14,60	4	14,68			0,10	0,65	99,80
19	49	1	15.4	14,74	14,64	14,49	14,83	4	14,68			0,15	0,99	99,80
20	20x	1	15.2	14,61	14,64	14,72	14,78	4	14,69			0,08	0,53	99,89
21	44x	1	15	14,69	14,71	14,46	14,98	4	14,71			0,21	1,45	100,04
22	03x	1	15.2	14,77	14,65	14,73	14,86	4	14,75			0,09	0,59	100,33
23	42	1	12.3	14,80	14,80	14,85	14,75	4	14,80			0,04	0,28	100,65
24	07x	0	18.1	14,80	14,90	14,70	15,00	4	14,85			0,13	0,87	100,99
25	17x	1	17	14,80	14,90	14,90	14,90	4	14,88			0,05	0,34	101,16
26	46	1	12.1	14,79	14,85	14,90	14,99	4	14,88			0,08	0,57	101,21
27	37x	1	12.1	14,83	14,94	14,83	14,94	4	14,89			0,06	0,43	101,23
28	38x	1	15.3	14,90	14,90	14,80	15,00	4	14,90			0,08	0,55	101,33
29	13x	1	17.1	14,90	14,90	15,00	14,90	4	14,93			0,05	0,34	101,50
30	48x	1	15.4	14,96	14,89	15,11	14,96	4	14,98			0,09	0,62	101,87
31	06x	1	15.1	14,65	15,50	15,06	14,88	4	15,02			0,36	2,40	102,16
32	56	7	12.2	15,13	15,23	14,85	14,95	4	15,04			0,17	1,14	102,28
33	15	1	17	15,90	15,70	14,30	14,40	4	15,08			0,84	5,59	102,52
34	52x	0	15.2	15,10	15,10	15,10	15,10	4	15,10			0,00	0,00	102,69
35	66	1	15.2	15,30	15,40	15,30	15,40	4	15,35			0,06	0,38	104,39
36	43x	1	15.2	15,40	15,40	15,30	15,50	4	15,40			0,08	0,53	104,73
37	26	3.31	15	15,57	15,48	15,45	15,54	4	15,51			0,05	0,35	105,48
38	25x	1	17	15,60	15,40	15,80	15,60	4	15,60			0,16	1,05	106,09
39	35	3.21	11	*16,13*	*16,37*	*16,25*	*16,26*	4	16,25	b	*	0,10	0,60	110,53
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	N	Mean	SI	VI
all labs	147	**14,70**	**0,146**	**0,995**
10	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: N **Sample: 3 (Beech Leaves - Croatia)** 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	35	3.21	11	*14,23*	*13,74*	*13,91*	*13,95*	0	13,96	b	*	0,20	1,46	69,19
2	40	1	15.3	17,80	18,50	18,10	18,20	4	18,15		*	0,29	1,59	89,97
3	01x	1	17.1	18,40	18,30	18,80	18,40	4	18,48			0,22	1,20	91,58
4	02x	1	15	18,80	18,70	18,90	19,20	4	18,90			0,22	1,14	93,69
5	36x	3.51	11	19,10	18,94	19,20	19,16	4	19,10			0,11	0,60	94,68
6	18x	3.31	53.3	19,47	19,57	19,04	18,61	4	19,17			0,44	2,29	95,04
7	60	1	12.3	19,18	19,22	19,23	19,28	4	19,23			0,04	0,21	95,31
8	19	1	15.1	19,30	19,33	19,30	19,27	4	19,30			0,02	0,13	95,67
9	28	3.31	51.3	20,14	19,56	19,75	19,06	4	19,63			0,45	2,29	97,30
10	50x	1	17.1	19,63	19,72	19,89	19,61	4	19,71			0,13	0,65	97,72
11	05x	3.52	11	19,88	19,85	19,60	19,78	4	19,78			0,13	0,63	98,04
12	09x	3.51	11.2	19,93	19,94	19,77	19,51	4	19,79			0,20	1,01	98,09
13	12x	1	17.1	19,67	19,72	19,97	20,13	4	19,87			0,22	1,09	98,51
14	46	1	12.1	20,00	19,89	19,99	19,88	4	19,94			0,06	0,32	98,85
15	64x	3.51	11.2	20,30	19,95	19,92	20,01	4	20,05			0,17	0,87	99,37
16	33a	0	82	19,90	20,00	20,40	19,90	4	20,05			0,24	1,19	99,39
17	39x	7	10	19,74	19,60	20,29	20,68	4	20,08			0,50	2,49	99,53
18	06x	1	15.1	20,65	19,49	20,65	19,82	4	20,15			0,59	2,93	99,90
19	04a	1	12.3	20,49	19,69	20,18	20,27	4	20,16			0,34	1,68	99,92
20	20x	1	15.2	20,08	20,13	20,24	20,31	4	20,19			0,10	0,52	100,08
21	13x	1	17.1	20,40	20,40	20,20	20,00	4	20,25			0,19	0,95	100,38
22	08	1	15.2	20,30	20,20	20,30	20,30	4	20,28			0,05	0,25	100,51
23	42	1	12.3	20,30	19,98	20,72	20,30	4	20,33			0,30	1,49	100,75
24	49	1	15.4	20,76	20,31	20,22	20,06	4	20,34			0,30	1,48	100,82
25	15	1	17	20,90	19,40	20,20	21,00	4	20,38			0,74	3,64	101,00
26	52x	0	15.2	20,40	20,45	20,50	20,45	4	20,45			0,04	0,20	101,37
27	48x	1	15.4	20,58	20,00	21,03	20,25	4	20,47			0,45	2,18	101,45
28	07x	0	18.1	20,40	20,70	20,30	20,60	4	20,50			0,18	0,89	101,62
29	03x	1	15.2	20,61	20,35	20,48	20,70	4	20,54			0,15	0,74	101,79
30	17x	1	17	20,50	20,60	20,60	20,50	4	20,55			0,06	0,28	101,87
31	37x	1	12.1	20,42	20,74	20,63	20,42	4	20,55			0,16	0,78	101,88
32	56	7	12.2	20,89	20,16	20,50	21,13	4	20,67			0,43	2,07	102,46
33	38x	1	15.3	20,90	21,10	20,40	20,80	4	20,80			0,29	1,42	103,11
34	38a	0	12.1	20,84	20,74	20,95	20,84	4	20,84			0,09	0,41	103,32
35	66	1	15.2	21,10	21,10	21,20	21,00	4	21,10			0,08	0,39	104,60
36	26	3.31	15	21,63	21,21	21,48	20,97	4	21,32			0,29	1,37	105,70
37	44x	1	15	20,82	21,56	22,22	21,63	4	21,56			0,57	2,66	106,86
38	25x	1	17	22,50	21,80	21,40	21,90	4	21,90			0,45	2,08	108,56
39	43x	1	15.2	22,10	21,80	22,20	22,10	4	22,05			0,17	0,79	109,30
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	N	Mean	SI	VI
all labs	152	**20,17**	**0,250**	**1,237**
10	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: N **Sample: 4 (Ash Leaves - Belgium)** 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	35	3.21	11	*14,63*	*14,98*	*14,87*	*14,82*	0	14,83	b	*	0,15	0,99	62,02
2	01x	1	17.1	22,40	22,20	21,60	21,80	4	22,00			0,37	1,66	92,04
3	36x	3.51	11	22,21	22,30	22,10	22,19	4	22,20			0,08	0,37	92,88
4	02x	1	15	23,00	23,60	22,60	20,10	4	22,33			1,54	6,89	93,40
5	60	1	12.3	22,43	22,34	22,51	22,30	4	22,40			0,09	0,42	93,69
6	19	1	15.1	21,90	22,51	23,40	22,80	4	22,65			0,62	2,75	94,77
7	05x	3.52	11	22,75	23,10	23,10	23,21	4	23,04			0,20	0,87	96,39
8	18x	3.31	53.3	22,88	23,41	22,66	23,31	4	23,07			0,35	1,54	96,50
9	09x	3.51	11.2	23,16	23,37	23,09	23,33	4	23,24			0,13	0,58	97,22
10	64x	3.51	11.2	23,19	23,40	23,31	23,30	4	23,30			0,09	0,37	97,48
11	33a	0	82	23,40	23,30	23,70	23,20	4	23,40			0,22	0,92	97,90
12	50x	1	17.1	23,65	23,33	23,40	23,46	4	23,46			0,14	0,59	98,15
13	12x	1	17.1	23,90	23,12	23,49	23,36	4	23,47			0,33	1,39	98,18
14	06x	1	15.1	23,60	23,45	23,67	23,31	4	23,51			0,16	0,68	98,35
15	04a	1	12.3	23,86	22,89	23,75	23,59	4	23,52			0,44	1,85	98,41
16	20x	1	15.2	23,77	23,53	23,66	23,53	4	23,62			0,12	0,49	98,83
17	28	3.31	51.3	23,87	23,68	23,59	23,48	4	23,66			0,17	0,70	98,97
18	44x	1	15	23,55	23,79	24,02	23,81	4	23,79			0,19	0,81	99,54
19	40	1	15.3	24,00	23,80	23,60	24,20	4	23,90			0,26	1,08	99,99
20	52x	0	15.2	24,00	23,90	23,91	23,81	4	23,91			0,08	0,32	100,01
21	39x	7	10	24,11	23,61	23,34	24,59	4	23,91			0,55	2,31	100,04
22	13x	1	17.1	23,70	24,10	23,90	24,20	4	23,98			0,22	0,92	100,31
23	08	1	15.2	24,50	24,20	23,70	23,90	4	24,08			0,35	1,45	100,72
24	49	1	15.4	24,15	23,73	24,49	24,09	4	24,12			0,31	1,29	100,89
25	46	1	12.1	24,14	24,33	24,02	24,13	4	24,16			0,13	0,53	101,06
26	38a	0	12.1	24,39	24,07	23,96	24,39	4	24,20			0,22	0,91	101,26
27	17x	1	17	24,50	24,40	24,00	24,20	4	24,28			0,22	0,91	101,56
28	03x	1	15.2	24,28	24,69	24,33	24,13	4	24,36			0,24	0,97	101,91
29	42	1	12.3	24,11	24,75	24,43	24,32	4	24,40			0,27	1,09	102,09
30	37x	1	12.1	24,31	24,52	24,31	24,52	4	24,42			0,12	0,50	102,15
31	07x	0	18.1	24,30	24,80	24,70	24,50	4	24,58			0,22	0,90	102,82
32	56	7	12.2	25,36	24,34	24,39	24,91	4	24,75			0,48	1,95	103,55
33	38x	1	15.3	24,60	24,90	25,20	24,70	4	24,85			0,26	1,06	103,97
34	48x	1	15.4	25,08	24,15	24,88	25,30	4	24,85			0,50	2,01	103,98
35	26	3.31	15	24,65	25,27	24,34	25,21	4	24,87			0,45	1,81	104,04
36	66	1	15.2	25,20	24,60	25,00	25,20	4	25,00			0,28	1,13	104,59
37	15	1	17	25,60	25,20	24,50	24,90	4	25,05			0,47	1,86	104,80
38	43x	1	15.2	25,40	25,30	25,40	25,80	4	25,48			0,22	0,87	106,58
39	25x	1	17	27,50	26,80	25,30	26,50	4	26,53		*	0,92	3,46	110,97
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	N	Mean	SI	VI
all labs	152	**23,90**	**0,316**	**1,321**
10	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: S **Sample: 1 (Pine Needles - Finland)** 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	05x	6.5	52.1	*0,17*	*0,19*	*0,16*	*0,18*	0	0,18	b	*	0,01	8,39	16,11
2	25x	1	17	0,86	0,98	0,97	0,91	4	0,93			0,06	6,02	85,27
3	60	3.3	31	0,94	0,90	0,88	1,02	4	0,94			0,06	6,62	85,72
4	39x	5.5	31	0,95	0,93	0,93	0,95	4	0,94			0,01	1,23	86,18
5	28	6	61.2	1,02	0,94	0,98	0,92	4	0,97			0,04	4,60	88,47
6	64x	3.9	52	0,97	1,01	0,94	0,96	4	0,97			0,03	3,17	89,00
7	07x	5.5	31	1,00	0,99	1,01	1,00	4	1,00			0,01	0,71	91,68
8	36x	5.5	31	1,05	1,03	1,02	1,03	4	1,03			0,01	1,22	94,66
9	08	3.3	31	1,08	0,97	1,08	1,02	4	1,04			0,05	5,00	95,19
10	04	9.1	41	1,04	1,04	1,04	1,04	4	1,04			0,00	0,00	95,35
11	38x	4.5	31	1,06	1,05	1,03	1,04	4	1,05			0,01	1,24	95,81
12	26	5.1	35	0,99	1,08	1,06	1,09	4	1,05			0,05	4,32	96,70
13	18x	1	14	1,06	1,06	1,05	1,06	4	1,06			0,00	0,47	96,96
14	44x	4.1	31	1,06	1,04	1,07	1,06	4	1,06			0,01	1,19	96,96
15	06x	5.2	31	1,07	1,07	1,06	1,07	4	1,07			0,01	0,58	97,87
16	37x	5.5	31	1,08	1,07	1,07	1,08	4	1,08			0,01	0,59	98,79
17	52x	4.1	31	1,08	1,09	1,08	1,10	4	1,09			0,01	0,88	99,71
18	48x	4.1	31	1,11	1,07	1,09	1,10	4	1,09			0,02	1,50	100,07
19	02x	5.3	31	1,10	1,10	1,10	1,10	4	1,10			0,00	0,00	100,85
20	12x	5.1	31	1,05	1,09	1,09	1,18	4	1,10			0,05	4,92	100,92
21	43x	4.1	31	1,11	1,10	1,11	1,09	4	1,10			0,01	0,87	101,08
22	40	5.7	31	1,11	1,12	1,09	1,13	4	1,11			0,02	1,54	102,00
23	47x	4.1	32	1,11	1,08	1,10	1,17	4	1,12			0,04	3,47	102,23
24	49	4.1	31	1,12	1,13	1,11	1,13	4	1,12			0,01	0,85	102,92
25	01x	1	16.1	1,13	1,08	1,14	1,15	4	1,13			0,03	2,76	103,14
26	42	4.1	31	1,12	1,14	1,13	1,13	4	1,13			0,01	0,84	103,30
27	50x	4.1	31	1,14	1,15	1,12	1,14	4	1,14			0,01	0,77	104,11
28	38a	9.1	42	1,15	1,14	1,14	1,15	4	1,14			0,01	0,47	104,79
29	66	5.5	31	1,25	1,17	1,12	1,11	4	1,16			0,06	5,50	106,58
30	04a	9.1	42	1,19	1,17	1,19	1,15	4	1,17			0,02	1,47	107,57
31	03x	1	14.1	1,16	1,20	1,13	1,21	4	1,18			0,04	3,15	107,73
32	09x	5.5	31	1,19	1,15	1,18	1,19	4	1,18			0,02	1,76	107,93
33	46	5.2	31	1,14	1,18	1,17	1,22	4	1,18			0,03	2,89	108,16
34	20x	1	14.1	*1,77a*	1,15	1,23	1,25	3	1,21			0,05	4,48	110,69
35	17x	1	17	1,21	1,28	1,21	1,22	4	1,23			0,03	2,74	112,77
36	13x	1	17.1	1,30	1,20	1,40	1,40	4	1,33		*	0,10	7,23	121,48
37	56	7	17	*1,49*	*1,39*	*1,46*	*1,52*	0	1,47	b	*	0,06	3,80	134,32
38	19	3.5	31	*1,66*	*1,70*	*1,75*	*1,63*	0	1,69	b	*	0,05	3,08	154,49
39	15	1	17	*2,05*	*1,94*	*2,00*	*1,96*	0	1,99	b	*	0,05	2,44	182,22
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	N	Mean	SI	VI
all labs	139	**1,09**	**0,027**	**2,439**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: S **Sample: 2 (Spruce needles - Germany)** 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	05x	6.5	52.1	*0,08*	*0,11*	*0,08*	*0,06*	0	0,08	b	*	0,02	23,94	8,38
2	37x	5.5	31	0,84	0,85	0,87	0,87	4	0,86			0,01	1,54	85,52
3	28	6	61.2	0,89	0,86	0,84	0,85	4	0,86			0,02	2,51	85,54
4	39x	5.5	31	0,85	0,89	0,87	0,85	4	0,87			0,02	2,21	86,04
5	08	3.3	31	0,89	0,90	0,89	0,88	4	0,89			0,01	0,89	88,45
6	60	3.3	31	0,89	0,89	0,90	0,89	4	0,89			0,00	0,56	88,77
7	38x	4.5	31	0,90	0,91	0,90	0,93	4	0,91			0,01	1,55	90,51
8	07x	5.5	31	0,93	0,91	0,92	0,93	4	0,92			0,01	0,92	91,61
9	36x	5.5	31	0,96	0,92	0,95	0,93	4	0,94			0,02	1,94	93,50
10	06x	5.2	31	0,95	0,95	0,94	0,93	4	0,94			0,01	1,11	93,62
11	44x	4.1	31	0,95	0,95	0,95	0,95	4	0,95			0,00	0,00	94,49
12	02x	5.3	31	1,00	0,90	0,90	1,00	4	0,95			0,06	6,08	94,49
13	18x	1	14	0,97	0,93	0,98	0,94	4	0,96			0,02	2,49	94,99
14	12x	5.1	31	0,94	0,98	0,97	1,01	4	0,97			0,03	3,04	96,86
15	43x	4.1	31	0,97	0,98	0,97	0,98	4	0,98			0,01	0,59	96,98
16	48x	4.1	31	0,97	0,97	0,97	0,98	4	0,98			0,01	0,58	97,11
17	40	5.7	31	0,98	0,99	0,97	0,99	4	0,98			0,01	0,91	97,60
18	04	9.1	41	0,99	0,99	0,99	1,00	4	0,99			0,01	0,50	98,72
19	26	5.1	35	1,04	1,08	0,97	0,90	4	1,00			0,08	8,16	99,12
20	47x	4.1	32	1,01	0,99	0,98	1,02	4	1,00			0,02	1,83	99,47
21	42	4.1	31	1,00	1,01	1,00	1,00	4	1,00			0,00	0,29	99,62
22	50x	4.1	31	1,01	1,00	1,01	1,01	4	1,01			0,01	0,77	100,29
23	01x	1	16.1	1,01	1,01	1,04	0,99	4	1,01			0,02	2,04	100,71
24	03x	1	14.1	1,00	1,04	1,03	1,03	4	1,03			0,02	1,69	101,95
25	49	4.1	31	1,02	1,06	1,05	1,01	4	1,04			0,02	2,30	102,95
26	52x	4.1	31	1,02	1,00	1,04	1,09	4	1,04			0,04	3,72	103,20
27	09x	5.5	31	1,05	1,04	1,04	1,05	4	1,04			0,01	0,60	103,87
28	38a	9.1	42	1,06	1,05	1,06	1,06	4	1,06			0,00	0,28	105,16
29	64x	3.9	52	1,05	1,09	1,06	1,07	4	1,07			0,02	1,60	106,18
30	04a	9.1	42	1,11	1,08	1,08	1,07	4	1,08			0,02	1,73	107,72
31	20x	1	14.1	1,17	1,07	1,11	1,05	4	1,10			0,05	4,87	109,04
32	25x	1	17	1,04	1,17	1,09	1,10	4	1,10			0,05	4,87	109,41
33	66	5.5	31	1,13	1,18	1,05	1,10	4	1,12			0,05	4,88	110,90
34	17x	1	17	1,11	1,12	1,12	1,13	4	1,12			0,01	0,73	111,40
35	46	5.2	31	1,12	1,09	1,14	1,14	4	1,12			0,02	2,10	111,75
36	13x	1	17.1	1,20	1,10	1,20	1,20	4	1,18			0,05	4,26	116,87
37	56	7	17	1,25	1,32	1,27	1,21	4	1,26		*	0,05	3,62	125,58
38	19	3.5	31	*1,50*	*1,52*	*1,49*	*1,54*	0	1,51	b	*	0,02	1,47	150,44
39	15	1	17	*1,55*	*1,64*	*1,53*	*1,60*	0	1,58	b	*	0,05	3,14	157,16
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	N	Mean	SI	VI
all labs	144	**1,01**	**0,022**	**2,208**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: S **Sample: 3 (Beech Leaves - Croatia)** 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	05x	6.5	52.1	*0,36*	*0,40*	*0,29*	*0,36*	0	0,35	b	*	0,05	13,35	25,06
2	39x	5.5	31	1,20	1,17	1,18	1,21	4	1,19			0,02	1,53	85,09
3	07x	5.5	31	1,27	1,24	1,24	1,22	4	1,24			0,02	1,66	88,85
4	28	6	61.2	1,28	1,25	1,19	1,32	4	1,26			0,05	4,35	90,10
5	08	3.3	31	1,23	1,25	1,26	1,32	4	1,27			0,04	3,06	90,46
6	20x	1	14.1	1,22	1,27	1,31	1,29	4	1,27			0,04	3,26	91,03
7	60	3.3	31	1,28	1,28	1,27	1,27	4	1,28			0,01	0,45	91,17
8	38x	4.5	31	1,29	1,26	1,27	1,31	4	1,28			0,02	1,73	91,71
9	37x	5.5	31	1,31	1,27	1,33	1,29	4	1,30			0,02	1,81	93,07
10	06x	5.2	31	1,31	1,32	1,31	1,30	4	1,31			0,01	0,56	93,73
11	26	5.1	35	1,37	1,26	1,41	1,26	4	1,33			0,08	5,80	94,75
12	44x	4.1	31	1,38	1,36	1,35	1,36	4	1,36			0,01	0,92	97,43
13	43x	4.1	31	1,37	1,36	1,36	1,37	4	1,37			0,01	0,42	97,61
14	02x	5.3	31	1,30	1,40	1,40	1,40	4	1,38			0,05	3,64	98,32
15	50x	4.1	31	1,37	1,39	1,39	1,41	4	1,39			0,02	1,23	99,48
16	17x	1	17	1,38	1,37	1,42	1,40	4	1,39			0,02	1,59	99,57
17	42	4.1	31	1,41	1,40	1,40	1,39	4	1,40			0,01	0,46	100,03
18	15	1	17	1,44	1,35	1,43	1,39	4	1,40			0,04	2,93	100,29
19	03x	1	14.1	1,39	1,41	1,40	1,42	4	1,41			0,01	0,92	100,47
20	04	9.1	41	1,41	1,41	1,41	1,42	4	1,41			0,01	0,35	101,00
21	48x	4.1	31	1,43	1,40	1,43	1,41	4	1,41			0,02	1,13	101,15
22	47x	4.1	32	1,43	1,43	1,42	1,38	4	1,42			0,02	1,68	101,18
23	12x	5.1	31	1,40	1,43	1,40	1,45	4	1,42			0,02	1,52	101,52
24	40	5.7	31	1,41	1,45	1,44	1,42	4	1,43			0,02	1,28	102,26
25	52x	4.1	31	1,44	1,40	1,48	1,40	4	1,43			0,04	2,68	102,26
26	01x	1	16.1	1,45	1,45	1,44	1,41	4	1,44			0,02	1,32	102,79
27	49	4.1	31	1,43	1,42	1,49	1,41	4	1,44			0,04	2,50	102,79
28	18x	1	14	1,39	1,39	1,52	1,50	4	1,45			0,07	4,81	103,69
29	04a	9.1	42	1,50	1,45	1,45	1,44	4	1,46			0,03	1,78	104,13
30	38a	9.1	42	1,46	1,45	1,46	1,46	4	1,46			0,00	0,32	104,29
31	09x	5.5	31	1,45	1,46	1,48	1,47	4	1,46			0,02	1,05	104,60
32	36x	5.5	31	1,48	1,50	1,47	1,48	4	1,48			0,01	0,85	106,01
33	66	5.5	31	1,56	1,54	1,48	1,48	4	1,52			0,04	2,72	108,33
34	64x	3.9	52	1,48	1,52	1,55	1,53	4	1,52			0,03	1,94	108,69
35	13x	1	17.1	1,50	1,50	1,60	1,60	4	1,55			0,06	3,72	110,84
36	25x	1	17	1,61	1,59	1,58	1,59	4	1,59			0,01	0,79	113,88
37	56	7	17	1,68	1,56	1,66	1,67	4	1,64			0,06	3,39	117,45
38	46	5.2	31	*1,68*	*1,77*	*1,79*	*1,74*	0	1,75	b	*	0,05	2,81	124,90
39	19	3.5	31	*2,20*	*2,00*	*2,30*	*2,50*	0	2,25	b	*	0,21	9,25	160,89
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	N	Mean	SI	VI
all labs	144	**1,40**	**0,027**	**1,947**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: S **Sample 4: (Ash Leaves - Belgium)** 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	05x	6.5	52.1	*1,24*	*1,27*	*1,38*	*1,49*	0	1,35	b	*	0,11	8,30	49,33
2	64x	3.9	52	2,15	2,23	1,98	2,05	4	2,10		*	0,11	5,23	77,12
3	17x	1	17	2,03	2,14	2,26	2,10	4	2,13		*	0,10	4,52	78,22
4	15	1	17	2,25	2,22	2,18	2,20	4	2,21			0,03	1,35	81,15
5	20x	1	14.1	2,24	2,21	2,22	2,20	4	2,22			0,01	0,66	81,30
6	07x	5.5	31	2,38	2,28	2,39	2,41	4	2,37			0,06	2,45	86,75
7	39x	5.5	31	2,43	2,43	2,42	2,43	4	2,43			0,00	0,21	89,04
8	38x	4.5	31	2,49	2,42	2,53	2,45	4	2,47			0,05	1,94	90,69
9	60	3.3	31	2,55	2,57	2,53	2,55	4	2,55			0,02	0,64	93,53
10	37x	5.5	31	2,55	2,52	2,58	2,57	4	2,55			0,02	0,97	93,67
11	38a	9.1	42	2,57	2,58	2,58	2,57	4	2,58			0,01	0,33	94,46
12	06x	5.2	31	2,59	2,63	2,60	2,67	4	2,62			0,04	1,41	96,23
13	01x	1	16.1	2,66	2,65	2,63	2,62	4	2,64			0,02	0,69	96,83
14	08	3.3	31	2,60	2,68	2,67	2,67	4	2,66			0,04	1,39	97,38
15	04a	9.1	42	2,72	2,63	2,70	2,61	4	2,66			0,05	1,92	97,73
16	03x	1	14.1	2,75	2,63	2,70	2,68	4	2,69			0,05	1,85	98,67
17	43x	4.1	31	2,67	2,71	2,64	2,75	4	2,69			0,05	1,78	98,76
18	40	5.7	31	2,67	2,69	2,71	2,72	4	2,70			0,02	0,82	98,94
19	44x	4.1	31	2,73	2,76	2,73	2,74	4	2,74			0,01	0,52	100,50
20	49	4.1	31	2,73	2,77	2,76	2,75	4	2,75			0,02	0,62	100,96
21	47x	4.1	32	2,75	2,73	2,78	2,77	4	2,76			0,02	0,80	101,14
22	48x	4.1	31	2,76	2,80	2,84	2,78	4	2,79			0,03	1,17	102,46
23	50x	4.1	31	2,80	2,81	2,79	2,79	4	2,80			0,01	0,39	102,60
24	02x	5.3	31	2,80	2,80	2,80	2,80	4	2,80			0,00	0,00	102,70
25	04	9.1	41	2,80	2,81	2,81	2,81	4	2,81			0,00	0,18	102,98
26	18x	1	14	2,96	2,87	2,65	2,76	4	2,81			0,13	4,78	103,07
27	09x	5.5	31	2,80	2,81	2,83	2,82	4	2,81			0,01	0,37	103,20
28	42	4.1	31	2,83	2,85	2,84	2,79	4	2,83			0,03	0,93	103,71
29	52x	4.1	31	2,83	2,82	2,88	2,80	4	2,83			0,03	1,20	103,89
30	36x	5.5	31	2,87	2,84	2,86	2,84	4	2,85			0,02	0,53	104,63
31	12x	5.1	31	2,85	2,96	2,94	2,99	4	2,94			0,06	2,08	107,70
32	66	5.5	31	3,07	2,95	2,88	2,91	4	2,95			0,08	2,83	108,30
33	13x	1	17.1	2,90	2,80	3,00	3,20	4	2,98			0,17	5,74	109,12
34	28	6	61.2	2,95	3,01	3,03	2,95	4	2,99			0,04	1,38	109,49
35	56	7	17	3,01	3,02	3,00	3,07	4	3,03			0,03	1,03	110,96
36	26	5.1	35	3,30	2,98	3,11	2,96	4	3,09			0,16	5,07	113,25
37	46	5.2	31	3,59	3,51	3,37	3,36	4	3,46		*	0,11	3,20	126,82
38	19	3.5	31	3,60	3,40	3,60	3,80	4	3,60		*	0,16	4,54	132,05
39	25x	1	17	*4,91*	*4,94*	*4,97*	*4,93*	0	4,94	b	*	0,03	0,51	181,11
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	N	Mean	SI	VI
all labs	148	**2,73**	**0,049**	**1,799**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: P **Sample: 1 (Pine Needles - Finland)** 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	15	5.1	53	1,53	1,66	1,62	1,60	4	1,60		*	0,05	3,39	84,98
2	46	5.2	31	1,61	1,61	1,60	1,62	4	1,61			0,01	0,46	85,33
3	05x	6.5	53.1	1,68	1,69	1,68	1,68	4	1,68			0,00	0,15	89,16
4	36x	3.3	53	1,69	1,70	1,69	1,68	4	1,69			0,01	0,48	89,62
5	26	5.1	35	1,84	1,75	1,66	1,79	4	1,76			0,08	4,33	93,33
6	39x	5.5	31	1,78	1,76	1,79	1,79	4	1,78			0,01	0,79	94,39
7	01x	3.21	50	1,71	1,81	1,81	1,85	4	1,80			0,06	3,33	95,19
8	03x	3.10	31	1,76	1,86	1,76	1,86	4	1,81			0,06	3,19	95,99
9	33a	5.1	50	1,82	1,83	1,79	1,81	4	1,81			0,02	0,94	96,12
10	13x	5.3	50	1,79	1,84	1,81	1,82	4	1,82			0,02	1,15	96,25
11	47x	4.1	32	1,88	1,82	1,75	1,81	4	1,82			0,05	2,93	96,25
12	17x	5.5	31	1,88	1,82	1,80	1,81	4	1,83			0,04	1,97	96,91
13	18x	3.31	31	1,82	1,82	1,84	1,86	4	1,84			0,02	1,12	97,31
14	61x	4.1	53.1	1,86	1,86	1,83	1,82	4	1,84			0,02	1,12	97,71
15	49	4.1	31	1,85	1,86	1,82	1,85	4	1,85			0,02	0,94	97,84
16	08	6.3	31	1,87	1,86	1,84	1,83	4	1,85			0,02	0,99	98,11
17	06x	5.2	31	1,87	1,89	1,87	1,87	4	1,87			0,01	0,47	99,39
18	52x	4.1	31	1,88	1,88	1,89	1,87	4	1,88			0,01	0,43	99,70
19	02x	5.3	31	1,90	1,90	1,90	1,90	4	1,90			0,00	0,00	100,76
20	12x	5.1	31	1,98	1,92	1,86	1,86	4	1,90			0,06	2,90	101,00
21	40	5.7	31	1,92	1,91	1,89	1,92	4	1,91			0,01	0,75	101,22
22	43x	4.1	31	1,92	1,91	1,92	1,89	4	1,91			0,01	0,74	101,29
23	19	3.5	31	1,93	1,90	1,95	1,89	4	1,92			0,03	1,44	101,69
24	20x	5.1	31	1,92	1,93	1,94	1,90	4	1,92			0,01	0,74	101,89
25	48x	4.1	31	1,95	1,87	1,92	1,94	4	1,92			0,03	1,73	101,91
26	44x	4.1	31	1,93	1,91	1,94	1,93	4	1,93			0,01	0,65	102,22
27	37x	5.5	31	1,87	2,03	1,89	1,93	4	1,93			0,07	3,67	102,32
28	04	9.1	41	1,93	1,93	1,93	1,94	4	1,93			0,00	0,26	102,48
29	50x	4.1	31	1,94	1,94	1,93	1,93	4	1,93			0,01	0,28	102,53
30	66	5.5	31	2,02	1,95	1,91	1,87	4	1,94			0,06	3,30	102,75
31	28	3.31	53.3	1,97	1,95	1,93	1,95	4	1,95			0,02	0,84	103,41
32	56	5.5	31	1,99	1,95	1,96	1,93	4	1,96			0,02	1,28	103,81
33	42	4.1	31	1,94	1,96	1,96	1,97	4	1,96			0,01	0,51	103,83
34	07x	5.5	31	1,98	1,96	1,99	1,97	4	1,98			0,01	0,65	104,74
35	38x	4.5	31	2,03	1,99	1,95	1,97	4	1,99			0,03	1,72	105,27
36	09x	5.5	31	2,01	1,97	1,97	1,99	4	1,99			0,02	0,88	105,29
37	35	3.21	53	2,00	1,99	1,99	1,99	4	1,99			0,00	0,25	105,66
38	38a	9.1	42	2,10	2,09	2,09	2,09	4	2,09			0,01	0,27	111,05
39	25x	5.1	31	2,17	2,09	2,12	2,17	4	2,14			0,04	1,85	113,35
40	04a	9.1	42	2,26	2,20	2,25	2,19	4	2,22		*	0,04	1,62	117,95
41	64x	6.5	53	*18,90*	*19,30*	*19,10*	*19,02*	0	19,08	b	*	0,17	0,88	1011,83
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	N	Mean	SI	VI
all labs	160	**1,89**	**0,025**	**1,352**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: P **Sample: 2 (Spruce needles - Germany)** 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	05x	6.5	53.1	0,96	0,91	0,89	0,89	4	0,91		*	0,03	3,36	80,35
2	15	5.1	53	0,95	0,97	0,92	0,97	4	0,95		*	0,02	2,48	83,98
3	46	5.2	31	0,98	0,95	0,99	0,96	4	0,97			0,02	1,70	85,33
4	36x	3.3	53	0,99	1,05	0,99	1,04	4	1,02			0,03	3,15	89,71
5	47x	4.1	32	1,09	1,04	1,01	1,03	4	1,04			0,03	3,26	91,92
6	33a	5.1	50	1,09	1,07	1,01	1,02	4	1,05			0,04	3,69	92,36
7	39x	5.5	31	1,06	1,08	1,07	1,06	4	1,07			0,01	0,90	94,12
8	13x	5.3	50	1,09	1,06	1,09	1,07	4	1,08			0,01	1,39	95,01
9	18x	3.31	31	1,12	1,09	1,06	1,11	4	1,09			0,03	2,58	96,39
10	08	6.3	31	1,10	1,08	1,10	1,10	4	1,10			0,01	0,91	96,55
11	06x	5.2	31	1,11	1,12	1,10	1,09	4	1,10			0,01	0,96	97,41
12	03x	3.10	31	1,08	1,13	1,09	1,15	4	1,11			0,03	2,97	98,09
13	17x	5.5	31	1,13	1,14	1,11	1,10	4	1,12			0,02	1,63	98,75
14	43x	4.1	31	1,12	1,13	1,12	1,12	4	1,12			0,00	0,45	98,97
15	26	5.1	35	1,03	1,20	1,13	1,17	4	1,13			0,07	6,54	99,85
16	52x	4.1	31	1,12	1,15	1,13	1,13	4	1,13			0,01	1,11	99,85
17	49	4.1	31	1,13	1,14	1,14	1,12	4	1,13			0,01	0,85	99,85
18	01x	3.21	50	1,15	1,12	1,12	1,15	4	1,14			0,02	1,53	100,08
19	61x	4.1	53.1	1,15	1,17	1,12	1,10	4	1,14			0,03	2,74	100,08
20	20x	5.1	31	1,16	1,16	1,13	1,13	4	1,14			0,02	1,61	100,72
21	48x	4.1	31	1,14	1,15	1,14	1,15	4	1,14			0,00	0,37	100,85
22	28	3.31	53.3	1,17	1,10	1,17	1,16	4	1,15			0,03	2,93	101,40
23	12x	5.1	31	1,19	1,14	1,14	1,13	4	1,15			0,03	2,40	101,49
24	40	5.7	31	1,15	1,16	1,17	1,15	4	1,16			0,01	0,83	102,06
25	19	3.5	31	1,16	1,14	1,16	1,18	4	1,16			0,02	1,41	102,28
26	44x	4.1	31	1,16	1,16	1,16	1,16	4	1,16			0,00	0,00	102,28
27	38x	4.5	31	1,16	1,15	1,16	1,19	4	1,17			0,02	1,49	102,72
28	35	3.21	53	1,17	1,17	1,16	1,17	4	1,17			0,00	0,43	102,94
29	42	4.1	31	1,17	1,17	1,17	1,17	4	1,17			0,00	0,24	103,07
30	56	5.5	31	1,14	1,18	1,16	1,21	4	1,17			0,03	2,55	103,38
31	50x	4.1	31	1,17	1,18	1,19	1,17	4	1,18			0,01	0,59	103,71
32	09x	5.5	31	1,19	1,17	1,20	1,17	4	1,19			0,01	1,19	104,48
33	37x	5.5	31	1,22	1,17	1,22	1,17	4	1,19			0,03	2,57	105,06
34	07x	5.5	31	1,21	1,18	1,19	1,20	4	1,20			0,01	1,08	105,37
35	02x	5.3	31	1,20	1,20	1,20	1,20	4	1,20			0,00	0,00	105,81
36	66	5.5	31	1,24	1,27	1,19	1,21	4	1,23			0,04	2,85	108,23
37	25x	5.1	31	1,23	1,22	1,24	1,25	4	1,24			0,01	1,05	108,89
38	38a	9.1	42	1,28	1,27	1,27	1,28	4	1,27			0,00	0,36	112,33
39	04	9.1	41	1,28	1,28	1,28	1,28	4	1,28			0,00	0,00	112,86
40	04a	9.1	42	*1,355a*	1,31	1,31	1,30	3	1,31		*	0,01	0,44	115,21
41	64x	6.5	53	*11,20*	*11,30*	*11,48*	*11,32*	0	11,33	b	*	0,12	1,02	998,55
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	N	Mean	SI	VI
all labs	159	**1,13**	**0,018**	**1,625**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: P **Sample: 3 (Beech Leaves - Croatia)** 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	05x	6.5	53.1	*0,93*	*0,91*	*0,91*	*0,89*	0	0,91	b	*	0,02	1,79	73,65
2	15	5.1	53	*1,03*	*1,04*	*1,01*	*1,06*	0	1,04	b	*	0,02	2,01	83,77
3	36x	3.3	53	1,09	1,10	1,10	1,06	4	1,09			0,02	1,74	88,02
4	46	5.2	31	*1,082a*	1,11	1,11	1,11	3	1,11			0,00	0,14	89,89
5	18x	3.31	31	1,19	1,13	1,17	1,12	4	1,15			0,03	2,55	93,28
6	33a	5.1	50	1,16	1,15	1,16	1,15	4	1,16			0,01	0,50	93,48
7	39x	5.5	31	1,17	1,17	1,17	1,16	4	1,17			0,00	0,43	94,49
8	13x	5.3	50	1,16	1,15	1,19	1,18	4	1,17			0,02	1,56	94,69
9	35	3.21	53	1,18	1,19	1,18	1,18	4	1,18			0,01	0,42	95,71
10	08	6.3	31	1,18	1,18	1,18	1,19	4	1,18			0,00	0,42	95,71
11	26	5.1	35	1,04	1,21	1,24	1,27	4	1,19			0,10	8,65	96,31
12	17x	5.5	31	1,21	1,21	1,20	1,24	4	1,22			0,02	1,43	98,34
13	61x	4.1	53.1	1,20	1,22	1,21	1,24	4	1,22			0,02	1,40	98,54
14	06x	5.2	31	1,22	1,22	1,24	1,22	4	1,22			0,01	0,71	98,92
15	43x	4.1	31	1,23	1,23	1,22	1,22	4	1,23			0,01	0,47	99,15
16	03x	3.10	31	1,20	1,26	1,18	1,26	4	1,23			0,04	3,37	99,15
17	47x	4.1	32	1,23	1,22	1,24	1,22	4	1,23			0,01	0,78	99,35
18	56	5.5	31	1,23	1,23	1,26	1,20	4	1,23			0,02	1,99	99,55
19	38x	4.5	31	1,24	1,23	1,26	1,25	4	1,25			0,01	1,04	100,76
20	49	4.1	31	1,23	1,23	1,27	1,26	4	1,25			0,02	1,65	100,97
21	04	9.1	41	1,25	1,25	1,25	1,25	4	1,25			0,00	0,00	101,17
22	52x	4.1	31	1,28	1,24	1,25	1,23	4	1,25			0,02	1,73	101,17
23	28	3.31	53.3	1,26	1,26	1,27	1,23	4	1,26			0,02	1,38	101,57
24	50x	4.1	31	1,24	1,27	1,26	1,26	4	1,26			0,01	1,08	101,57
25	38a	9.1	42	1,26	1,25	1,26	1,26	4	1,26			0,00	0,17	101,69
26	44x	4.1	31	1,28	1,26	1,24	1,26	4	1,26			0,02	1,30	101,98
27	12x	5.1	31	1,29	1,26	1,25	1,26	4	1,26			0,02	1,27	102,10
28	40	5.7	31	1,25	1,26	1,28	1,26	4	1,26			0,01	1,00	102,18
29	01x	3.21	50	1,26	1,26	1,22	1,32	4	1,27			0,04	3,26	102,38
30	48x	4.1	31	1,27	1,28	1,27	1,26	4	1,27			0,00	0,39	102,79
31	07x	5.5	31	1,29	1,27	1,27	1,26	4	1,27			0,01	0,99	102,99
32	20x	5.1	31	1,26	1,25	1,32	1,26	4	1,27			0,03	2,70	103,10
33	19	3.5	31	1,27	1,25	1,28	1,30	4	1,28			0,02	1,63	103,19
34	37x	5.5	31	1,26	1,27	1,30	1,28	4	1,28			0,01	1,06	103,37
35	04a	9.1	42	1,32	1,26	1,28	1,27	4	1,28			0,03	2,09	103,74
36	09x	5.5	31	1,28	1,27	1,28	1,30	4	1,28			0,01	0,74	103,82
37	42	4.1	31	1,29	1,28	1,28	1,29	4	1,28			0,01	0,45	103,88
38	02x	5.3	31	1,30	1,30	1,30	1,30	4	1,30			0,00	0,00	105,22
39	66	5.5	31	1,31	1,33	1,30	1,28	4	1,31			0,02	1,60	105,62
40	25x	5.1	31	1,35	1,32	1,36	1,29	4	1,33			0,03	2,38	107,64
41	64x	6.5	53	*12,60*	*12,40*	*12,90*	*12,73*	0	12,66	b	*	0,21	1,67	1024,44
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	N	Mean	SI	VI
all labs	151	**1,24**	**0,018**	**1,429**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: P **Sample: 4 (Ash Leaves - Belgium)** 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	05x	6.5	53.1	*1,87*	*1,90*	*1,77a*	*1,89*	0	1,88	b	*	0,02	0,81	79,93
2	15	5.1	53	*1,87*	*2,00*	*1,87*	*1,85*	0	1,90	b	*	0,07	3,64	80,60
3	46	5.2	31	2,16	2,09	2,14	2,14	4	2,13			0,03	1,37	90,51
4	33a	5.1	50	2,18	2,16	2,15	2,14	4	2,16			0,02	0,79	91,65
5	36x	3.3	53	2,16	2,13	2,20	2,15	4	2,16			0,03	1,36	91,75
6	38a	9.1	42	2,18	2,18	2,17	2,19	4	2,18			0,01	0,40	92,62
7	04a	9.1	42	2,25	2,15	2,18	2,18	4	2,19			0,04	1,83	92,97
8	18x	3.31	31	2,30	2,27	2,21	2,27	4	2,26			0,04	1,58	96,02
9	13x	5.3	50	2,22	2,26	2,25	2,32	4	2,26			0,04	1,85	96,11
10	39x	5.5	31	2,27	2,31	2,31	2,30	4	2,30			0,02	0,82	97,59
11	40	5.7	31	2,31	2,26	2,29	2,33	4	2,30			0,03	1,30	97,59
12	35	3.21	53	2,30	2,30	2,30	2,30	4	2,30			0,00	0,00	97,70
13	02x	5.3	31	2,30	2,30	2,30	2,30	4	2,30			0,00	0,00	97,70
14	06x	5.2	31	2,32	2,34	2,33	2,33	4	2,33			0,01	0,34	98,94
15	17x	5.5	31	2,37	2,33	2,34	2,31	4	2,34			0,03	1,07	99,29
16	38x	4.5	31	2,37	2,26	2,43	2,36	4	2,36			0,07	2,99	100,04
17	50x	4.1	31	2,35	2,33	2,37	2,37	4	2,36			0,02	0,80	100,04
18	37x	5.5	31	2,38	2,31	2,39	2,35	4	2,36			0,03	1,44	100,07
19	43x	4.1	31	2,37	2,34	2,34	2,39	4	2,36			0,02	1,04	100,25
20	12x	5.1	31	2,41	2,37	2,37	2,32	4	2,37			0,03	1,40	100,56
21	61x	4.1	53.1	2,39	2,35	2,36	2,37	4	2,37			0,02	0,72	100,57
22	04	9.1	41	2,37	2,37	2,37	2,37	4	2,37			0,00	0,00	100,67
23	56	5.5	31	2,32	2,46	2,36	2,34	4	2,37			0,06	2,62	100,67
24	20x	5.1	31	2,37	2,39	2,40	2,37	4	2,38			0,02	0,69	101,23
25	01x	3.21	50	2,30	2,44	2,37	2,44	4	2,39			0,07	2,81	101,42
26	08	6.3	31	2,40	2,39	2,39	2,39	4	2,39			0,00	0,21	101,63
27	09x	5.5	31	2,38	2,40	2,42	2,38	4	2,39			0,02	0,89	101,71
28	28	3.31	53.3	2,40	2,38	2,42	2,41	4	2,40			0,02	0,71	102,05
29	52x	4.1	31	2,44	2,41	2,39	2,39	4	2,41			0,02	0,98	102,27
30	03x	3.10	31	2,38	2,41	2,44	2,44	4	2,42			0,03	1,19	102,69
31	49	4.1	31	2,42	2,43	2,42	2,42	4	2,42			0,01	0,21	102,90
32	48x	4.1	31	2,37	2,40	2,49	2,45	4	2,43			0,05	2,22	103,09
33	07x	5.5	31	2,49	2,34	2,43	2,46	4	2,43			0,06	2,67	103,22
34	19	3.5	31	2,50	2,30	2,40	2,60	4	2,45			0,13	5,27	104,07
35	44x	4.1	31	2,47	2,50	2,47	2,48	4	2,48			0,01	0,57	105,34
36	25x	5.1	31	2,47	2,43	2,52	2,53	4	2,49			0,05	1,87	105,66
37	66	5.5	31	2,51	2,50	2,50	2,49	4	2,50			0,01	0,33	106,19
38	42	4.1	31	2,49	2,49	2,52	2,52	4	2,50			0,02	0,72	106,28
39	47x	4.1	32	2,55	2,52	2,51	2,49	4	2,52			0,02	0,99	106,94
40	26	5.1	35	*2,62*	*2,47*	*3,15*	*2,46*	0	2,68	c		0,33	12,15	113,63
41	64x	6.5	53	*24,21*	*24,45*	*24,33*	*24,36*	0	24,34	b	*	0,10	0,41	1033,80
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	N	Mean	SI	VI
all labs	148	**2,35**	**0,029**	**1,249**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Ca **Sample: 1 (Pine Needles - Finland)** 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	01x	3.21	21.1	1,90	2,00	1,90	2,00	4	1,95	*	0,06	2,96	74,27
2	05x	3.3	21.1	2,19	2,03	1,95	2,03	4	2,05	*	0,10	4,91	78,08
3	36x	3.3	21.1	2,06	2,08	2,06	2,09	4	2,07	*	0,01	0,63	78,94
4	46	5.2	31	2,14	2,12	2,10	2,13	4	2,12	*	0,01	0,68	80,75
5	07x	5.5	31	2,45	2,45	2,42	2,45	4	2,44		0,02	0,61	93,03
6	39x	5.5	31	2,47	2,45	2,47	2,44	4	2,46		0,02	0,61	93,60
7	60	3.3	31	2,52	2,43	2,43	2,55	4	2,48		0,06	2,49	94,56
8	61x	4.1	21.2	2,50	2,52	2,48	2,47	4	2,49		0,02	0,89	94,94
9	49	4.1	31	2,48	2,51	2,51	2,50	4	2,50		0,01	0,57	95,22
10	66	5.5	31	2,54	2,46	2,49	2,52	4	2,50		0,04	1,40	95,32
11	43x	4.1	31	2,54	2,53	2,50	2,45	4	2,51		0,04	1,61	95,41
12	47x	4.1	32	2,66	2,58	2,45	2,39	4	2,52		0,12	4,86	95,98
13	06x	5.2	31	2,56	2,56	2,52	2,52	4	2,54		0,02	0,91	96,75
14	56	5.5	31	2,56	2,52	2,55	2,59	4	2,56		0,03	1,13	97,32
15	12x	5.1	31	2,67	2,60	2,49	2,54	4	2,58		0,08	3,07	98,10
16	52x	4.1	31	2,60	2,61	2,58	2,59	4	2,60		0,01	0,50	98,84
17	33a	5.1	21	2,61	2,64	2,55	2,59	4	2,60		0,04	1,45	98,94
18	17x	5.5	31	2,66	2,62	2,58	2,56	4	2,61		0,04	1,70	99,22
19	08	6.3	31	2,63	2,61	2,61	2,60	4	2,61		0,01	0,48	99,51
20	40	5.7	31	2,64	2,63	2,65	2,61	4	2,63		0,02	0,65	100,27
21	42	4.1	31	2,61	2,64	2,64	2,66	4	2,63		0,02	0,78	100,35
22	13x	5.3	21.1	2,78	2,45	2,70	2,61	4	2,64		0,14	5,37	100,37
23	44x	4.1	31	2,65	2,64	2,61	2,66	4	2,64		0,02	0,82	100,56
24	02x	5.3	31	2,70	2,60	2,60	2,70	4	2,65		0,06	2,18	100,94
25	18x	3.31	31	2,68	2,65	2,65	2,64	4	2,65		0,02	0,72	100,99
26	03x	3.10	31	2,64	2,66	2,63	2,68	4	2,65		0,02	0,84	101,03
27	64x	6.5	28	2,83	2,78	2,54	2,54	4	2,67		0,15	5,78	101,79
28	20x	5.1	31	2,70	2,67	2,68	2,66	4	2,67		0,02	0,58	101,88
29	38	4.5	31	2,82	2,67	2,66	2,68	4	2,71		0,08	2,79	103,13
30	09x	5.5	31	2,78	2,63	2,68	2,81	4	2,73		0,08	3,04	103,79
31	50x	4.1	31	2,71	2,77	2,72	2,74	4	2,73		0,02	0,85	104,16
32	28	3.31	21.1	2,74	2,74	2,73	2,73	4	2,74		0,01	0,21	104,17
33	37x	5.5	31	2,76	2,81	2,76	2,65	4	2,75		0,07	2,43	104,64
34	48x	4.1	31	2,76	2,78	2,80	2,74	4	2,77		0,02	0,89	105,49
35	38a	9.1	42	2,80	2,80	2,77	2,80	4	2,79		0,01	0,41	106,31
36	04	9.1	41	2,79	2,80	2,81	2,83	4	2,81		0,02	0,61	106,94
37	04a	9.1	42	2,85	2,82	2,90	2,83	4	2,85		0,03	1,15	108,49
38	15	5.1	21.1	3,01	2,93	3,08	3,12	4	3,04	*	0,08	2,75	115,60
39	19	3.5	31	3,10	3,10	3,20	3,10	4	3,13	*	0,05	1,60	119,03
40	26	5.1	31	3,31	2,83	3,46	3,25	4	3,21	*	0,27	8,40	122,36
41	25x	5.1	31	3,52	3,27	3,25	3,50	4	3,39	*	0,14	4,28	128,93
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	N	Mean	SI	VI
all labs	164	**2,63**	**0,051**	**1,958**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Ca **Sample: 2 (Spruce needles - Germany)** 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	01x	3.21	21.1	1,90	*1,8a*	1,90	1,90	3	1,90	*	0,00	0,00	75,84
2	05x	3.3	21.1	1,97	1,92	1,88	1,95	4	1,93	*	0,04	2,03	77,04
3	46	5.2	31	2,03	2,01	2,04	1,97	4	2,01	*	0,03	1,66	80,25
4	36x	3.3	21.1	2,04	2,02	2,04	2,03	4	2,03	*	0,01	0,51	81,05
5	43x	4.1	31	2,34	2,36	2,33	2,39	4	2,36		0,03	1,12	94,00
6	47x	4.1	32	2,47	2,36	2,32	2,29	4	2,36		0,08	3,34	94,20
7	06x	5.2	31	2,40	2,40	2,41	2,36	4	2,39		0,02	0,93	95,50
8	13x	5.3	21.1	2,29	2,36	2,37	2,56	4	2,40		0,12	4,83	95,60
9	39x	5.5	31	2,40	2,38	2,40	2,40	4	2,40		0,01	0,42	95,60
10	37x	5.5	31	2,38	2,44	2,44	2,33	4	2,40		0,05	2,19	95,74
11	15	5.1	21.1	2,46	2,48	2,39	2,27	4	2,40		0,09	3,95	95,80
12	64x	6.5	28	2,46	2,36	2,38	2,40	4	2,40		0,04	1,80	95,80
13	61x	4.1	21.2	2,44	2,41	2,40	2,41	4	2,42		0,02	0,72	96,40
14	07x	5.5	31	2,44	2,43	2,45	2,45	4	2,44		0,01	0,39	97,49
15	49	4.1	31	2,46	2,49	2,42	2,42	4	2,45		0,03	1,39	97,69
16	12x	5.1	31	2,56	2,47	2,44	2,40	4	2,47		0,07	2,67	98,42
17	52x	4.1	31	2,47	2,47	2,48	2,49	4	2,48		0,01	0,39	98,89
18	60	3.3	31	2,51	2,49	2,47	2,47	4	2,49		0,02	0,77	99,19
19	56	5.5	31	2,39	2,48	2,58	2,55	4	2,50		0,08	3,38	99,79
20	08	6.3	31	2,51	2,47	2,53	2,52	4	2,51		0,03	1,05	100,09
21	40	5.7	31	2,53	2,49	2,48	2,54	4	2,51		0,03	1,17	100,19
22	66	5.5	31	2,49	2,52	2,48	2,60	4	2,52		0,05	2,16	100,69
23	18x	3.31	31	2,55	2,53	2,51	2,55	4	2,54		0,02	0,81	101,26
24	33a	5.1	21	2,54	2,54	2,55	2,53	4	2,54		0,01	0,32	101,39
25	42	4.1	31	2,54	2,55	2,55	2,54	4	2,54		0,01	0,25	101,57
26	20x	5.1	31	2,58	2,57	2,54	2,52	4	2,55		0,03	1,12	101,83
27	44x	4.1	31	2,53	2,56	2,53	2,61	4	2,56		0,04	1,48	102,08
28	02x	5.3	31	2,70	2,50	2,50	2,60	4	2,58		0,10	3,72	102,78
29	38	4.5	31	2,54	2,57	2,62	2,58	4	2,58		0,03	1,28	102,88
30	09x	5.5	31	2,63	2,64	2,56	2,55	4	2,59		0,05	1,78	103,49
31	50x	4.1	31	2,61	2,59	2,62	2,64	4	2,61		0,02	0,76	104,32
32	03x	3.10	31	2,61	2,63	2,61	2,62	4	2,62		0,01	0,37	104,48
33	28	3.31	21.1	2,66	2,59	2,63	2,60	4	2,62		0,03	1,21	104,58
34	48x	4.1	31	2,65	2,65	2,63	2,65	4	2,64		0,01	0,37	105,52
35	04a	9.1	42	2,66	2,64	2,67	2,69	4	2,66		0,02	0,89	106,31
36	17x	5.5	31	2,70	2,69	2,65	2,62	4	2,67		0,04	1,39	106,38
37	38a	9.1	42	2,72	2,72	2,74	2,72	4	2,72		0,01	0,30	108,74
38	04	9.1	41	2,76	2,77	2,75	2,75	4	2,76		0,01	0,35	110,07
39	26	5.1	31	3,08	3,02	2,93	2,88	4	2,98	*	0,09	3,01	118,85
40	25x	5.1	31	3,05	2,90	2,92	3,10	4	2,99	*	0,10	3,27	119,45
41	19	3.5	31	3,10	3,20	3,00	3,00	4	3,08	*	0,10	3,11	122,74
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	N	Mean	SI	VI
all labs	163	**2,51**	**0,039**	**1,544**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Ca **Sample: 3 (Beech Leaves - Croatia)** 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	46	5.2	31	5,95	5,89	5,95	5,93	4	5,93	*	0,03	0,50	82,80
2	01x	3.21	21.1	5,90	5,90	6,00	6,00	4	5,95	*	0,06	0,97	83,04
3	05x	3.3	21.1	6,30	6,05	6,15	6,25	4	6,19		0,11	1,79	86,36
4	36x	3.3	21.1	6,31	6,35	6,42	6,33	4	6,35		0,05	0,73	88,64
5	07x	5.5	31	6,74	6,73	6,75	6,68	4	6,73		0,03	0,46	93,86
6	39x	5.5	31	6,84	6,81	6,84	6,86	4	6,84		0,02	0,30	95,43
7	18x	3.31	31	7,04	6,89	6,99	6,63	4	6,89		0,18	2,62	96,11
8	06x	5.2	31	6,86	6,83	6,95	6,91	4	6,89		0,05	0,77	96,13
9	61x	4.1	21.2	6,90	6,61	6,64	7,44	4	6,90		0,38	5,57	96,27
10	49	4.1	31	6,81	6,84	7,15	6,92	4	6,93		0,15	2,22	96,72
11	12x	5.1	31	7,13	6,96	6,87	6,87	4	6,95		0,12	1,76	97,05
12	37x	5.5	31	6,84	6,95	7,05	7,05	4	6,97		0,10	1,45	97,33
13	44x	4.1	31	7,03	6,99	6,98	6,97	4	6,99		0,03	0,38	97,59
14	43x	4.1	31	7,25	6,93	6,94	6,91	4	7,01		0,16	2,31	97,80
15	52x	4.1	31	7,00	7,10	7,00	6,99	4	7,02		0,05	0,74	98,01
16	04a	9.1	42	7,06	6,97	7,05	7,06	4	7,03		0,04	0,64	98,14
17	60	3.3	31	6,91	7,11	7,16	7,07	4	7,06		0,11	1,53	98,57
18	56	5.5	31	7,20	7,10	7,04	7,01	4	7,09		0,08	1,18	98,92
19	64x	6.5	28	7,03	7,20	7,11	7,09	4	7,11		0,07	0,98	99,19
20	38	4.5	31	7,15	7,14	7,05	7,22	4	7,14		0,07	0,98	99,65
21	38a	9.1	42	7,17	7,19	7,14	7,19	4	7,17		0,02	0,30	100,12
22	40	5.7	31	7,21	7,11	7,12	7,28	4	7,18		0,08	1,12	100,21
23	66	5.5	31	7,20	7,19	7,15	7,29	4	7,21		0,06	0,82	100,59
24	33a	5.1	21	7,29	7,60	7,05	6,90	4	7,21		0,31	4,24	100,63
25	47x	4.1	32	7,20	7,14	7,40	7,15	4	7,16		0,03	0,45	99,98
26	42	4.1	31	7,28	7,28	7,38	7,40	4	7,33		0,06	0,88	102,36
27	50x	4.1	31	7,37	7,32	7,28	7,38	4	7,34		0,05	0,64	102,39
28	17x	5.5	31	7,37	7,53	7,25	7,20	4	7,34		0,15	2,00	102,41
29	28	3.31	21.1	7,42	7,56	7,45	6,96	4	7,35		0,27	3,61	102,55
30	13x	5.3	21.1	7,31	7,26	7,33	7,54	4	7,36		0,12	1,68	102,72
31	08	6.3	31	7,36	7,37	7,53	7,35	4	7,36		0,01	0,14	102,72
32	04	9.1	41	7,50	7,50	7,48	7,49	4	7,49		0,01	0,13	104,57
33	48x	4.1	31	7,47	7,61	7,43	7,53	4	7,51		0,08	1,01	104,82
34	20x	5.1	31	7,30	7,36	7,91	7,50	4	7,52		0,27	3,62	104,94
35	03x	3.10	31	7,42	7,60	7,48	7,72	4	7,56		0,13	1,76	105,44
36	26	5.1	31	*9,62a*	7,78	7,32	7,77	3	7,62		0,26	3,45	106,40
37	02x	5.3	31	7,80	7,60	7,80	7,90	4	7,78		0,13	1,62	108,51
38	09x	5.5	31	8,05	8,01	7,80	7,81	4	7,92		0,13	1,65	110,51
39	25x	5.1	31	8,04	8,10	7,82	7,80	4	7,94		0,15	1,92	110,82
40	19	3.5	31	8,10	8,10	8,00	8,10	4	8,08		0,05	0,62	112,70
41	15	5.1	21.1	8,68	8,48	8,57	8,45	4	8,55	*	0,10	1,21	119,26
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	N	Mean	SI	VI
all labs	163	**7,16**	**0,107**	**1,491**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Ca **Sample: 4 (Ash Leaves - Belgium)** 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	05x	3.3	21.1	15,45	15,45	15,15	14,80	4	15,21	0,31	2,03	87,13
2	36x	3.3	21.1	15,98	15,94	16,01	15,91	4	15,96	0,04	0,28	91,41
3	13x	5.3	21.1	16,33	16,19	16,36	16,48	4	16,34	0,12	0,73	93,59
4	46	5.2	31	16,48	16,10	16,40	16,44	4	16,36	0,17	1,06	93,67
5	07x	5.5	31	16,70	15,70	16,40	16,70	4	16,38	0,47	2,88	93,79
6	15	5.1	21.1	16,50	16,80	16,40	16,50	4	16,55	0,17	1,05	94,79
7	06x	5.2	31	16,50	16,50	16,40	16,90	4	16,58	0,22	1,34	94,93
8	43x	4.1	31	16,75	16,72	16,33	16,74	4	16,64	0,20	1,22	95,28
9	12x	5.1	31	17,00	16,67	16,41	16,56	4	16,66	0,25	1,49	95,42
10	39x	5.5	31	16,68	16,70	16,62	16,75	4	16,69	0,05	0,32	95,58
11	01x	3.21	21.1	16,80	16,60	16,70	16,70	4	16,70	0,08	0,49	95,65
12	49	4.1	31	16,73	16,87	17,06	16,81	4	16,87	0,14	0,83	96,61
13	38	4.5	31	16,59	17,48	17,00	16,78	4	16,96	0,38	2,26	97,15
14	52x	4.1	31	16,96	16,99	16,99	17,00	4	16,99	0,02	0,10	97,28
15	60	3.3	31	17,09	17,08	17,29	16,85	4	17,08	0,18	1,05	97,81
16	56	5.5	31	17,24	17,16	17,02	17,13	4	17,14	0,09	0,53	98,15
17	44x	4.1	31	17,10	17,21	17,38	17,14	4	17,21	0,12	0,72	98,55
18	18x	3.31	31	17,40	17,07	17,16	17,36	4	17,25	0,16	0,93	98,79
19	61x	4.1	21.2	17,40	18,57	15,54	17,67	4	17,30	1,27	7,36	99,06
20	64x	6.5	28	17,89	16,99	17,25	17,09	4	17,31	0,40	2,34	99,11
21	50x	4.1	31	17,51	17,25	17,25	17,25	4	17,32	0,13	0,75	99,17
22	37x	5.5	31	17,38	17,48	17,16	17,32	4	17,34	0,13	0,77	99,30
23	47x	4.1	32	17,58	17,55	17,70	17,69	4	17,63	0,08	0,43	100,97
24	66	5.5	31	17,50	17,20	17,90	18,20	4	17,70	0,44	2,48	101,38
25	48x	4.1	31	17,80	17,73	17,69	17,64	4	17,72	0,07	0,38	101,46
26	28	3.31	21.1	18,01	17,60	17,56	17,73	4	17,73	0,20	1,15	101,52
27	40	5.7	31	17,70	17,60	17,90	18,10	4	17,83	0,22	1,24	102,09
28	09x	5.5	31	18,31	17,94	17,60	17,80	4	17,91	0,30	1,67	102,59
29	42	4.1	31	18,18	18,10	17,64	18,10	4	18,00	0,25	1,37	103,12
30	33a	5.1	21	18,06	18,77	17,77	17,46	4	18,02	0,56	3,11	103,18
31	08	6.3	31	18,30	18,20	18,20	18,20	4	18,23	0,05	0,27	104,38
32	17x	5.5	31	18,56	18,40	17,94	18,03	4	18,23	0,30	1,62	104,43
33	02x	5.3	31	18,20	18,40	18,10	18,30	4	18,25	0,13	0,71	104,53
34	04a	9.1	42	18,21	18,07	18,64	18,11	4	18,26	0,26	1,43	104,57
35	38a	9.1	42	18,48	18,61	18,31	18,31	4	18,43	0,15	0,79	105,54
36	25x	5.1	31	18,50	18,90	18,30	18,20	4	18,48	0,31	1,68	105,81
37	03x	3.10	31	17,83	19,67	19,39	18,17	4	18,77	0,90	4,80	107,48
38	04	9.1	41	18,73	18,86	18,84	18,88	4	18,83	0,07	0,36	107,83
39	20x	5.1	31	19,03	19,04	18,96	18,68	4	18,93	0,17	0,89	108,41
40	19	3.5	31	19,00	19,00	18,90	18,90	4	18,95	0,06	0,30	108,54
41	26	5.1	31	17,80	21,00	18,50	19,50	4	19,20	1,39	7,23	109,97
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	N	Mean	SI	VI
all labs	164	**17,46**	**0,269**	**1,540**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Mg **Sample: 1 (Pine Needles - Finland)** 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	05x	3.3	21.1	*0,65*	*0,65*	*0,65*	*0,65*	0	0,65	b	*	0,00	0,00	70,38
2	04	9.1	41	*0,6a*	*0,68*	*0,68*	*0,68*	0	0,68	b	*	0,00	0,00	73,63
3	36x	5.5	31	0,77	0,76	0,78	0,76	4	0,77		*	0,01	1,25	83,11
4	46	5.2	31	0,79	0,79	0,79	0,80	4	0,79			0,00	0,55	85,95
5	61x	4.1	21.1	0,85	0,85	0,83	0,81	4	0,84			0,02	2,29	90,42
6	15	5.1	21.1	0,84	0,85	0,87	0,87	4	0,86			0,01	1,75	92,85
7	01x	3.21	21.1	0,85	0,86	0,87	0,89	4	0,87			0,02	1,97	93,94
8	60	3.3	31	0,87	0,84	0,84	0,92	4	0,87			0,04	4,35	93,94
9	39x	5.5	31	0,88	0,89	0,89	0,89	4	0,89			0,00	0,56	96,10
10	49	4.1	31	0,89	0,90	0,88	0,89	4	0,89			0,01	0,92	96,37
11	56	5.5	31	0,91	0,88	0,88	0,90	4	0,89			0,01	1,42	96,48
12	12x	5.1	31	0,92	0,90	0,87	0,88	4	0,89			0,02	2,64	96,56
13	33a	5.1	21	0,90	0,90	0,90	0,89	4	0,90			0,00	0,56	97,18
14	28	3.31	21.1	0,89	0,90	0,88	0,93	4	0,90			0,02	2,40	97,45
15	02x	5.3	31	0,90	0,90	0,90	0,90	4	0,90			0,00	0,00	97,45
16	64x	6.5	28	0,89	0,92	0,92	0,90	4	0,91			0,02	1,72	98,29
17	26	5.1	31	0,90	0,91	0,85	1,00	4	0,91			0,06	6,74	98,86
18	03x	3.10	31	0,91	0,92	0,91	0,93	4	0,92			0,01	1,04	99,35
19	07x	5.5	31	0,92	0,92	0,92	0,92	4	0,92			0,00	0,19	99,43
20	08	6.3	31	0,93	0,92	0,92	0,91	4	0,92			0,01	0,60	99,67
21	66	5.5	31	0,93	0,93	0,91	0,92	4	0,92			0,01	1,10	100,00
22	48x	4.1	31	0,94	0,90	0,93	0,93	4	0,92			0,01	1,57	100,04
23	17x	5.5	31	0,97	0,85	0,94	0,94	4	0,93			0,05	5,62	100,16
24	52x	4.1	31	0,93	0,92	0,93	0,93	4	0,93			0,00	0,52	100,30
25	18x	3.31	31	0,93	0,93	0,93	0,93	4	0,93			0,00	0,31	100,57
26	43x	4.1	31	0,94	0,93	0,93	0,92	4	0,93			0,01	0,88	100,70
27	40	5.7	31	0,93	0,93	0,93	0,94	4	0,93			0,00	0,53	100,87
28	42	4.1	31	0,94	0,94	0,94	0,94	4	0,94			0,00	0,41	101,98
29	44x	4.1	31	0,94	0,94	0,95	0,94	4	0,94			0,00	0,53	102,06
30	37x	5.5	31	0,93	0,95	0,96	0,96	4	0,95			0,01	1,10	102,54
31	20x	5.1	31	0,95	0,95	0,95	0,95	4	0,95			0,00	0,36	102,63
32	06x	5.2	31	0,95	0,96	0,95	0,95	4	0,95			0,00	0,53	102,90
33	50x	4.1	31	0,95	0,95	0,94	0,96	4	0,95			0,01	0,85	103,00
34	38x	4.5	31	0,99	0,95	0,93	0,94	4	0,95			0,03	2,76	103,14
35	09x	5.5	31	0,98	0,96	0,93	0,95	4	0,96			0,02	1,97	103,41
36	47x	4.1	32	0,96	0,96	0,96	0,99	4	0,97			0,02	1,55	104,76
37	38a	9.1	42	0,98	0,97	0,98	0,98	4	0,98			0,01	0,76	105,63
38	13x	5.3	21.1	0,98	0,98	0,98	0,99	4	0,98			0,01	0,51	106,39
39	19	3.5	31	1,07	1,03	1,10	1,01	4	1,05			0,04	3,83	113,97
40	04a	9.1	42	1,12	1,05	1,04	1,02	4	1,06			0,04	3,88	114,32
41	25x	5.1	31	1,09	1,03	1,17	1,04	4	1,08		*	0,06	5,91	117,22
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	N	Mean	SI	VI
all labs	156	**0,92**	**0,016**	**1,732**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Mg **Sample: 2 (Spruce needles - Germany)** 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	04	9.1	41	*0,17*	*0,19a*	*0,17*	*0,17*	0	0,17	b	*	0,00	0,00	38,38
2	05x	3.3	21.1	*0,34*	*0,34*	*0,33*	*0,33*	0	0,34	b	*	0,01	1,72	75,63
3	46	5.2	31	0,36	0,36	0,37	0,36	4	0,36		*	0,00	1,28	82,26
4	36x	5.5	31	0,37	0,39	0,36	0,36	4	0,37		*	0,01	3,82	83,53
5	01x	3.21	21.1	0,36	0,39	0,41	0,38	4	0,39			0,02	5,41	86,92
6	02x	5.3	31	0,40	0,40	0,40	0,40	4	0,40			0,00	0,00	90,31
7	61x	4.1	21.1	0,42	0,40	0,39	0,40	4	0,40			0,01	3,13	90,87
8	15	5.1	21.1	0,42	0,42	0,39	0,40	4	0,41			0,01	3,68	92,00
9	26	5.1	31	0,42	0,43	0,42	0,42	4	0,42			0,00	0,83	95,44
10	56	5.5	31	0,44	0,42	0,42	0,43	4	0,43			0,01	1,81	96,29
11	64x	6.5	28	0,43	0,42	0,43	0,43	4	0,43			0,00	0,89	96,85
12	06x	5.2	31	0,43	0,44	0,43	0,42	4	0,43			0,01	1,43	97,36
13	39x	5.5	31	0,43	0,44	0,43	0,43	4	0,43			0,00	1,16	97,64
14	12x	5.1	31	0,45	0,43	0,43	0,43	4	0,43			0,01	2,33	98,15
15	17x	5.5	31	0,45	0,44	0,43	0,43	4	0,44			0,01	2,19	98,77
16	33a	5.1	21	0,43	0,44	0,44	0,44	4	0,44			0,00	1,14	98,77
17	43x	4.1	31	0,44	0,44	0,43	0,44	4	0,44			0,00	1,14	98,77
18	08	6.3	31	0,44	0,43	0,44	0,44	4	0,44			0,01	1,15	99,22
19	38x	4.5	31	0,44	0,44	0,44	0,44	4	0,44			0,00	0,00	99,34
20	60	3.3	31	0,45	0,44	0,44	0,43	4	0,44			0,01	1,86	99,34
21	48x	4.1	31	0,44	0,44	0,44	0,44	4	0,44			0,00	0,87	99,45
22	52x	4.1	31	0,44	0,44	0,45	0,45	4	0,44			0,00	0,59	100,18
23	42	4.1	31	0,44	0,45	0,45	0,44	4	0,45			0,00	0,32	100,47
24	47x	4.1	32	0,45	0,44	0,43	0,46	4	0,45			0,01	2,90	100,47
25	18x	3.31	31	0,45	0,45	0,44	0,45	4	0,45			0,00	1,02	100,97
26	49	4.1	31	0,45	0,45	0,45	0,44	4	0,45			0,01	1,12	101,03
27	03x	3.10	31	0,44	0,45	0,45	0,45	4	0,45			0,01	1,12	101,03
28	37x	5.5	31	0,45	0,45	0,46	0,45	4	0,45			0,01	1,23	101,09
29	66	5.5	31	0,46	0,45	0,45	0,45	4	0,45			0,00	0,90	102,05
30	50x	4.1	31	0,45	0,45	0,46	0,46	4	0,46			0,01	1,37	102,72
31	44x	4.1	31	0,45	0,45	0,47	0,46	4	0,46			0,01	2,09	103,29
32	20x	5.1	31	0,47	0,46	0,45	0,45	4	0,46			0,01	1,91	103,46
33	07x	5.5	31	0,47	0,46	0,46	0,46	4	0,46			0,00	0,74	103,91
34	28	3.31	21.1	0,46	0,45	0,47	0,47	4	0,46			0,01	2,07	104,42
35	13x	5.3	21.1	0,47	0,48	0,48	0,49	4	0,48			0,01	1,70	108,37
36	09x	5.5	31	0,48	0,49	0,48	0,49	4	0,48			0,01	1,14	108,54
37	38a	9.1	42	0,49	0,48	0,48	0,48	4	0,48			0,00	1,04	108,87
38	04a	9.1	42	0,52	0,49	0,48	0,48	4	0,49			0,02	3,68	110,34
39	40	5.7	31	0,49	0,49	0,49	0,50	4	0,49			0,00	1,01	110,74
40	25x	5.1	31	0,50	0,49	0,49	0,50	4	0,49			0,01	1,17	111,64
41	19	3.5	31	0,51	0,50	0,51	0,52	4	0,51		*	0,01	1,60	115,14
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	N	Mean	SI	VI
all labs	156	**0,44**	**0,007**	**1,588**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Mg **Sample: 3 (Beech Leaves - Croatia)** 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	05x	3.3	21.1	*1,8a*	1,95	1,95	1,95	3	1,95	*	0,00	0,00	76,59
2	28	3.31	21.1	2,09	2,06	2,12	1,93	4	2,05	*	0,08	4,08	80,52
3	38a	9.1	42	2,25	2,25	2,24	2,25	4	2,25		0,01	0,25	88,26
4	01x	3.21	21.1	2,27	2,21	2,25	2,26	4	2,25		0,03	1,17	88,28
5	04a	9.1	42	2,34	2,24	2,23	2,24	4	2,26		0,05	2,38	88,77
6	04	9.1	41	2,27	2,25	2,25	2,28	4	2,26		0,02	0,66	88,86
7	46	5.2	31	2,31	2,31	2,35	2,34	4	2,32		0,02	0,94	91,31
8	61x	4.1	21.1	2,37	2,36	2,34	2,38	4	2,36		0,02	0,72	92,79
9	15	5.1	21.1	2,43	2,38	2,42	2,55	4	2,45		0,07	3,00	96,03
10	36x	5.5	31	2,44	2,45	2,47	2,44	4	2,45		0,01	0,58	96,23
11	17x	5.5	31	2,48	2,50	2,45	2,44	4	2,47		0,03	1,12	96,92
12	33a	5.1	21	2,49	2,58	2,45	2,44	4	2,49		0,06	2,56	97,80
13	18x	3.31	31	2,56	2,48	2,57	2,39	4	2,50		0,08	3,33	98,16
14	49	4.1	31	2,46	2,49	2,53	2,54	4	2,51		0,04	1,48	98,39
15	44x	4.1	31	2,55	2,53	2,49	2,52	4	2,52		0,02	0,99	99,08
16	39x	5.5	31	2,53	2,55	2,53	2,51	4	2,53		0,02	0,65	99,37
17	56	5.5	31	2,54	2,56	2,54	2,49	4	2,53		0,03	1,18	99,47
18	12x	5.1	31	2,58	2,57	2,52	2,51	4	2,54		0,04	1,50	99,89
19	60	3.3	31	2,50	2,60	2,60	2,56	4	2,57		0,05	1,84	100,75
20	37x	5.5	31	2,56	2,54	2,59	2,58	4	2,57		0,02	0,90	100,78
21	38x	4.5	31	2,57	2,54	2,56	2,61	4	2,57		0,03	1,15	100,94
22	02x	5.3	31	2,60	2,50	2,60	2,60	4	2,58		0,05	1,94	101,14
23	08	6.3	31	2,58	2,57	2,59	2,58	4	2,58		0,01	0,32	101,34
24	07x	5.5	31	2,60	2,60	2,58	2,56	4	2,59		0,02	0,74	101,53
25	09x	5.5	31	2,64	2,59	2,56	2,60	4	2,60		0,03	1,24	101,94
26	13x	5.3	21.1	2,54	2,60	2,59	2,66	4	2,60		0,05	1,90	102,02
27	40	5.7	31	2,61	2,59	2,62	2,63	4	2,61		0,02	0,65	102,61
28	52x	4.1	31	2,61	2,62	2,65	2,63	4	2,63		0,02	0,65	103,20
29	06x	5.2	31	2,66	2,65	2,70	2,65	4	2,67		0,02	0,86	104,70
30	50x	4.1	31	2,61	2,66	2,75	2,67	4	2,67		0,06	2,10	104,91
31	43x	4.1	31	2,73	2,67	2,67	2,63	4	2,68		0,04	1,54	105,07
32	48x	4.1	31	2,67	2,72	2,72	2,68	4	2,70		0,02	0,85	105,93
33	47x	4.1	32	2,69	2,64	2,80	2,68	4	2,70		0,07	2,53	106,15
34	42	4.1	31	2,68	2,71	2,71	2,74	4	2,71		0,02	0,84	106,39
35	26	5.1	31	2,71	2,74	2,70	2,70	4	2,71		0,02	0,70	106,54
36	03x	3.10	31	2,66	2,76	2,71	2,75	4	2,72		0,05	1,67	106,83
37	20x	5.1	31	2,68	2,69	2,85	2,72	4	2,73		0,08	2,90	107,39
38	64x	6.5	28	2,67	2,79	2,77	2,71	4	2,74		0,05	1,86	107,42
39	66	5.5	31	2,74	2,83	2,72	2,71	4	2,75		0,05	1,99	108,01
40	25x	5.1	31	2,78	2,71	2,85	2,82	4	2,79		0,06	2,17	109,58
41	19	3.5	31	2,90	3,00	3,20	3,35	4	3,11	*	0,20	6,48	122,25
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	N	Mean	SI	VI
all labs	163	**2,55**	**0,041**	**1,600**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Mg **Sample: 4 (Ash Leaves - Belgium)** 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	05x	3.3	21.1	2,60	2,40	2,50	2,40	4	2,48	*	0,10	3,87	74,71
2	28	3.31	21.1	2,69	2,64	2,62	2,64	4	2,65	*	0,03	1,13	79,92
3	61x	4.1	21.1	2,91	3,00	2,98	3,01	4	2,98		0,05	1,52	89,81
4	36x	5.5	31	3,00	2,99	3,02	3,01	4	3,01		0,01	0,43	90,71
5	17x	5.5	31	3,06	3,02	3,00	2,96	4	3,01		0,04	1,38	90,87
6	01x	3.21	21.1	3,06	3,07	3,05	3,09	4	3,07		0,02	0,56	92,60
7	13x	5.3	21.1	3,13	3,11	3,11	3,18	4	3,13		0,03	1,05	94,56
8	60	3.3	31	3,22	3,13	3,16	3,11	4	3,16		0,05	1,52	95,24
9	56	5.5	31	3,14	3,12	3,20	3,16	4	3,16		0,03	1,08	95,24
10	40	5.7	31	3,12	3,11	3,17	3,28	4	3,17		0,08	2,46	95,70
11	49	4.1	31	3,18	3,20	3,21	3,15	4	3,19		0,03	0,83	96,15
12	37x	5.5	31	3,20	3,21	3,20	3,23	4	3,21		0,02	0,47	96,87
13	38x	4.5	31	3,23	3,14	3,31	3,17	4	3,21		0,07	2,33	96,98
14	26	5.1	31	3,30	3,09	3,48	2,99	4	3,22		0,22	6,81	97,05
15	07x	5.5	31	3,26	3,06	3,27	3,31	4	3,23		0,11	3,48	97,36
16	15	5.1	21.1	3,25	3,19	3,24	3,23	4	3,23		0,03	0,81	97,43
17	46	5.2	31	3,32	3,22	3,22	3,25	4	3,25		0,05	1,47	98,18
18	39x	5.5	31	3,27	3,26	3,21	3,27	4	3,25		0,03	0,88	98,19
19	06x	5.2	31	3,24	3,24	3,23	3,32	4	3,25		0,04	1,27	98,24
20	12x	5.1	31	3,33	3,28	3,16	3,25	4	3,26		0,07	2,16	98,31
21	43x	4.1	31	3,30	3,30	3,21	3,31	4	3,28		0,05	1,43	99,02
22	52x	4.1	31	3,27	3,19	3,27	3,39	4	3,28		0,08	2,51	99,02
23	18x	3.31	31	3,29	3,29	3,28	3,33	4	3,30		0,02	0,66	99,52
24	48x	4.1	31	3,34	3,32	3,28	3,25	4	3,30		0,04	1,22	99,54
25	44x	4.1	31	3,30	3,36	3,33	3,33	4	3,33		0,02	0,74	100,53
26	04	9.1	41	3,35	3,32	3,38	3,34	4	3,35		0,02	0,75	101,05
27	50x	4.1	31	3,35	3,34	3,32	3,39	4	3,35		0,03	0,92	101,11
28	08	6.3	31	3,36	3,35	3,38	3,38	4	3,37		0,02	0,45	101,66
29	33a	5.1	21	3,29	3,24	3,52	3,50	4	3,39		0,14	4,23	102,26
30	47x	4.1	32	3,48	3,40	3,43	3,41	4	3,43		0,04	1,04	103,54
31	66	5.5	31	3,53	3,40	3,44	3,48	4	3,46		0,06	1,61	104,53
32	25x	5.1	31	3,54	3,58	3,47	3,41	4	3,50		0,08	2,15	105,66
33	42	4.1	31	3,50	3,53	3,55	3,49	4	3,52		0,03	0,79	106,16
34	09x	5.5	31	3,57	3,49	3,50	3,55	4	3,53		0,04	1,07	106,45
35	02x	5.3	31	3,60	3,60	3,50	3,60	4	3,58		0,05	1,40	107,92
36	64x	6.5	28	3,75	3,44	3,59	3,65	4	3,61		0,13	3,54	108,95
37	03x	3.10	31	3,38	3,82	3,74	3,62	4	3,64		0,19	5,27	109,88
38	20x	5.1	31	3,80	3,78	3,69	3,67	4	3,74		0,06	1,65	112,77
39	04a	9.1	42	3,98	3,77	3,83	3,73	4	3,83	*	0,11	2,84	115,53
40	38a	9.1	42	3,82	3,88	3,82	3,88	4	3,85	*	0,03	0,90	116,27
41	19	3.5	31	3,90	4,00	4,20	4,40	4	4,13	*	0,22	5,38	124,52
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	N	Mean	SI	VI
all labs	164	**3,31**	**0,062**	**1,881**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: K **Sample: 1 (Pine Needles - Finland)** 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	05x	3.3	21.1	5,00	5,00	5,20	5,05	4	5,06		0,09	1,87	86,90
2	64x	6.5	28	5,47	5,29	5,22	5,33	4	5,33		0,11	1,98	91,45
3	26	5.1	31	5,48	5,55	5,20	5,15	4	5,35		0,20	3,73	91,75
4	36x	3.3	28	5,40	5,36	5,35	5,31	4	5,36		0,04	0,69	91,92
5	61x	4.1	28	5,41	5,45	5,36	5,29	4	5,38		0,07	1,28	92,31
6	46	5.2	31	5,51	5,32	5,39	5,41	4	5,41		0,08	1,52	92,79
7	39x	5.5	31	5,46	5,42	5,46	5,41	4	5,44		0,03	0,48	93,34
8	15	5.1	21	5,41	5,49	5,46	5,43	4	5,45		0,04	0,64	93,51
9	12x	5.1	31	5,48	5,61	5,56	5,70	4	5,59		0,09	1,68	95,93
10	35	3.21	28	5,64	5,65	5,65	5,65	4	5,65		0,01	0,09	96,94
11	06x	5.2	31	5,66	5,68	5,68	5,66	4	5,67		0,01	0,20	97,33
12	52x	4.1	31	5,71	5,67	5,70	5,70	4	5,70		0,02	0,30	97,76
13	33a	5.1	28	5,85	5,74	5,67	5,55	4	5,70		0,13	2,21	97,89
14	04	9.1	41	5,72	5,72	5,70	5,74	4	5,72		0,02	0,29	98,19
15	17x	5.5	31	5,86	5,68	5,70	5,64	4	5,72		0,10	1,69	98,19
16	28	3.31	21.1	5,75	5,75	5,71	5,68	4	5,72		0,03	0,59	98,23
17	50x	4.1	31	5,72	5,75	5,67	5,76	4	5,72		0,04	0,69	98,23
18	02x	5.3	31	5,80	5,70	5,70	5,70	4	5,73		0,05	0,87	98,27
19	60	3.3	31	5,89	5,66	5,60	5,91	4	5,77		0,16	2,74	98,96
20	18x	3.31	31	5,83	5,72	5,78	5,76	4	5,77		0,05	0,79	99,07
21	08	6.3	31	5,85	5,80	5,74	5,75	4	5,79		0,05	0,88	99,30
22	44x	4.1	31	5,80	5,76	5,80	5,79	4	5,79		0,02	0,33	99,35
23	40	5.7	31	5,81	5,79	5,78	5,80	4	5,80		0,01	0,22	99,47
24	38a	9.1	42	5,83	5,79	5,81	5,81	4	5,81		0,02	0,30	99,73
25	37x	5.5	31	5,95	5,84	5,82	5,84	4	5,86		0,06	0,98	100,59
26	47x	4.1	32	5,87	5,86	5,84	5,87	4	5,86		0,01	0,24	100,59
27	49	4.1	31	5,89	5,86	5,78	5,92	4	5,86		0,06	1,03	100,63
28	43x	4.1	31	6,00	5,90	5,87	5,80	4	5,89		0,08	1,41	101,15
29	56	5.5	31	6,00	5,85	5,92	5,91	4	5,92		0,06	1,04	101,62
30	66	5.5	31	6,07	6,07	5,79	5,76	4	5,92		0,17	2,88	101,66
31	03x	3.10	31	5,89	5,99	5,92	6,00	4	5,95		0,05	0,90	102,13
32	25x	5.1	31	5,90	6,04	5,94	5,96	4	5,96		0,06	0,99	102,31
33	42	4.1	31	6,03	6,04	6,03	6,04	4	6,03		0,01	0,13	103,55
34	20x	5.1	31	5,95	6,17	5,86	6,16	4	6,04		0,16	2,57	103,63
35	48x	4.1	31	6,21	6,14	6,18	6,07	4	6,15		0,06	0,96	105,55
36	38x	4.5	31	6,42	6,19	6,07	6,02	4	6,18		0,18	2,89	106,00
37	07x	5.5	31	6,16	6,17	6,24	6,19	4	6,19		0,04	0,57	106,25
38	04a	9.1	42	6,14	6,28	6,33	6,26	4	6,25		0,08	1,29	107,33
39	09x	5.5	31	6,14	6,21	6,32	6,42	4	6,27		0,12	1,98	107,64
40	19	3.5	31	6,30	6,70	6,30	6,10	4	6,35		0,25	3,96	109,00
41	01x	3.21	21.1	6,60	6,80	7,00	6,70	4	6,78	*	0,17	2,52	116,30
42	13x	5.3	21.1	6,73	6,79	6,92	6,89	4	6,83	*	0,09	1,29	117,28
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	N	Mean	SI	VI
all labs	168	**5,83**	**0,075**	**1,289**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: K **Sample: 2 (Spruce needles - Germany)** 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	05x	3.3	21.1	5,25	4,95	5,20	4,85	4	5,06			0,19	3,81	86,50
2	64x	6.5	28	5,47	5,27	5,28	5,28	4	5,33			0,10	1,82	90,98
3	15	5.1	21	5,34	5,34	5,27	5,41	4	5,34			0,06	1,07	91,24
4	26	5.1	31	5,36	5,43	5,32	5,33	4	5,36			0,05	0,93	91,58
5	46	5.2	31	5,39	5,54	5,32	5,25	4	5,37			0,12	2,33	91,79
6	36x	3.3	28	5,47	5,45	5,50	5,51	4	5,48			0,03	0,50	93,68
7	61x	4.1	28	5,65	5,68	5,38	5,39	4	5,53			0,16	2,94	94,40
8	39x	5.5	31	5,57	5,57	5,58	5,60	4	5,58			0,01	0,25	95,34
9	28	3.31	21.1	5,73	5,26	5,66	5,92	4	5,64			0,28	4,92	96,41
10	06x	5.2	31	5,73	5,75	5,66	5,58	4	5,68			0,08	1,36	97,05
11	37x	5.5	31	5,61	5,72	5,72	5,77	4	5,71			0,07	1,17	97,51
12	18x	3.31	31	5,80	5,72	5,63	5,71	4	5,71			0,07	1,16	97,64
13	35	3.21	28	5,70	5,71	5,75	5,72	4	5,72			0,02	0,38	97,73
14	50x	4.1	31	5,75	5,70	5,77	5,79	4	5,75			0,04	0,66	98,27
15	12x	5.1	31	5,71	5,73	5,79	5,83	4	5,77			0,06	0,98	98,52
16	52x	4.1	31	5,81	5,81	5,79	5,78	4	5,80			0,01	0,26	99,06
17	47x	4.1	32	5,90	5,75	5,72	5,89	4	5,82			0,09	1,60	99,36
18	44x	4.1	31	5,81	5,85	5,86	5,84	4	5,84			0,02	0,37	99,78
19	08	6.3	31	5,89	5,77	5,86	5,90	4	5,86			0,06	1,01	100,04
20	17x	5.5	31	5,95	5,94	5,83	5,78	4	5,88			0,08	1,42	100,38
21	02x	5.3	31	6,10	5,80	5,80	5,80	4	5,88			0,15	2,55	100,38
22	33a	5.1	28	5,94	5,84	5,90	5,91	4	5,90			0,04	0,71	100,77
23	38a	9.1	42	5,90	5,89	5,90	5,91	4	5,90			0,01	0,11	100,81
24	40	5.7	31	5,98	5,95	5,86	5,81	4	5,90			0,08	1,33	100,81
25	60	3.3	31	5,97	5,86	5,87	5,94	4	5,91			0,05	0,91	100,98
26	25x	5.1	31	5,88	5,84	5,90	6,10	4	5,93			0,12	1,96	101,32
27	03x	3.10	31	5,90	5,98	5,94	6,04	4	5,97			0,06	1,00	101,92
28	04a	9.1	42	5,88	5,99	6,01	6,01	4	5,97			0,06	1,03	102,01
29	56	5.5	31	5,97	5,93	5,91	6,12	4	5,98			0,09	1,59	102,22
30	04	9.1	41	5,97	6,01	5,96	6,00	4	5,99			0,02	0,40	102,26
31	43x	4.1	31	5,91	6,05	6,03	5,99	4	6,00			0,06	1,03	102,43
32	49	4.1	31	6,05	6,07	6,03	5,91	4	6,02			0,07	1,20	102,77
33	42	4.1	31	6,09	6,03	6,06	6,06	4	6,06			0,02	0,37	103,53
34	07x	5.5	31	6,17	6,06	6,03	6,10	4	6,09			0,06	0,99	104,06
35	38x	4.5	31	6,02	6,05	6,28	6,15	4	6,13			0,12	1,92	104,65
36	66	5.5	31	6,20	6,25	6,04	6,05	4	6,14			0,11	1,73	104,82
37	48x	4.1	31	6,17	6,20	6,18	6,23	4	6,20			0,02	0,39	105,85
38	20x	5.1	31	6,31	6,35	6,31	6,08	4	6,26			0,12	1,98	106,98
39	09x	5.5	31	6,25	6,23	6,48	6,46	4	6,36			0,13	2,09	108,61
40	19	3.5	31	6,40	6,60	6,50	6,30	4	6,45			0,13	2,00	110,21
41	01x	3.21	21.1	6,40	6,70	6,80	7,10	4	6,75		*	0,29	4,28	115,33
42	13x	5.3	21.1	*6,91*	*6,86*	*7,03*	*6,95*	0	6,94	b	*	0,07	1,04	118,54
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	N	Mean	SI	VI
all labs	164	**5,85**	**0,084**	**1,428**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: K **Sample: 3 (Beech Leaves - Croatia)** 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	05x	3.3	21.1	4,55	4,30	4,15	3,95	4	4,24	*	0,25	5,97	80,73
2	46	5.2	31	4,75	4,65	4,63	4,75	4	4,69		0,06	1,32	89,43
3	61x	4.1	28	4,89	4,80	4,75	4,77	4	4,80		0,06	1,29	91,50
4	15	5.1	21	4,75	4,78	4,89	4,81	4	4,81		0,06	1,25	91,59
5	36x	3.3	28	4,85	4,81	4,83	4,85	4	4,84		0,02	0,40	92,12
6	39x	5.5	31	4,87	4,84	4,83	4,82	4	4,84		0,02	0,45	92,21
7	18x	3.31	31	4,99	4,91	5,06	4,79	4	4,94		0,11	2,32	94,06
8	52x	4.1	31	5,00	4,99	5,01	5,05	4	5,01		0,03	0,52	95,50
9	38a	9.1	42	4,99	5,03	5,05	5,04	4	5,03		0,03	0,59	95,78
10	04	9.1	41	5,04	5,03	5,02	5,05	4	5,04		0,01	0,26	95,93
11	37x	5.5	31	4,95	5,05	5,05	5,10	4	5,04		0,06	1,25	95,97
12	44x	4.1	31	5,14	5,03	4,94	5,04	4	5,04		0,08	1,62	95,98
13	12x	5.1	31	5,04	4,87	5,10	5,26	4	5,07		0,16	3,22	96,54
14	06x	5.2	31	5,12	5,04	5,14	5,03	4	5,08		0,06	1,09	96,83
15	28	3.31	21.1	5,15	5,02	5,15	5,10	4	5,11		0,06	1,20	97,26
16	08	6.3	31	5,13	5,13	5,12	5,12	4	5,13		0,01	0,11	97,64
17	17x	5.5	31	5,15	5,17	5,07	5,16	4	5,14		0,05	0,89	97,88
18	33a	5.1	28	5,16	5,15	5,16	5,14	4	5,15		0,01	0,19	98,17
19	25x	5.1	31	5,13	5,58	5,11	4,83	4	5,16		0,31	6,01	98,36
20	04a	9.1	42	5,13	5,24	5,26	5,26	4	5,22		0,06	1,18	99,46
21	38x	4.5	31	5,29	5,18	5,25	5,21	4	5,23		0,05	0,91	99,69
22	56	5.5	31	5,25	5,22	5,33	5,17	4	5,24		0,07	1,28	99,88
23	42	4.1	31	5,27	5,26	5,21	5,25	4	5,25		0,03	0,52	99,94
24	49	4.1	31	5,29	5,32	5,19	5,27	4	5,27		0,06	1,06	100,36
25	47x	4.1	32	5,28	5,24	5,36	5,20	4	5,27		0,07	1,30	100,41
26	43x	4.1	31	5,29	5,31	5,39	5,27	4	5,32		0,05	0,99	101,26
27	02x	5.3	31	5,20	5,30	5,40	5,50	4	5,35		0,13	2,41	101,93
28	64x	6.5	28	5,45	5,29	5,30	5,40	4	5,36		0,08	1,45	102,12
29	66	5.5	31	5,51	5,51	5,27	5,20	4	5,37		0,16	3,00	102,36
30	03x	3.10	31	5,31	5,47	5,30	5,46	4	5,39		0,09	1,72	102,60
31	50x	4.1	31	5,31	5,37	5,50	5,38	4	5,39		0,08	1,49	102,67
32	07x	5.5	31	5,47	5,44	5,39	5,36	4	5,42		0,05	0,91	103,17
33	48x	4.1	31	5,45	5,44	5,51	5,45	4	5,46		0,03	0,58	104,02
34	60	3.3	31	5,51	5,47	5,47	5,57	4	5,51		0,05	0,86	104,88
35	09x	5.5	31	5,51	5,49	5,49	5,63	4	5,53		0,07	1,28	105,30
36	19	3.5	31	5,60	5,30	5,50	5,80	4	5,55		0,21	3,75	105,74
37	26	5.1	31	5,60	5,66	5,55	5,54	4	5,59		0,06	0,98	106,45
38	35	3.21	28	5,64	5,64	5,63	5,64	4	5,64		0,00	0,09	107,41
39	40	5.7	31	5,66	5,72	5,85	5,66	4	5,72		0,09	1,57	109,03
40	20x	5.1	31	5,71	5,48	6,05	5,87	4	5,78		0,24	4,20	110,05
41	13x	5.3	21.1	6,12	6,20	6,21	6,40	4	6,23	*	0,12	1,90	118,74
42	01x	3.21	21.1	6,20	6,50	6,10	6,20	4	6,25	*	0,17	2,77	119,08
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	N	Mean	SI	VI
all labs	168	**5,25**	**0,083**	**1,574**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: K **Sample: 4 (Ash Leaves - Belgium)** 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	40	5.7	31	*14,30*	*14,50*	*14,30*	*14,40*	0	14,38	b	*	0,10	0,67	77,03
2	05x	3.3	21.1	16,10	16,15	16,60	15,85	4	16,18			0,31	1,93	86,68
3	61x	4.1	28	17,79	17,05	17,40	16,83	4	17,27			0,42	2,43	92,53
4	26	5.1	31	18,30	17,20	16,80	17,00	4	17,33			0,67	3,87	92,84
5	38a	9.1	42	17,52	17,17	17,53	17,94	4	17,54			0,31	1,80	93,99
6	50x	4.1	31	17,49	17,69	17,60	17,50	4	17,57			0,09	0,54	94,15
7	39x	5.5	31	17,45	17,88	17,65	17,69	4	17,67			0,18	1,00	94,67
8	06x	5.2	31	17,60	17,60	17,70	17,80	4	17,68			0,10	0,54	94,71
9	43x	4.1	31	17,63	17,66	17,94	17,69	4	17,73			0,14	0,80	95,01
10	46	5.2	31	17,70	17,80	18,02	18,08	4	17,90			0,18	1,00	95,92
11	42	4.1	31	18,13	18,22	17,50	18,53	4	18,10			0,43	2,40	96,97
12	37x	5.5	31	18,02	18,12	18,19	18,07	4	18,10			0,07	0,40	96,99
13	28	3.31	21.1	18,28	18,23	18,07	18,43	4	18,25			0,15	0,81	97,81
14	44x	4.1	31	18,13	18,57	18,17	18,29	4	18,29			0,20	1,09	98,01
15	04a	9.1	42	18,09	18,22	18,33	18,56	4	18,30			0,20	1,09	98,06
16	36x	3.3	28	18,50	18,37	18,25	18,40	4	18,38			0,10	0,56	98,49
17	52x	4.1	31	19,00	19,11	17,99	18,00	4	18,53			0,61	3,31	99,27
18	18x	3.31	31	18,99	18,76	18,55	18,32	4	18,66			0,29	1,54	99,97
19	38x	4.5	31	18,64	17,78	19,17	19,06	4	18,66			0,63	3,38	100,01
20	47x	4.1	32	18,71	18,81	18,77	18,59	4	18,72			0,10	0,51	100,31
21	08	6.3	31	19,00	18,70	18,70	18,60	4	18,75			0,17	0,92	100,47
22	66	5.5	31	18,90	19,00	18,50	18,60	4	18,75			0,24	1,27	100,47
23	04	9.1	41	18,82	18,87	18,83	18,88	4	18,85			0,03	0,16	101,01
24	02x	5.3	31	18,80	18,50	19,10	19,00	4	18,85			0,26	1,40	101,01
25	15	5.1	21	18,90	17,80	19,40	19,40	4	18,88			0,75	4,00	101,14
26	49	4.1	31	18,62	18,66	18,89	19,55	4	18,93			0,43	2,27	101,44
27	12x	5.1	31	17,50	18,00	19,40	20,90	4	18,95			1,53	8,07	101,55
28	64x	6.5	28	19,95	18,95	18,56	18,77	4	19,06			0,62	3,23	102,12
29	09x	5.5	31	18,76	18,44	19,29	19,82	4	19,08			0,61	3,19	102,23
30	56	5.5	31	19,17	19,08	19,27	19,02	4	19,14			0,11	0,57	102,54
31	48x	4.1	31	18,81	18,89	19,65	19,40	4	19,19			0,40	2,11	102,82
32	07x	5.5	31	19,30	18,30	19,40	19,80	4	19,20			0,64	3,32	102,89
33	35	3.21	28	19,22	19,34	19,41	19,31	4	19,32			0,08	0,41	103,53
34	60	3.3	31	19,54	19,31	19,14	19,40	4	19,35			0,17	0,87	103,68
35	25x	5.1	31	19,80	19,60	19,30	18,70	4	19,35			0,48	2,48	103,69
36	33a	5.1	28	19,26	19,07	19,92	19,23	4	19,37			0,38	1,94	103,80
37	17x	5.5	31	19,55	19,47	19,39	19,20	4	19,40			0,15	0,77	103,97
38	20x	5.1	31	19,75	19,71	20,13	20,19	4	19,94			0,25	1,27	106,88
39	03x	3.10	31	19,29	19,64	20,50	20,84	4	20,07			0,72	3,61	107,53
40	19	3.5	31	20,50	20,50	20,40	20,40	4	20,45			0,06	0,28	109,58
41	13x	5.3	21.1	20,56	20,71	20,57	21,21	4	20,76			0,31	1,47	111,26
42	01x	3.21	21.1	*22,80*	*23,00*	*23,40*	*22,90*	0	23,03	b	*	0,26	1,14	123,38
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	N	Mean	SI	VI
all labs	160	**18,66**	**0,339**	**1,819**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Zn **Sample: 1 (Pine Needles - Finland)** 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	36,50	35,00	35,50	36,60	4	35,90			0,78	2,17	86,02
2	52x	4.1	31	37,80	36,00	37,10	36,30	4	36,80			0,81	2,21	88,18
3	46	5.2	31	37,40	37,30	37,30	38,00	4	37,50			0,34	0,90	89,86
4	13	5.3	21.1	39,76	38,24	39,36	38,85	4	39,05			0,66	1,68	93,58
5	06x	5.2	31	39,60	39,80	39,30	39,00	4	39,43			0,35	0,89	94,47
6	02x	5.3	31	40,20	38,90	39,50	39,30	4	39,48			0,54	1,38	94,59
7	07x	5.5	31	39,60	40,30	41,10	38,20	4	39,80			1,23	3,09	95,37
8	60	3.3	31	40,14	39,38	38,58	41,60	4	39,93			1,29	3,22	95,67
9	39x	5.5	35	40,99	40,56	40,79	39,82	4	40,54			0,51	1,26	97,14
10	44x	4.1	32	40,41	40,95	40,70	40,69	4	40,69			0,22	0,54	97,50
11	33a	5.1	21	39,00	41,00	43,00	40,00	4	40,75			1,71	4,19	97,65
12	48x	4.1	31	41,19	40,22	40,95	40,73	4	40,77			0,41	1,01	97,70
13	66	5.5	31	42,20	41,20	40,00	39,70	4	40,78			1,15	2,82	97,71
14	18x	3.31	31	40,73	40,18	41,82	40,51	4	40,81			0,71	1,74	97,79
15	42	4.1	31	41,03	40,60	40,82	41,14	4	40,90			0,24	0,58	98,00
16	12	5.1	31	*47,8a*	41,56	40,20	41,14	3	40,97			0,70	1,70	98,16
17	26	5.1	31	43,10	43,00	40,00	39,60	4	41,43			1,88	4,55	99,26
18	28	3.1	21.1	42,00	41,00	43,00	41,00	4	41,75			0,96	2,29	100,04
19	08	6.3	31	41,80	42,20	41,60	41,40	4	41,75			0,34	0,82	100,04
20	50x	4.1	31	42,01	42,87	41,53	42,16	4	42,14			0,55	1,32	100,98
21	03x	3.10	31	42,10	42,40	42,40	43,20	4	42,53			0,47	1,11	101,90
22	37x	5.5	35	43,70	43,30	41,90	41,40	4	42,58			1,10	2,58	102,02
23	47x	4.1	32	43,73	42,51	42,01	42,17	4	42,61			0,78	1,83	102,09
24	49	4.1	31	42,06	43,17	42,10	44,11	4	42,86			0,98	2,28	102,70
25	17x	5.5	31	43,95	43,51	42,71	43,27	4	43,36			0,52	1,19	103,90
26	09x	5.5	31	43,19	43,55	43,50	43,54	4	43,45			0,17	0,39	104,10
27	64x	6.5	21.1	43,18	43,71	43,48	43,55	4	43,48			0,22	0,51	104,19
28	38x	4.5	31	44,60	43,50	42,60	43,80	4	43,63			0,83	1,89	104,53
29	04a	9.1	42	43,46	44,41	43,59	44,43	4	43,97			0,52	1,18	105,37
30	56	5.5	31	43,90	45,10	44,90	44,10	4	44,50			0,59	1,32	106,63
31	38a	9.1	42	45,40	45,10	44,80	45,20	4	45,13			0,25	0,55	108,13
32	04	9.1	41	44,80	45,00	46,60	46,60	4	45,75			0,98	2,15	109,63
33	01x	3.21	21.1	48,00	50,00	40,00	46,00	4	46,00			4,32	9,39	110,23
34	43x	4.1	31	50,00	50,00	44,00	47,00	4	47,75			2,87	6,02	114,42
35	05x	3.3	21.1	*57,50*	*52,50*	*47,50*	*52,50*	0	52,50	b	*	4,08	7,78	125,80
36	25x	5.1	31	*87,40*	*83,50*	*87,10*	*82,80*	0	85,20	b	*	2,39	2,80	204,16
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	N	Mean	SI	VI
all labs	135	**41,73**	**0,882**	**2,113**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Zn **Sample: 2 (Spruce needles - Germany)** 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	52x	4.1	31	12,30	12,90	13,10	13,20	4	12,88		*	0,40	3,13	77,73
2	36x	5.5	31	13,20	13,00	13,50	12,90	4	13,15		*	0,26	2,01	79,39
3	13	5.3	21.1	13,77	12,43	13,65	15,27	4	13,78		*	1,16	8,44	83,19
4	33a	5.1	21	14,40	13,80	14,60	16,90	4	14,93			1,36	9,11	90,10
5	07x	5.5	31	15,10	15,10	15,10	15,10	4	15,10			0,00	0,00	91,16
6	06x	5.2	31	15,10	15,70	15,10	15,00	4	15,23			0,32	2,10	91,91
7	28	3.1	21.1	15,00	16,00	15,00	16,00	4	15,50			0,58	3,72	93,57
8	18x	3.31	31	16,26	15,40	15,30	15,19	4	15,54			0,49	3,15	93,80
9	48x	4.1	31	16,01	16,08	16,14	16,02	4	16,06			0,06	0,37	96,97
10	60	3.3	31	15,08	16,99	16,27	16,00	4	16,09			0,79	4,91	97,11
11	39x	5.5	35	16,09	16,15	16,26	15,99	4	16,12			0,11	0,70	97,33
12	08	6.3	31	16,90	15,70	15,90	16,60	4	16,28			0,57	3,49	98,25
13	47x	4.1	32	16,49	16,13	16,18	16,48	4	16,32			0,19	1,17	98,52
14	37x	5.5	35	15,70	16,80	16,30	16,50	4	16,33			0,46	2,85	98,55
15	44x	4.1	32	16,13	16,59	16,30	16,34	4	16,34			0,19	1,16	98,65
16	38x	4.5	31	16,70	16,20	16,50	16,60	4	16,50			0,22	1,31	99,61
17	02x	5.3	31	18,40	16,00	15,90	16,20	4	16,63			1,19	7,16	100,37
18	66	5.5	31	16,80	17,00	16,10	16,60	4	16,63			0,39	2,32	100,37
19	04a	9.1	42	16,06	16,67	17,00	16,84	4	16,64			0,41	2,47	100,47
20	50x	4.1	31	16,60	16,85	16,98	17,08	4	16,88			0,21	1,23	101,89
21	12	5.1	31	17,58	16,54	16,95	16,55	4	16,91			0,49	2,89	102,06
22	42	4.1	31	15,66	15,55	18,56	18,45	4	17,06			1,68	9,82	102,96
23	64x	6.5	21.1	17,07	16,54	17,07	17,61	4	17,07			0,44	2,56	103,07
24	26	5.1	31	17,20	17,30	17,00	17,30	4	17,20			0,14	0,82	103,84
25	17x	5.5	31	17,54	17,18	17,95	17,28	4	17,49			0,34	1,97	105,57
26	09x	5.5	31	17,74	17,27	17,92	17,17	4	17,53			0,36	2,07	105,80
27	38a	9.1	42	17,80	17,90	17,40	17,30	4	17,60			0,29	1,67	106,25
28	03x	3.10	31	18,00	17,30	18,80	17,70	4	17,95			0,64	3,54	108,37
29	04	9.1	41	18,60	18,00	18,80	18,80	4	18,55			0,38	2,04	111,99
30	49	4.1	31	17,78	19,34	18,13	19,04	4	18,57			0,74	3,97	112,12
31	56	5.5	31	20,50	17,90	22,40	19,20	4	20,00		*	1,92	9,60	120,74
32	43x	4.1	31	21,00	19,00	25,00	20,00	4	21,25		*	2,63	12,38	128,29
33	01x	3.21	21.1	*24,00*	*26,00*	*26,00*	*28,00*	0	26,00	b	*	1,63	6,28	156,96
34	25x	5.1	31	*33,40*	*34,30*	*31,20*	*30,30*	0	32,30	b	*	1,86	5,77	195,00
35	05x	3.3	21.1	*45,00*	*45,00*	*42,50*	*52,50*	0	46,25	b	*	4,33	9,36	279,21
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38	46	5.2	31	<15	<15	<15	15,00							
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	N	Mean	SI	VI
all labs	128	**16,56**	**0,607**	**3,662**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Zn **Sample: 3 (Beech Leaves - Croatia)** 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	52x	4.1	31	20,20	21,50	18,20	19,30	4	19,80		*	1,40	7,06	75,85
2	36x	5.5	31	21,20	22,10	21,50	21,50	4	21,58		*	0,38	1,75	82,65
3	07x	5.5	31	23,00	22,80	23,40	22,70	4	22,98			0,31	1,35	88,01
4	18x	3.31	31	24,50	23,00	24,17	22,25	4	23,48			1,04	4,44	89,95
5	06x	5.2	31	23,80	23,80	23,90	23,90	4	23,85			0,06	0,24	91,36
6	04a	9.1	42	24,24	24,42	24,09	23,83	4	24,15			0,25	1,03	92,49
7	46	5.2	31	24,30	24,60	24,70	24,00	4	24,40			0,32	1,30	93,47
8	08	6.3	31	24,50	24,70	24,80	24,40	4	24,60			0,18	0,74	94,24
9	02x	5.3	31	24,80	24,20	24,80	24,70	4	24,63			0,29	1,17	94,33
10	47x	4.1	32	24,60	24,52	25,24	24,49	4	24,71			0,35	1,44	94,67
11	13	5.3	21.1	24,32	26,57	24,74	24,12	4	24,94			1,12	4,49	95,53
12	39x	5.5	35	24,85	24,77	25,26	25,00	4	24,97			0,22	0,86	95,65
13	44x	4.1	32	24,84	25,12	25,55	25,17	4	25,17			0,29	1,16	96,42
14	42	4.1	31	25,60	25,70	24,30	25,50	4	25,28			0,66	2,59	96,82
15	60	3.3	31	25,80	25,12	25,25	25,71	4	25,47			0,34	1,32	97,57
16	66	5.5	31	25,70	26,20	25,00	25,10	4	25,50			0,56	2,20	97,68
17	50x	4.1	31	25,96	25,76	26,35	25,88	4	25,99			0,26	0,98	99,55
18	12	5.1	31	26,43	25,96	25,88	26,02	4	26,07			0,25	0,94	99,88
19	38x	4.5	31	25,30	25,90	25,70	28,10	4	26,25			1,26	4,79	100,56
20	17x	5.5	31	25,84	27,01	26,18	26,74	4	26,44			0,53	2,00	101,29
21	37x	5.5	35	26,80	25,30	27,70	26,50	4	26,58			0,99	3,73	101,80
22	09x	5.5	31	26,63	26,88	26,86	26,15	4	26,63			0,34	1,27	102,01
23	48x	4.1	31	26,22	26,38	26,58	27,42	4	26,65			0,53	2,00	102,09
24	38a	9.1	42	27,20	27,50	26,50	26,70	4	26,98			0,46	1,70	103,33
25	04	9.1	41	27,10	27,30	28,20	28,00	4	27,65			0,53	1,93	105,92
26	28	3.1	21.1	27,00	29,00	27,00	28,00	4	27,75			0,96	3,45	106,30
27	26	5.1	31	28,30	27,90	28,40	27,30	4	27,98			0,50	1,78	107,17
28	56	5.5	31	28,80	27,60	24,60	31,60	4	28,15			2,90	10,30	107,84
29	49	4.1	31	28,02	29,30	28,25	27,07	4	28,16			0,92	3,25	107,87
30	33a	5.1	21	24,00	29,00	30,00	31,00	4	28,50			3,11	10,91	109,18
31	03x	3.10	31	27,80	28,80	28,00	29,60	4	28,55			0,82	2,88	109,37
32	43x	4.1	31	27,00	29,00	29,00	35,00	4	30,00			3,46	11,55	114,92
33	64x	6.5	21.1	31,45	29,30	31,32	30,93	4	30,75		*	0,99	3,22	117,80
34	01x	3.21	21.1	30,00	32,00	36,00	34,00	4	33,00		*	2,58	7,82	126,42
35	05x	3.3	21.1	*52,50*	*47,50*	*45,00*	*57,50*	0	50,63	b	*	5,54	10,95	193,93
36	25x	5.1	31	*126,00*	*135,00*	*126,00*	*130,00*	0	129,25	b	*	4,27	3,31	495,13
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	N	Mean	SI	VI
all labs	136	**26,10**	**0,857**	**3,283**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Zn **Sample: 4 (Ash Leaves - Belgium)** 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	24,40	26,20	24,50	26,00	4	25,28			0,96	3,79	86,15
2	52x	4.1	31	26,10	26,10	25,00	25,00	4	25,55			0,64	2,49	87,09
3	02x	5.3	31	26,30	25,90	25,70	25,60	4	25,88			0,31	1,20	88,20
4	07x	5.5	31	26,50	24,80	26,00	26,40	4	25,93			0,78	3,01	88,37
5	06x	5.2	31	26,20	26,80	27,10	28,00	4	27,03			0,75	2,78	92,11
6	60	3.3	31	27,60	27,64	28,73	26,22	4	27,55			1,03	3,73	93,90
7	39x	5.5	35	27,82	27,38	27,46	28,09	4	27,69			0,33	1,19	94,37
8	46	5.2	31	27,40	27,80	27,90	28,70	4	27,95			0,54	1,95	95,27
9	42	4.1	31	28,30	27,90	28,10	28,10	4	28,10			0,16	0,58	95,78
10	18x	3.31	31	30,00	27,62	27,08	27,95	4	28,16			1,28	4,53	95,99
11	26	5.1	31	30,20	28,20	27,20	28,00	4	28,40			1,28	4,49	96,80
12	66	5.5	31	30,20	29,60	27,60	27,50	4	28,73			1,38	4,80	97,91
13	04a	9.1	42	29,12	27,72	29,49	28,78	4	28,78			0,76	2,65	98,09
14	09x	5.5	31	28,10	29,33	28,98	28,76	4	28,79			0,52	1,80	98,14
15	13	5.3	21.1	28,29	28,14	29,47	29,36	4	28,82			0,70	2,42	98,22
16	38x	4.5	31	29,60	26,90	30,20	28,90	4	28,90			1,44	4,97	98,51
17	50x	4.1	31	28,90	28,81	28,62	29,28	4	28,90			0,28	0,96	98,51
18	08	6.3	31	28,90	28,90	29,40	29,50	4	29,18			0,32	1,10	99,44
19	38a	9.1	42	29,20	29,10	29,70	29,60	4	29,40			0,29	1,00	100,21
20	12	5.1	31	29,69	30,60	30,67	27,59	4	29,64			1,44	4,85	101,02
21	37x	5.5	35	30,90	29,20	29,60	28,90	4	29,65			0,88	2,97	101,06
22	47x	4.1	32	30,66	30,64	29,67	28,89	4	29,97			0,85	2,85	102,14
23	17x	5.5	31	29,91	30,17	29,78	30,12	4	30,00			0,18	0,61	102,24
24	33a	5.1	21	26,00	30,00	33,00	31,00	4	30,00			2,94	9,81	102,26
25	48x	4.1	31	30,71	29,67	30,80	30,53	4	30,43			0,52	1,70	103,71
26	44x	4.1	32	30,59	31,44	30,48	30,84	4	30,84			0,43	1,39	105,11
27	56	5.5	31	32,10	30,70	30,80	31,50	4	31,28			0,66	2,09	106,60
28	43x	4.1	31	30,00	31,00	34,00	31,00	4	31,50			1,73	5,50	107,37
29	04	9.1	41	31,90	32,10	32,90	33,00	4	32,48			0,56	1,71	110,69
30	49	4.1	31	32,69	33,53	33,77	30,10	4	32,52			1,68	5,17	110,85
31	03x	3.10	31	30,30	33,90	32,50	33,80	4	32,63			1,68	5,14	111,20
32	64x	6.5	21.1	33,20	33,30	33,28	33,30	4	33,27			0,05	0,14	113,40
33	28	3.1	21.1	39,00	32,00	33,00	36,00	4	35,00		*	3,16	9,04	119,30
34	01x	3.21	21.1	*34,00*	*36,00*	*38,00*	*40,00*	0	37,00	b	*	2,58	6,98	126,11
35	25x	5.1	31	*62,90*	*57,90*	*56,00*	*58,40*	0	58,80	b	*	2,92	4,97	200,42
36	05x	3.3	21.1	*62,50*	*62,50*	*65,00*	*55,00*	0	61,25	b	*	4,33	7,07	208,77
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	N	Mean	SI	VI
all labs	132	**29,34**	**0,924**	**3,149**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Mn **Sample: 1 (Pine Needles - Finland)** 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	*141,50*	*142,10*	*142,90*	*141,40*	0	141,98	b *	0,69	0,49	77,34
2	49	4.1	31	153,83	154,62	153,63	153,63	4	153,93	*	0,47	0,31	83,85
3	05x	3.3	21.1	155,00	155,00	155,00	155,00	4	155,00	*	0,00	0,00	84,44
4	01x	3.21	21.1	164,00	166,00	162,00	168,00	4	165,00		2,58	1,56	89,88
5	07x	5.5	31	169,00	168,00	169,00	167,00	4	168,25		0,96	0,57	91,66
6	06x	5.2	31	170,00	172,00	170,00	170,00	4	170,50		1,00	0,59	92,88
7	08	6.3	31	173,00	178,00	171,00	171,00	4	173,25		3,30	1,91	94,38
8	13	5.3	21.1	175,20	170,28	184,03	185,97	4	178,87		7,40	4,14	97,44
9	39x	5.5	31	179,04	179,43	179,39	179,10	4	179,24		0,20	0,11	97,64
10	47x	4.1	32	181,00	182,00	176,00	178,00	4	179,25		2,75	1,54	97,65
11	18x	3.31	31	180,70	180,30	181,30	179,80	4	180,53		0,63	0,35	98,34
12	43x	4.1	31	183,00	185,00	181,00	177,00	4	181,50		3,42	1,88	98,87
13	52x	4.1	31	181,80	182,00	182,20	181,90	4	181,98		0,17	0,09	99,13
14	17x	5.5	31	186,40	184,00	180,70	179,70	4	182,70		3,08	1,68	99,53
15	02x	5.3	31	186,00	182,00	181,00	182,00	4	182,75		2,22	1,21	99,55
16	42	4.1	31	182,50	182,50	182,60	183,60	4	182,80		0,54	0,29	99,58
17	12	5.1	31	190,50	183,20	179,30	181,90	4	183,73		4,80	2,61	100,09
18	61x	4.1	21.1	217,00	181,00	171,00	166,00	4	183,75		23,03	12,53	100,10
19	26	5.1	31	173,00	176,00	195,00	193,00	4	184,25		11,35	6,16	100,37
20	04	9.1	41	185,00	186,00	185,00	187,00	4	185,75		0,96	0,52	101,19
21	03x	3.10	31	183,00	187,00	183,00	192,00	4	186,25		4,27	2,29	101,46
22	38a	9.1	42	189,00	187,00	186,00	188,00	4	187,50		1,29	0,69	102,14
23	46	5.2	31	187,30	187,60	186,60	189,60	4	187,78		1,29	0,69	102,29
24	37x	5.5	35	190,00	188,90	184,70	187,60	4	187,80		2,29	1,22	102,31
25	04a	9.1	42	187,60	188,80	189,70	186,20	4	188,08		1,52	0,81	102,46
26	33a	5.1	21	196,00	185,00	188,00	187,00	4	189,00		4,83	2,56	102,96
27	64x	6.5	21.1	184,08	191,92	189,44	190,87	4	189,08		3,48	1,84	103,00
28	44x	4.1	31	190,00	190,00	190,00	190,00	4	190,00		0,00	0,00	103,50
29	50x	4.1	31	191,00	191,90	191,50	191,50	4	191,48		0,37	0,19	104,31
30	38x	4.5	31	203,00	189,00	187,00	189,00	4	192,00		7,39	3,85	104,59
31	09x	5.5	31	199,00	195,70	190,60	198,90	4	196,05		3,94	2,01	106,80
32	48x	4.1	31	198,90	192,40	197,00	197,90	4	196,55		2,87	1,46	107,07
33	28	3.1	21.1	198,00	197,00	200,00	201,00	4	199,00		1,83	0,92	108,41
34	56	5.5	31	202,00	201,00	203,00	202,00	4	202,00		0,82	0,40	110,04
35	25x	5.1	31	206,00	212,00	203,00	202,00	4	205,75		4,50	2,19	112,08
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	N	Mean	SI	VI
all labs	136	**183,57**	**3,222**	**1,755**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Mn **Sample: 2 (Spruce needles - Germany)** 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	64x	6.5	21.1	234,12	230,35	229,00	230,42	4	230,97	*	2,20	0,95	83,81
2	07x	5.5	31	240,00	238,00	239,00	241,00	4	239,50		1,29	0,54	86,90
3	49	4.1	31	247,24	246,84	251,66	245,26	4	247,75		2,74	1,11	89,89
4	36x	5.5	31	249,70	250,80	251,60	250,30	4	250,60		0,80	0,32	90,93
5	06x	5.2	31	255,00	257,00	254,00	249,00	4	253,75		3,40	1,34	92,07
6	61x	4.1	21.1	252,00	257,00	255,00	254,00	4	254,50		2,08	0,82	92,34
7	01x	3.21	21.1	268,00	270,00	262,00	266,00	4	266,50		3,42	1,28	96,70
8	05x	3.3	21.1	275,00	267,50	265,00	265,00	4	268,13		4,73	1,77	97,29
9	08	6.3	31	269,00	265,00	269,00	271,00	4	268,50		2,52	0,94	97,42
10	04a	9.1	42	272,50	270,20	269,30	270,10	4	270,53		1,38	0,51	98,16
11	47x	4.1	32	273,00	269,00	271,00	270,00	4	270,75		1,71	0,63	98,24
12	18x	3.31	31	272,70	272,60	267,50	273,90	4	271,68		2,85	1,05	98,57
13	17x	5.5	31	278,60	274,60	271,30	268,90	4	273,35		4,21	1,54	99,18
14	42	4.1	31	273,50	274,59	274,60	273,50	4	274,05		0,63	0,23	99,43
15	52x	4.1	31	273,20	275,10	273,90	276,00	4	274,55		1,24	0,45	99,62
16	43x	4.1	31	277,00	276,00	278,00	274,00	4	276,25		1,71	0,62	100,23
17	02x	5.3	31	280,00	275,00	276,00	277,00	4	277,00		2,16	0,78	100,51
18	46	5.2	31	275,30	278,30	282,10	274,10	4	277,45		3,57	1,29	100,67
19	38a	9.1	42	279,00	276,00	280,00	275,00	4	277,50		2,38	0,86	100,69
20	39x	5.5	31	276,53	277,23	277,77	279,42	4	277,74		1,23	0,44	100,77
21	12	5.1	31	288,90	278,10	276,20	270,30	4	278,38		7,76	2,79	101,00
22	44x	4.1	31	280,00	280,00	280,00	280,00	4	280,00		0,00	0,00	101,59
23	38x	4.5	31	276,00	277,00	287,00	280,00	4	280,00		4,97	1,77	101,59
24	03x	3.10	31	277,00	284,00	279,00	283,00	4	280,75		3,30	1,18	101,87
25	37x	5.5	35	279,70	283,50	277,90	282,10	4	280,80		2,49	0,89	101,88
26	33a	5.1	21	279,00	295,00	278,00	275,00	4	281,75		9,00	3,19	102,23
27	50x	4.1	31	284,00	283,00	286,00	281,00	4	283,50		2,08	0,73	102,86
28	04	9.1	41	283,00	284,00	283,00	285,00	4	283,75		0,96	0,34	102,95
29	09x	5.5	31	296,00	289,60	293,70	291,70	4	292,75		2,74	0,94	106,22
30	48x	4.1	31	290,80	294,00	292,90	294,10	4	292,95		1,53	0,52	106,29
31	28	3.1	21.1	289,00	289,00	296,00	299,00	4	293,25		5,06	1,72	106,40
32	13	5.3	21.1	290,45	295,52	304,42	300,91	4	297,83		6,13	2,06	108,06
33	56	5.5	31	309,00	298,00	301,00	304,00	4	303,00		4,69	1,55	109,94
34	25x	5.1	31	304,00	309,00	301,00	306,00	4	305,00		3,37	1,10	110,66
35	26	5.1	31	328,00	317,00	310,00	291,00	4	311,50		15,55	4,99	113,02
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	N	Mean	SI	VI
all labs	140	**275,61**	**3,311**	**1,201**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Mn **Sample: 3 (Beech Leaves - Croatia)** 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	01x	3.21	21.1	*1158,0*	*1162,0*	*1174,0*	*1170,0*	0	1166,0	b	*	7,30	0,63	44,33
2	8	6.3	31	*1940,0*	*1940,0*	*1990,0*	*1970,0*	0	1960,0	b	*	24,49	1,25	74,52
3	05x	3.3	21.1	2450,0	2350,0	2400,0	2400,0	4	2400,0			40,82	1,70	91,25
4	61x	4.1	21.1	2435,0	2412,0	2437,0	2459,0	4	2435,8			19,21	0,79	92,61
5	18x	3.31	31	2498,8	2474,3	2487,2	2395,6	4	2464,0			46,67	1,89	93,68
6	17x	5.5	31	2511,0	2471,0	2447,0	2429,0	4	2464,5			35,45	1,44	93,70
7	46	5.2	31	2460,0	2470,0	2480,0	2460,0	4	2467,5			9,57	0,39	93,81
8	36x	5.5	31	2500,0	2490,0	2462,0	2467,0	4	2479,8			18,19	0,73	94,28
9	04a	9.1	42	2511,0	2502,0	2504,0	2506,0	4	2505,8			3,86	0,15	95,27
10	02x	5.3	31	2489,0	2509,0	2545,0	2543,0	4	2521,5			27,25	1,08	95,87
11	49	4.1	31	2518,0	2484,0	2601,0	2530,0	4	2533,3			49,19	1,94	96,31
12	06x	5.2	31	2575,0	2566,0	2569,0	2521,0	4	2557,8			24,78	0,97	97,24
13	64x	6.5	21.1	2540,3	2599,5	2548,3	2560,2	4	2562,1			26,26	1,02	97,41
14	38a	9.1	42	2555,0	2574,0	2579,0	2574,0	4	2570,5			10,60	0,41	97,73
15	43x	4.1	31	2559,0	2551,0	2593,0	2582,0	4	2571,3			19,57	0,76	97,76
16	12	5.1	31	2614,3	2572,7	2545,5	2566,4	4	2574,7			28,83	1,12	97,89
17	07x	5.5	31	2580,0	2570,0	2600,0	2560,0	4	2577,5			17,08	0,66	98,00
18	42	4.1	31	2608,0	2593,0	2601,0	2602,0	4	2601,0			6,16	0,24	98,89
19	52x	4.1	31	2593,0	2600,0	2596,0	2633,0	4	2605,5			18,56	0,71	99,06
20	50x	4.1	31	2601,0	2624,0	2609,0	2630,0	4	2616,0			13,34	0,51	99,46
21	4	9.1	41	2645,0	2660,0	2661,0	2663,0	4	2657,3			8,26	0,31	101,03
22	33a	5.1	21	2583,0	2803,0	2622,0	2629,0	4	2659,3			97,95	3,68	101,10
23	44x	4.1	31	2700,0	2670,0	2630,0	2670,0	4	2667,5			28,72	1,08	101,42
24	47x	4.1	32	2717,0	2658,0	2707,0	2636,0	4	2679,5			38,80	1,45	101,87
25	03x	3.10	31	2668,0	2701,0	2634,0	2721,0	4	2681,0			38,20	1,42	101,93
26	56	5.5	31	2766,0	2808,0	2712,0	2674,0	4	2740,0			58,99	2,15	104,17
27	25x	5.1	31	2732,0	2737,0	2771,0	2722,0	4	2740,5			21,27	0,78	104,19
28	48x	4.1	31	2761,0	2745,0	2731,0	2730,0	4	2741,8			14,55	0,53	104,24
29	37x	5.5	35	2779,0	2743,0	2765,0	2754,0	4	2760,3			15,39	0,56	104,94
30	39x	5.5	31	2741,0	2756,6	2782,8	2797,2	4	2769,4			25,32	0,91	105,29
31	38x	4.5	31	2853,0	2768,0	2863,0	2854,0	4	2834,5			44,56	1,57	107,77
32	09x	5.5	31	2816,0	2827,0	2855,0	2863,0	4	2840,3			22,35	0,79	107,99
33	26	5.1	31	*3386a*	2745,0	2597,0	2732,0	3	2691,3			81,95	3,05	102,32
34	28	3.1	21.1	2751,0	3007,0	2774,0	3001,0	4	2883,3			139,77	4,85	109,62
35	13	5.3	21.1	2909,8	2994,4	2957,4	2971,7	4	2958,3			35,76	1,21	112,47
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	N	Mean	SI	VI
all labs	131	**2630,2**	**32,947**	**1,253**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Mn **Sample: 4 (Ash Leaves - Belgium)** 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	49	4.1	31	*23,56*	*21,31*	*20,66*	*19,53*	0	21,27	b	*	1,70	7,98	42,87
2	01x	3.21	21.1	34,00	36,00	38,00	40,00	4	37,00		*	2,58	6,98	74,59
3	07x	5.5	31	42,20	40,60	41,30	41,70	4	41,45		*	0,68	1,63	83,56
4	06x	5.2	31	45,80	44,40	44,00	44,90	4	44,78			0,78	1,73	90,27
5	36x	5.5	31	45,00	45,00	44,90	44,80	4	44,93			0,10	0,21	90,57
6	17x	5.5	31	45,65	45,87	44,88	44,19	4	45,15			0,77	1,70	91,02
7	47x	4.1	32	46,00	45,00	46,00	45,00	4	45,50			0,58	1,27	91,73
8	52x	4.1	31	46,50	45,30	47,10	44,50	4	45,85			1,17	2,55	92,43
9	18x	3.31	31	46,70	46,30	46,00	46,40	4	46,35			0,29	0,62	93,44
10	26	5.1	31	51,50	46,80	44,20	43,80	4	46,58			3,54	7,61	93,89
11	02x	5.3	31	48,00	47,00	46,00	47,00	4	47,00			0,82	1,74	94,75
12	43x	4.1	31	48,00	46,00	48,00	47,00	4	47,25			0,96	2,03	95,26
13	38x	4.5	31	51,00	46,00	47,00	46,00	4	47,50			2,38	5,01	95,76
14	37x	5.5	35	48,00	45,80	49,00	47,60	4	47,60			1,34	2,81	95,96
15	42	4.1	31	48,97	48,32	48,11	47,14	4	48,14			0,76	1,57	97,04
16	39x	5.5	31	52,08	47,26	51,28	47,01	4	49,41			2,65	5,36	99,60
17	12	5.1	31	51,20	50,50	48,40	49,20	4	49,83			1,26	2,53	100,45
18	44x	4.1	31	50,00	50,00	50,00	50,00	4	50,00			0,00	0,00	100,80
19	08	6.3	31	53,10	49,50	49,10	49,30	4	50,25			1,91	3,80	101,30
20	46	5.2	31	49,69	50,01	49,92	51,60	4	50,31			0,87	1,74	101,41
21	50x	4.1	31	52,40	50,10	48,90	50,10	4	50,38			1,46	2,91	101,56
22	05x	3.3	21.1	55,00	50,00	50,00	47,50	4	50,63			3,15	6,21	102,06
23	04a	9.1	42	51,22	51,47	52,39	50,29	4	51,34			0,86	1,68	103,51
24	38a	9.1	42	52,20	53,00	52,10	50,90	4	52,05			0,87	1,66	104,93
25	09x	5.5	31	52,02	52,17	52,74	51,96	4	52,22			0,36	0,68	105,28
26	04	9.1	41	52,40	52,30	52,90	52,70	4	52,58			0,28	0,52	105,99
27	56	5.5	31	55,10	52,20	54,20	53,10	4	53,65			1,27	2,36	108,16
28	03x	3.10	31	49,00	58,00	57,00	55,00	4	54,75			4,03	7,36	110,38
29	48x	4.1	31	55,40	54,67	56,92	53,72	4	55,18			1,35	2,45	111,24
30	33a	5.1	21	55,00	59,00	56,00	55,00	4	56,25			1,89	3,37	113,40
31	64x	6.5	21.1	57,41	56,10	57,14	57,22	4	56,97			0,59	1,03	114,85
32	13	5.3	21.1	57,48	55,79	58,20	58,47	4	57,49		*	1,20	2,10	115,89
33	28	3.1	21.1	60,00	61,00	57,00	58,00	4	59,00		*	1,83	3,09	118,94
34	25x	5.1	31	*66,90*	*66,80*	*69,4a*	*66,50*	0	66,73	b	*	0,21	0,31	134,53
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37	61x	4.1	21.1	<34	<40	<34	<32							
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	N	Mean	SI	VI
all labs	128	**49,60**	**1,329**	**2,680**
15	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Fe **Sample: 1 (Pine Needles - Finland)** 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	29,70	30,00	30,10	29,90	4	29,93			0,17	0,57	81,30
2	46	5.2	31	33,20	31,40	31,90	32,70	4	32,30			0,80	2,49	87,75
3	38a	9.1	42	33,10	33,70	32,90	33,50	4	33,30			0,37	1,10	90,47
4	08	6.3	31	34,20	33,80	33,70	33,00	4	33,68			0,50	1,48	91,49
5	39x	5.5	31	34,10	34,44	34,49	34,76	4	34,45			0,27	0,79	93,58
6	07x	5.5	31	34,70	34,70	34,50	34,10	4	34,50			0,28	0,82	93,73
7	06x	5.2	31	34,20	36,10	34,30	34,20	4	34,70			0,93	2,69	94,27
8	64x	6.5	21.1	34,10	35,12	35,00	35,00	4	34,81			0,47	1,36	94,56
9	02x	5.3	31	38,20	33,60	34,20	33,40	4	34,85			2,26	6,48	94,68
10	47x	4.1	32	36,00	35,00	35,00	34,00	4	35,00			0,82	2,33	95,09
11	17x	5.5	31	35,92	35,08	34,79	34,62	4	35,10			0,58	1,64	95,36
12	52x	4.1	31	34,90	35,50	35,50	34,90	4	35,20			0,35	0,98	95,63
13	12	5.1	31	36,84	36,13	34,35	35,09	4	35,60			1,10	3,09	96,72
14	66	5.5	31	36,10	35,60	35,60	35,50	4	35,70			0,27	0,76	96,99
15	60	3.3	31	35,70	35,67	33,99	37,75	4	35,78			1,54	4,30	97,20
16	05x	3.3	21.1	42,00	33,50	34,00	34,00	4	35,88			4,09	11,40	97,46
17	43x	4.1	31	34,00	34,00	39,00	37,00	4	36,00			2,45	6,80	97,80
18	48x	4.1	31	36,37	36,40	36,58	36,69	4	36,51			0,15	0,42	99,19
19	18x	3.31	31	37,00	36,60	35,80	37,90	4	36,83			0,87	2,37	100,04
20	09x	5.5	31	37,20	38,54	38,15	38,05	4	37,99			0,56	1,49	103,19
21	03x	3.10	31	37,00	40,00	37,00	39,00	4	38,25			1,50	3,92	103,91
22	50x	4.1	31	38,37	37,93	37,83	38,91	4	38,26			0,49	1,29	103,94
23	33a	5.1	21	35,00	37,00	40,00	44,00	4	39,00			3,92	10,04	105,95
24	44x	4.1	31	40,00	40,00	40,00	40,00	4	40,00			0,00	0,00	108,67
25	37x	5.5	22	39,90	41,00	39,60	40,50	4	40,25			0,62	1,55	109,35
26	49	4.1	31	40,57	47,34	39,07	36,51	4	40,87			4,63	11,32	111,04
27	38x	4.5	31	42,20	40,70	40,20	40,40	4	40,88			0,91	2,22	111,05
28	42	4.1	31	42,33	40,38	40,28	42,44	4	41,36			1,19	2,87	112,36
29	26	5.1	31	38,50	50,90	42,10	39,50	4	42,75			5,64	13,20	116,14
30	04	9.1	41	44,30	43,90	45,00	45,10	4	44,58		*	0,57	1,29	121,10
31	56	5.5	31	*53,07*	*49,76*	*46,34*	*43,14*	0	48,08	b	*	4,29	8,92	130,61
32	01x	3.21	21.1	*54,00*	*52,00*	*50,00*	*56,00*	0	53,00	b	*	2,58	4,87	143,99
33	04a	9.1	42	*59,45*	*57,68*	*57,24*	*58,17*	0	58,14	b	*	0,96	1,64	157,94
34	25x	5.1	31	*83,10*	*83,70*	*77,80*	*87,30*	0	82,98	b	*	3,92	4,72	225,42
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	N	Mean	SI	VI
all labs	120	**36,81**	**1,277**	**3,469**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Fe **Sample: 2 (Spruce needles - Germany)** 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	01x	3.21	21.1	*62,00*	*56,00*	*66,00*	*60,00*	0	61,00	b	*	4,16	6,83	37,56
2	05x	3.3	21.1	*128,50*	*132,00*	*122,50*	*120,00*	0	125,75	b	*	5,48	4,36	77,42
3	64x	6.5	21.1	140,85	145,11	144,00	144,00	4	143,49			1,84	1,28	88,34
4	26	5.1	31	144,00	147,00	140,00	143,00	4	143,50			2,89	2,01	88,35
5	02x	5.3	31	145,00	146,00	148,00	143,00	4	145,50			2,08	1,43	89,58
6	07x	5.5	31	148,00	144,00	148,00	144,00	4	146,00			2,31	1,58	89,89
7	33a	5.1	21	155,00	144,00	152,00	148,00	4	149,75			4,79	3,20	92,20
8	46	5.2	31	151,00	152,00	153,00	151,00	4	151,75			0,96	0,63	93,43
9	36x	5.5	31	152,50	151,50	153,50	151,70	4	152,30			0,91	0,60	93,77
10	06x	5.2	31	155,00	159,00	156,00	149,00	4	154,75			4,19	2,71	95,28
11	47x	4.1	32	165,00	161,00	152,00	152,00	4	157,50			6,56	4,16	96,97
12	09x	5.5	31	159,20	154,20	156,70	164,80	4	158,73			4,54	2,86	97,72
13	08	6.3	31	158,00	156,00	159,00	163,00	4	159,00			2,94	1,85	97,89
14	39x	5.5	31	160,29	160,85	161,92	159,03	4	160,52			1,20	0,75	98,83
15	43x	4.1	31	160,00	160,00	159,00	168,00	4	161,75			4,19	2,59	99,59
16	48x	4.1	31	162,00	162,00	163,80	160,10	4	161,98			1,51	0,93	99,72
17	12	5.1	31	171,02	163,39	162,86	158,84	4	164,03			5,09	3,10	100,99
18	17x	5.5	31	167,30	167,10	166,50	162,60	4	165,88			2,21	1,33	102,12
19	60	3.3	31	167,73	166,15	169,11	160,51	4	165,88			3,78	2,28	102,12
20	66	5.5	31	167,00	166,00	166,00	165,00	4	166,00			0,82	0,49	102,20
21	49	4.1	31	166,67	169,66	165,90	164,07	4	166,58			2,33	1,40	102,56
22	52x	4.1	31	166,50	167,80	167,30	167,10	4	167,18			0,54	0,32	102,93
23	04	9.1	41	166,00	165,00	171,00	171,00	4	168,25			3,20	1,90	103,59
24	04a	9.1	42	167,90	166,30	170,50	168,40	4	168,28			1,73	1,03	103,60
25	38a	9.1	42	172,00	170,00	168,00	167,00	4	169,25			2,22	1,31	104,20
26	44x	4.1	31	170,00	170,00	170,00	170,00	4	170,00			0,00	0,00	104,66
27	50x	4.1	31	170,20	171,10	170,40	169,30	4	170,25			0,74	0,44	104,82
28	18x	3.31	31	170,00	168,20	167,40	176,80	4	170,60			4,27	2,51	105,03
29	03x	3.10	31	169,00	174,00	171,00	172,00	4	171,50			2,08	1,21	105,59
30	56	5.5	31	173,40	181,50	169,00	174,40	4	174,58			5,18	2,97	107,48
31	37x	5.5	22	174,90	173,60	177,20	180,20	4	176,48			2,90	1,64	108,65
32	42	4.1	31	175,90	175,80	182,30	173,80	4	176,95			3,70	2,09	108,94
33	38x	4.5	31	174,60	176,70	177,80	178,80	4	176,98			1,80	1,02	108,96
34	25x	5.1	31	*207,00*	*213,00*	*217,00*	*205,00*	0	210,50	b	*	5,51	2,62	129,60
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	N	Mean	SI	VI
all labs	124	**162,42**	**2,693**	**1,658**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Fe **Sample: 3 (Beech Leaves - Croatia)** 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	04	9.1	41	*54,50*	*54,30*	*59,90*	*59,70*	0	57,10	b	*	3,12	5,46	62,58
2	36x	5.5	31	71,90	73,10	72,80	72,00	4	72,45		*	0,59	0,82	79,41
3	08	6.3	31	76,30	76,60	79,60	75,90	4	77,10			1,69	2,19	84,50
4	05x	3.3	21.1	79,00	74,50	79,00	81,00	4	78,38			2,75	3,51	85,90
5	01x	3.21	21.1	78,00	82,00	80,00	76,00	4	79,00			2,58	3,27	86,58
6	02x	5.3	31	79,70	79,90	81,30	81,50	4	80,60			0,93	1,16	88,34
7	07x	5.5	31	81,80	78,60	86,00	77,80	4	81,05			3,73	4,60	88,83
8	06x	5.2	31	85,70	86,30	85,10	83,20	4	85,08			1,34	1,58	93,24
9	66	5.5	31	85,70	84,70	85,50	84,40	4	85,08			0,62	0,73	93,24
10	26	5.1	31	90,50	87,10	89,30	84,50	4	87,85			2,64	3,01	96,28
11	39x	5.5	31	86,91	89,41	89,04	86,66	4	88,01			1,42	1,61	96,45
12	47x	4.1	32	90,00	90,00	89,00	89,00	4	89,50			0,58	0,65	98,09
13	17x	5.5	31	91,40	89,02	88,11	89,53	4	89,52			1,39	1,55	98,11
14	12	5.1	31	91,64	90,80	89,59	88,46	4	90,12			1,39	1,54	98,77
15	43x	4.1	31	90,00	88,00	93,00	93,00	4	91,00			2,45	2,69	99,74
16	09x	5.5	31	90,55	91,15	92,01	93,07	4	91,70			1,10	1,19	100,50
17	50x	4.1	31	91,30	91,45	92,25	92,64	4	91,91			0,64	0,70	100,73
18	18x	3.31	31	95,20	91,30	90,10	91,80	4	92,10			2,19	2,37	100,94
19	52x	4.1	31	91,20	92,40	92,10	92,70	4	92,10			0,65	0,70	100,94
20	48x	4.1	31	94,34	92,34	94,21	92,95	4	93,46			0,97	1,04	102,43
21	64x	6.5	21.1	93,26	94,12	93,68	93,89	4	93,74			0,37	0,39	102,74
22	60	3.3	31	91,71	95,78	93,93	94,31	4	93,93			1,68	1,79	102,95
23	33a	5.1	21	89,00	87,00	97,00	103,00	4	94,00			7,39	7,87	103,02
24	37x	5.5	22	93,70	96,90	92,80	95,60	4	94,75			1,85	1,95	103,85
25	46	5.2	31	94,10	95,30	96,00	95,20	4	95,15			0,79	0,83	104,29
26	38x	4.5	31	95,90	93,70	97,80	94,80	4	95,55			1,75	1,83	104,72
27	42	4.1	31	95,50	95,00	94,80	96,90	4	95,55			0,95	0,99	104,72
28	49	4.1	31	96,32	95,00	99,56	93,05	4	95,98			2,74	2,85	105,20
29	44x	4.1	31	90,00	110,00	90,00	100,00	4	97,50			9,57	9,82	106,86
30	03x	3.10	31	102,00	101,00	93,00	98,00	4	98,50			4,04	4,10	107,96
31	56	5.5	31	104,50	106,90	95,52	98,89	4	101,45			5,19	5,11	111,19
32	04a	9.1	42	113,40	112,70	114,70	113,60	4	113,60		*	0,83	0,73	124,51
33	38a	9.1	42	113,00	113,00	116,00	114,00	4	114,00		*	1,41	1,24	124,94
34	25x	5.1	31	*127,00*	*138,00*	*141,00*	*127,00*	0	133,25	b	*	7,32	5,49	146,04
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	N	Mean	SI	VI
all labs	128	**91,24**	**2,131**	**2,336**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Fe **Sample: 4 (Ash Leaves - Belgium)** 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	07x	5.5	31	120,00	*113a*	120,00	121,00	3	120,33	0,58	0,48	84,66
2	26	5.1	31	132,00	121,00	116,00	118,00	4	121,75	7,14	5,86	85,65
3	36x	5.5	31	124,30	125,60	125,90	126,20	4	125,50	0,84	0,67	88,29
4	06x	5.2	31	130,00	128,00	126,00	132,00	4	129,00	2,58	2,00	90,75
5	02x	5.3	31	131,00	132,00	130,00	131,00	4	131,00	0,82	0,62	92,16
6	05x	3.3	21.1	*154,50*	*111,00*	*118,00*	*157,00*	0	135,13 c	24,01	17,77	95,06
7	43x	4.1	31	136,00	135,00	131,00	139,00	4	135,25	3,30	2,44	95,15
8	39x	5.5	31	135,57	135,29	134,72	136,07	4	135,41	0,56	0,42	95,27
9	47x	4.1	32	138,00	135,00	135,00	136,00	4	136,00	1,41	1,04	95,68
10	09x	5.5	31	134,20	135,70	139,20	136,80	4	136,48	2,11	1,54	96,01
11	33a	5.1	21	127,00	133,00	145,00	144,00	4	137,25	8,73	6,36	96,56
12	66	5.5	31	140,00	140,00	135,00	136,00	4	137,75	2,63	1,91	96,91
13	17x	5.5	31	142,60	139,90	136,80	134,10	4	138,35	3,69	2,67	97,33
14	08	6.3	31	140,00	139,00	139,00	140,00	4	139,50	0,58	0,41	98,14
15	60	3.3	31	141,68	140,14	140,10	139,46	4	140,35	0,94	0,67	98,74
16	49	4.1	31	147,68	141,49	140,69	132,09	4	140,49	6,41	4,56	98,84
17	38x	4.5	31	144,80	137,40	142,70	138,40	4	140,83	3,51	2,49	99,07
18	52x	4.1	31	140,20	139,10	143,20	142,00	4	141,13	1,83	1,30	99,28
19	37x	5.5	22	141,90	140,20	143,70	138,80	4	141,15	2,12	1,50	99,30
20	18x	3.31	31	137,70	153,40	141,40	142,10	4	143,65	6,78	4,72	101,06
21	12	5.1	31	147,27	143,37	140,11	144,21	4	143,74	2,94	2,05	101,12
22	64x	6.5	21.1	141,58	145,87	143,25	144,36	4	143,77	1,81	1,26	101,14
23	50x	4.1	31	145,40	142,70	145,00	143,60	4	144,18	1,25	0,87	101,43
24	38a	9.1	42	148,00	149,00	145,00	141,00	4	145,75	3,59	2,47	102,54
25	56	5.5	31	146,50	153,00	140,80	148,10	4	147,10	5,03	3,42	103,49
26	44x	4.1	31	150,00	150,00	150,00	150,00	4	150,00	0,00	0,00	105,53
27	48x	4.1	31	155,00	145,50	154,30	146,90	4	150,43	4,92	3,27	105,83
28	46	5.2	31	154,00	149,00	152,00	154,00	4	152,25	2,36	1,55	107,11
29	42	4.1	31	155,00	155,10	150,70	152,60	4	153,35	2,11	1,38	107,88
30	04	9.1	41	155,00	156,00	159,00	158,00	4	157,00	1,83	1,16	110,45
31	03x	3.10	31	147,00	169,00	161,00	151,00	4	157,00	9,93	6,33	110,45
32	01x	3.21	21.1	152,00	162,00	160,00	158,00	4	158,00	4,32	2,73	111,16
33	04a	9.1	42	168,60	168,90	174,20	165,90	4	169,40	3,47	2,05	119,18
34	25x	5.1	31	*172,00*	*182,00*	*191,00*	*188,00*	0	183,25 b *	8,38	4,57	128,92
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	N	Mean	SI	VI
all labs	127	**142,14**	**3,129**	**2,201**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Cu **Sample: 1 (Pine Needles - Finland)** 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	42	4.1	22	2,26	2,18	2,28	2,16	4	2,22		*	0,06	2,60	70,86
2	36x	5.5	31	2,26	2,49	2,18	2,41	4	2,34		*	0,14	6,02	74,57
3	05x	3.3	21.1	2,50	2,50	2,50	2,50	4	2,50		*	0,00	0,00	79,84
4	39x	5.5	35	2,72	2,76	2,72	2,74	4	2,74			0,02	0,70	87,35
5	26	5.1	31	2,75	2,80	2,78	2,85	4	2,80			0,04	1,50	89,26
6	04a	5.5	22	2,78	2,82	2,81	2,81	4	2,81			0,02	0,62	89,58
7	52x	4.1	31	2,88	2,78	2,88	2,77	4	2,83			0,06	2,15	90,30
8	12	5.1	31	3,47	2,84	2,72	2,61	4	2,91			0,38	13,23	92,94
9	08	6.3	31	2,97	2,96	2,88	2,84	4	2,91			0,06	2,16	93,02
10	28	3.1	21.1	3,00	3,00	3,00	3,00	4	3,00			0,00	0,00	95,81
11	44x	4.1	32	2,98	3,10	2,93	3,00	4	3,00			0,07	2,38	95,89
12	09x	5.5	31	3,01	3,10	2,99	3,01	4	3,03			0,05	1,63	96,69
13	33a	5.1	21	2,74	2,95	3,34	3,12	4	3,04			0,25	8,38	97,01
14	18x	6.4	31	3,45	3,15	2,53	3,05	4	3,05			0,38	12,58	97,25
15	03	4.1	22	3,19	3,05	2,97	3,01	4	3,06			0,10	3,13	97,57
16	47x	4.1	32	3,10	3,04	3,06	3,04	4	3,06			0,03	0,92	97,73
17	04	9.1	41	3,10	3,00	3,10	3,10	4	3,08			0,05	1,63	98,21
18	48x	4.1	31	3,31	3,20	3,35	3,23	4	3,27			0,07	2,10	104,59
19	50	4.1	31	3,32	3,18	3,28	3,38	4	3,29			0,08	2,54	105,01
20	60	3.3	31	3,36	3,28	3,41	3,26	4	3,33			0,07	2,10	106,27
21	37x	5.5	35	3,29	3,50	3,39	3,37	4	3,39			0,09	2,56	108,19
22	17x	5.5	31	3,23	3,57	3,43	3,34	4	3,39			0,14	4,24	108,35
23	07x	5.5	31	3,43	3,41	3,40	3,49	4	3,43			0,04	1,17	109,62
24	38x	4.5	31	3,50	3,40	3,59	3,52	4	3,50			0,08	2,24	111,86
25	43x	4.1	32	3,70	4,00	3,40	3,60	4	3,68			0,25	6,80	117,37
26	02x	5.3	31	4,20	3,00	3,30	4,20	4	3,68			0,62	16,83	117,37
27	49	4.1	31	3,67	3,75	3,85	3,50	4	3,69			0,15	4,01	117,93
28	38a	9.1	42	3,77	3,77	3,85	3,67	4	3,77		*	0,07	1,96	120,24
29	64x	0	21.1	4,20	3,80	4,00	4,20	4	4,05		*	0,19	4,73	129,34
30	56	5.5	31	*4,24*	*6,99*	*4,62*	*6,08*	0	5,48	b	*	1,28	23,35	175,09
31	25x	5.1	31	*6,73*	*6,50*	*6,90*	*6,75*	0	6,72	b	*	0,17	2,46	214,62
32														
33														
34	06x	5.2	31	<3,6	<3,6	<3,6	<3,6							
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	N	Mean	SI	VI
all labs	116	**3,13**	**0,123**	**3,932**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Cu **Sample: 2 (Spruce needles - Germany)** 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	05x	3.3	21.1	2,50	2,50	2,50	2,50	4	2,50	*	0,00	0,00	65,46
2	42	4.1	22	2,61	2,71	2,92	2,62	4	2,71	*	0,14	5,32	71,06
3	64x	0	21.1	3,10	3,30	3,15	3,20	4	3,19		0,09	2,68	83,46
4	26	5.1	31	3,39	3,40	3,39	3,35	4	3,38		0,02	0,66	88,57
5	39x	5.5	35	3,45	3,42	3,44	3,40	4	3,43		0,02	0,65	89,74
6	12	5.1	31	3,56	3,61	3,52	3,37	4	3,52		0,10	2,94	92,03
7	33a	5.1	21	3,32	3,50	3,77	3,57	4	3,54		0,19	5,25	92,69
8	04a	5.5	22	3,62	3,53	3,57	3,49	4	3,55		0,06	1,57	93,02
9	52x	4.1	31	3,53	3,63	3,65	3,60	4	3,60		0,05	1,46	94,33
10	08	6.3	31	3,68	3,68	3,52	3,57	4	3,61		0,08	2,23	94,59
11	17x	5.5	31	3,89	3,77	3,37	3,48	4	3,63		0,24	6,70	94,98
12	03	4.1	22	3,67	3,57	3,72	3,61	4	3,64		0,07	1,81	95,37
13	44x	4.1	32	3,70	3,85	3,65	3,73	4	3,73		0,08	2,28	97,73
14	09x	5.5	31	3,74	3,63	3,88	3,76	4	3,75		0,10	2,73	98,25
15	18x	6.4	31	4,11	3,51	3,76	3,78	4	3,79		0,25	6,50	99,23
16	38x	4.5	31	3,94	3,86	3,95	3,97	4	3,93		0,05	1,23	102,90
17	48x	4.1	31	4,01	4,06	3,97	3,92	4	3,99		0,06	1,44	104,49
18	28	3.1	21.1	4,00	4,00	4,00	4,00	4	4,00		0,00	0,00	104,73
19	56	5.5	31	4,20	4,11	4,24	3,49	4	4,01		0,35	8,75	105,00
20	47x	4.1	32	4,05	3,95	4,00	4,09	4	4,02		0,06	1,51	105,32
21	43x	4.1	32	4,00	4,80	3,80	3,60	4	4,05		0,53	12,99	106,04
22	07x	5.5	31	4,03	4,08	4,14	4,16	4	4,10		0,06	1,44	107,42
23	36x	5.5	31	4,00	4,12	4,15	4,23	4	4,13		0,10	2,31	108,01
24	02x	5.3	31	*5,8a*	4,00	4,30	4,20	3	4,17		0,15	3,67	109,10
25	04	9.1	41	3,90	4,20	4,30	4,30	4	4,18		0,19	4,53	109,32
26	60	3.3	31	3,93	4,32	4,38	4,19	4	4,21		0,20	4,75	110,10
27	37x	5.5	35	4,38	4,21	4,18	4,26	4	4,26		0,09	2,07	111,48
28	38a	9.1	42	4,34	4,35	4,32	4,41	4	4,36		0,04	0,89	114,03
29	49	4.1	31	4,25	4,70	4,55	4,31	4	4,45		0,21	4,71	116,58
30	50	4.1	31	5,20	5,38	5,05	5,34	4	5,24	*	0,15	2,83	137,25
31	25x	5.1	31	*8,30*	*8,80*	*8,00*	*8,55*	0	8,41	b *	0,34	4,07	220,27
32													
33													
34	06x	5.2	31	<3,6	3,60	<3,6	<3,6						
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	N	Mean	SI	VI
all labs	119	**3,82**	**0,124**	**3,246**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Cu **Sample: 3 (Beech Leaves - Croatia)** 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	42	4.1	22	*4,66*	*4,68*	*4,69*	*4,70*	0	4,68	b	*	0,02	0,39	64,79
2	05x	3.3	21.1	*5,00*	*5,00*	*5,00*	*5,00*	0	5,00	b	*	0,00	0,00	69,24
3	07x	5.5	31	6,12	6,12	6,17	6,04	4	6,11			0,05	0,88	84,64
4	33a	5.1	21	6,06	6,37	5,84	6,37	4	6,16			0,26	4,20	85,30
5	39x	5.5	35	6,54	6,47	6,31	6,51	4	6,46			0,10	1,59	89,42
6	12	5.1	31	7,08	7,01	6,43	6,25	4	6,69			0,41	6,19	92,67
7	18x	6.4	31	7,22	6,55	6,52	6,61	4	6,73			0,33	4,94	93,12
8	08	6.3	31	6,67	6,78	6,70	6,80	4	6,74			0,06	0,93	93,30
9	17x	5.5	31	6,93	6,86	6,93	6,70	4	6,86			0,11	1,58	94,92
10	52x	4.1	31	6,85	6,96	7,00	6,95	4	6,94			0,06	0,92	96,10
11	64x	0	21.1	7,42	6,89	6,98	6,87	4	7,04			0,26	3,66	97,49
12	09x	5.5	31	7,07	6,95	7,16	7,12	4	7,08			0,09	1,29	97,97
13	36x	5.5	31	6,89	6,92	7,32	7,30	4	7,11			0,23	3,30	98,42
14	02x	5.3	31	7,00	7,10	*9,4a*	7,40	3	7,17			0,21	2,90	99,24
15	06x	5.2	31	7,20	7,13	7,22	7,23	4	7,20			0,05	0,63	99,63
16	38x	4.5	31	7,18	7,16	7,28	7,25	4	7,22			0,06	0,79	99,94
17	37x	5.5	35	7,36	7,21	7,26	7,05	4	7,22			0,13	1,79	99,98
18	38a	9.1	42	7,34	7,28	7,28	7,33	4	7,31			0,03	0,44	101,19
19	04a	5.5	22	7,24	7,26	7,62	7,26	4	7,35			0,18	2,50	101,71
20	26	5.1	31	7,48	7,44	7,34	7,19	4	7,36			0,13	1,75	101,95
21	60	3.3	31	7,44	7,50	7,28	7,46	4	7,42			0,10	1,30	102,75
22	44x	4.1	32	7,42	7,33	7,59	7,45	4	7,45			0,11	1,45	103,13
23	47x	4.1	32	7,42	7,55	7,49	7,37	4	7,46			0,08	1,06	103,27
24	50	4.1	31	7,36	7,51	7,32	7,79	4	7,50			0,21	2,84	103,79
25	49	4.1	31	7,36	7,47	8,22	7,63	4	7,67			0,38	4,99	106,21
26	04	9.1	41	8,00	7,60	7,60	7,70	4	7,73			0,19	2,45	106,97
27	28	3.1	21.1	7,00	8,00	8,00	8,00	4	7,75			0,50	6,45	107,32
28	56	5.5	31	7,41	8,20	7,17	8,58	4	7,84			0,66	8,43	108,56
29	48x	4.1	31	7,77	7,97	7,97	7,95	4	7,91			0,10	1,22	109,58
30	43x	4.1	32	8,00	7,80	8,00	7,90	4	7,93			0,10	1,21	109,74
31	03	4.1	22	8,02	8,07	8,05	8,07	4	8,05			0,02	0,29	111,51
32	25x	5.1	31	*10,20*	*10,60*	*10,90*	*10,80*	0	10,63	b	*	0,31	2,91	147,13
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	N	Mean	SI	VI
all labs	115	**7,22**	**0,180**	**2,487**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Cu **Sample: 4 (Ash Leaves - Belgium)** 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	05x	3.3	21.1	6,00	5,50	5,50	5,50	4	5,63	*	0,25	4,44	67,88
2	42	4.1	22	5,86	5,70	5,65	5,84	4	5,76	*	0,10	1,77	69,55
3	36x	5.5	31	6,60	6,58	6,62	6,60	4	6,60	*	0,02	0,25	79,65
4	07x	5.5	31	7,10	6,94	7,15	7,15	4	7,09		0,10	1,40	85,50
5	39x	5.5	35	7,52	7,51	7,46	7,65	4	7,54		0,08	1,08	90,93
6	26	5.1	31	8,32	7,59	7,30	7,32	4	7,63		0,48	6,25	92,11
7	12	5.1	31	7,89	7,62	7,86	7,62	4	7,75		0,15	1,91	93,49
8	37x	5.5	35	7,88	7,96	8,06	7,93	4	7,96		0,08	0,95	96,03
9	08	6.3	31	8,21	7,96	7,98	8,02	4	8,04		0,11	1,42	97,05
10	09x	5.5	31	7,86	8,16	8,22	8,12	4	8,09		0,16	1,96	97,63
11	02x	5.3	31	8,20	8,20	8,00	8,10	4	8,13		0,10	1,18	98,05
12	38x	4.5	31	8,22	7,84	8,35	8,10	4	8,13		0,22	2,67	98,08
13	04a	5.5	22	8,41	8,40	7,99	7,74	4	8,14		0,33	4,03	98,17
14	38a	9.1	42	8,26	8,11	8,18	8,33	4	8,22		0,10	1,16	99,20
15	18x	6.4	31	8,22	8,27	8,00	8,56	4	8,26		0,23	2,79	99,71
16	56	5.5	31	8,51	8,96	8,21	7,58	4	8,32		0,58	6,96	100,34
17	52x	4.1	31	8,22	8,32	8,52	8,31	4	8,34		0,13	1,52	100,67
18	60	3.3	31	8,47	8,09	8,30	8,56	4	8,36		0,21	2,48	100,83
19	06x	5.2	31	8,30	8,32	8,31	8,57	4	8,38		0,13	1,56	101,07
20	17x	5.5	31	8,89	8,47	7,92	8,48	4	8,44		0,40	4,72	101,85
21	50	4.1	31	8,46	8,45	8,89	8,56	4	8,59		0,21	2,40	103,66
22	43x	4.1	32	8,90	8,70	8,70	8,60	4	8,73		0,13	1,44	105,29
23	28	3.1	21.1	*11a*	9,00	9,00	9,00	3	9,00		0,00	0,00	108,61
24	49	4.1	31	9,12	9,12	9,28	8,67	4	9,05		0,26	2,90	109,18
25	44x	4.1	32	9,05	8,98	9,19	9,07	4	9,07		0,09	0,96	109,48
26	33a	5.1	21	8,54	9,01	8,86	9,93	4	9,09		0,60	6,57	109,64
27	48x	4.1	31	9,19	8,98	9,25	9,28	4	9,17		0,14	1,48	110,71
28	64x	0	21.1	9,22	9,01	9,12	9,65	4	9,25		0,28	3,03	111,63
29	47x	4.1	32	9,49	9,40	9,37	9,30	4	9,39		0,08	0,84	113,32
30	03	4.1	22	9,33	9,82	9,32	9,50	4	9,49		0,23	2,46	114,55
31	04	9.1	41	9,50	9,50	9,50	9,70	4	9,55		0,10	1,05	115,09
32	25x	5.1	31	10,70	10,50	10,70	10,30	4	10,55	*	0,19	1,82	127,31
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	N	Mean	SI	VI
all labs	127	**8,29**	**0,192**	**2,311**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Pb **Sample: 1 (Pine Needles - Finland)** 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	18x	6.4	31	0,00	0,04	0,00	0,10	4	0,03		*	0,05	138,70	16,06
2	60	3.1	22	0,08	0,09	0,08	0,09	4	0,08		*	0,01	7,16	39,21
3	48x	4.1	35	0,12	0,12	0,12	0,12	4	0,12		*	0,00	1,85	55,92
4	37x	5.5	35	0,14	0,13	0,14	0,13	4	0,13		*	0,00	3,24	63,54
5	38x	5.5	35	0,14	0,14	0,13	0,13	4	0,14		*	0,01	4,28	63,78
6	03	4.1	22	0,14	0,15	0,15	0,15	4	0,15		*	0,00	3,39	69,68
7	04a	5.5	22	0,19	0,14	0,17	0,15	4	0,16			0,02	14,09	76,77
8	26	5.1	35	0,22	0,17	0,17	0,18	4	0,18			0,02	11,47	87,04
9	43x	4.1	32	0,20	0,30	0,20	0,30	4	0,25			0,06	23,09	118,10
10	56	5.5	22	0,32	0,40	0,25	0,41	4	0,34		*	0,07	21,76	162,28
11	33a	5.1	90	0,46	0,42	0,48	0,36	4	0,43		*	0,05	12,31	203,14
12	36x	5.5	31	0,52	0,53	0,49	0,53	4	0,52		*	0,02	3,66	244,48
13	64x	6.1	22	*0,74*	*0,69*	*0,86*	*0,80*	0	0,77	b	*	0,07	9,12	365,18
14	04	9.1	41	*1,40*	*1,20*	*1,30*	*1,40*	0	1,33	b	*	0,10	7,23	625,95
15	25x	5.1	22	*2,12*	*2,84*	*2,68*	*2,42*	0	2,52	b	*	0,32	12,53	1188,13
16														
17														
18	06x	5.2	31	<3	<3	<3	<3							
19	17x	5.5	32	<1,5	<1,5	<1,5	<1,5							
20	09x	5.5	31	<,5	<,5	<,5	<,5							
21	02x	5.3	31	<,4	<,4	<,4	<,4							
22	44x	4.1	32	<,37	<,37	<,37	<,37							
23	47x	4.1	32	<,3	<,3	<,3	<,3							
24	39x	5.5	35	<,25	<,25	<,25	<,25							
25	50	4.1	31	<,25	<,25	<,25	<,25							
26	08	6.3	32	<,2	<,2	<,2	<,2							
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	N	Mean	SI	VI
all labs	48	**0,21**	**0,027**	**12,550**
30	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Pb **Sample: 2 (Spruce needles - Germany)** 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	64x	6.1	22	1,60	1,33	1,49	1,50	4	1,48			0,11	7,52	79,50
2	33a	5.1	90	1,56	1,58	1,49	1,55	4	1,55			0,04	2,51	82,94
3	02x	5.3	31	1,90	1,60	1,50	1,40	4	1,60			0,22	13,50	85,89
4	18x	6.4	31	1,68	1,49	1,69	1,62	4	1,62			0,09	5,66	87,00
5	09x	5.5	31	1,53	1,46	1,87	1,73	4	1,65			0,19	11,44	88,36
6	43x	4.1	32	1,80	1,80	1,70	1,60	4	1,73			0,10	5,55	92,60
7	36x	5.5	31	1,72	1,70	1,80	1,77	4	1,75			0,05	2,62	93,81
8	17x	5.5	32	1,76	1,79	1,82	1,76	4	1,78			0,03	1,61	95,69
9	37x	5.5	35	1,77	1,79	1,78	1,80	4	1,79			0,01	0,77	95,90
10	39x	5.5	35	1,80	1,80	1,79	1,79	4	1,80			0,01	0,32	96,36
11	38x	5.5	35	1,84	1,80	1,80	1,74	4	1,80			0,04	2,30	96,36
12	26	5.1	35	1,66	1,95	1,80	1,89	4	1,83			0,13	6,91	97,97
13	48x	4.1	35	1,81	1,91	1,83	1,85	4	1,85			0,04	2,30	99,19
14	47x	4.1	32	1,98	1,84	1,88	1,82	4	1,88			0,07	3,79	100,92
15	60	3.1	22	1,89	1,96	1,89	1,97	4	1,93			0,04	2,17	103,51
16	04a	5.5	22	1,96	1,97	1,97	1,97	4	1,97			0,01	0,25	105,62
17	44x	4.1	32	1,97	2,06	1,93	1,99	4	1,99			0,05	2,74	106,69
18	03	4.1	22	1,97	1,99	2,05	2,06	4	2,02			0,04	2,19	108,30
19	08	6.3	32	2,09	2,07	2,27	2,14	4	2,14			0,09	4,20	115,01
20	56	5.5	22	2,07	2,08	2,28	2,26	4	2,17			0,11	5,21	116,58
21	50	4.1	31	2,14	2,22	2,14	2,37	4	2,22			0,11	4,86	118,94
22	04	9.1	41	2,60	2,50	2,50	2,30	4	2,48		*	0,13	5,08	132,86
23	25x	5.1	22	*3,65*	*3,44*	*3,40*	*3,49*	0	3,50	b	*	0,11	3,14	187,62
24														
25														
26	06x	5.2	31	<3	<3	<3	<3							
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	N	Mean	SI	VI
all labs	88	**1,86**	**0,077**	**4,146**
30	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Pb **Sample: 3 (Beech Leaves - Croatia)** 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	18x	6.4	31	0,32	0,17	0,10	0,23	4	0,20		*	0,10	47,01	39,79
2	60	3.1	22	0,30	0,31	0,28	0,33	4	0,31		*	0,02	5,82	59,86
3	48x	4.1	35	0,32	0,31	0,33	0,31	4	0,32		*	0,01	3,00	62,57
4	39x	5.5	35	0,34	0,32	0,33	0,33	4	0,33		*	0,01	2,47	64,61
5	37x	5.5	35	0,34	0,35	0,35	0,35	4	0,35		*	0,01	2,02	67,79
6	38x	5.5	35	0,35	0,33	0,37	0,38	4	0,36		*	0,02	6,20	69,99
7	43x	4.1	32	0,40	0,30	0,30	0,50	4	0,38			0,10	25,53	73,42
8	26	5.1	35	0,41	0,30	0,50	0,35	4	0,39			0,09	22,56	75,86
9	04a	5.5	22	0,42	0,41	0,36	0,39	4	0,39			0,03	7,23	77,04
10	03	4.1	22	0,43	0,41	0,45	0,45	4	0,44			0,02	4,40	85,16
11	08	6.3	32	0,47	0,47	0,42	0,56	4	0,48			0,06	12,31	94,17
12	44x	4.1	32	0,51	0,55	0,44	0,50	4	0,50			0,05	9,09	97,89
13	56	5.5	22	0,47	0,52	0,60	0,48	4	0,52			0,06	11,24	101,26
14	09x	5.5	31	0,55	0,50	0,67	0,46	4	0,55			0,09	16,73	106,89
15	64x	6.1	22	0,62	0,65	0,66	0,61	4	0,64			0,02	3,37	124,41
16	33a	5.1	90	0,61	0,69	0,77	0,69	4	0,69		*	0,07	9,47	135,08
17	47x	4.1	32	0,67	0,77	0,73	0,70	4	0,72		*	0,04	5,95	140,47
18	50	4.1	31	0,79	0,74	0,65	0,79	4	0,74		*	0,07	8,96	145,41
19	36x	5.5	31	0,91	0,90	0,92	0,90	4	0,91		*	0,01	1,06	177,67
20	04	9.1	41	0,90	1,10	1,00	1,10	4	1,03		*	0,10	9,34	200,67
21	25x	5.1	22	*2,39*	*2,32*	*2,56*	*2,43*	0	2,43	b	*	0,10	4,16	474,75
22														
23														
24	06x	5.2	31	<3	<3	<3	<3							
25	17x	5.5	32	<1,5	<1,5	<1,5	<1,5							
26	02x	5.3	31	<,4	<,4	0,60	0,50							
27														
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	N	Mean	SI	VI
all labs	80	**0,51**	**0,047**	**9,264**
30	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Pb **Sample: 4 (Ash Leaves - Belgium)** 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	43x	4.1	32	*0,30*	*0,30*	*0,30*	*0,60*	0	0,38	b	*	0,15	40,00	52,34
2	18x	6.4	31	0,45	0,62	0,67	0,51	4	0,56			0,10	18,18	78,47
3	48x	4.1	35	0,59	0,58	0,59	0,62	4	0,60			0,01	2,37	83,32
4	09x	5.5	31	0,61	0,69	0,54	0,58	4	0,61			0,06	10,72	84,44
5	39x	5.5	35	0,63	0,63	0,65	0,67	4	0,65			0,02	2,97	90,02
6	38x	5.5	35	0,69	0,67	0,67	0,66	4	0,67			0,01	1,87	93,86
7	60	3.1	22	0,67	0,60	0,78	0,65	4	0,68			0,08	11,20	94,59
8	37x	5.5	35	0,72	0,69	0,70	0,69	4	0,70			0,01	2,01	98,15
9	50	4.1	31	0,76	0,66	0,65	0,78	4	0,71			0,07	9,80	99,58
10	44x	4.1	32	0,74	0,71	0,70	0,72	4	0,72			0,02	2,38	100,14
11	33a	5.1	90	0,74	0,71	0,70	0,77	4	0,73			0,03	4,33	101,89
12	26	5.1	35	0,83	0,54	0,74	0,86	4	0,75			0,14	19,34	104,05
13	08	6.3	32	0,77	0,73	0,77	0,79	4	0,76			0,03	3,58	106,63
14	04a	5.5	22	0,81	0,77	0,76	0,83	4	0,79			0,03	4,15	110,89
15	56	5.5	22	0,81	0,78	0,87	0,84	4	0,82			0,04	4,71	114,94
16	47x	4.1	32	0,87	0,74	0,87	0,90	4	0,85			0,07	8,45	117,94
17	03	4.1	22	0,80	0,90	0,94	0,83	4	0,87			0,06	7,37	121,08
18	36x	5.5	31	*1,07*	*1,04*	*1,09*	*1,07*	0	1,07	b	*	0,02	1,93	148,99
19	64x	6.1	22	*1,32*	*1,40*	*1,29*	*1,29*	0	1,32	b	*	0,05	3,97	184,69
20	25x	5.1	22	*2,63*	*2,54*	*2,33*	*2,45*	0	2,49	b	*	0,13	5,15	347,18
21														
22														
23	06x	5.2		<3	<3	<3	<3							
24	04	9.1		<1,5	<1,5	<1,5	<1,5							
25	17x	5.5		<1,5	<1,5	<1,5	<1,5							
26	02x	5.3		<,4	0,60	<,4	0,70							
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	N	Mean	SI	VI
all labs	64	**0,72**	**0,050**	**6,981**
30	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Cd **Sample: 1 (Pine Needles - Finland)** 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	33a	5.1	90	48,51	50,52	51,16	48,18	4	49,59		*	1,47	2,96	63,07
2	36x	5.5	31	58,00	61,40	60,80	62,90	4	60,78			2,05	3,37	77,29
3	60	3.1	22	71,00	70,00	70,00	70,00	4	70,25			0,50	0,71	89,34
4	26	5.1	35	76,00	75,00	59,00	72,00	4	70,50			7,85	11,14	89,66
5	48x	4.1	35	71,41	73,04	72,83	71,53	4	72,20			0,85	1,18	91,83
6	39x	5.5	35	76,90	73,20	76,70	74,80	4	75,40			1,75	2,31	95,89
7	47x	4.1	32	80,00	75,00	71,00	79,00	4	76,25			4,11	5,39	96,97
8	09x	5.5	31	89,00	74,00	88,00	56,00	4	76,75			15,44	20,11	97,61
9	38x	5.5	35	78,00	76,00	77,00	78,00	4	77,25			0,96	1,24	98,24
10	37x	5.5	35	77,00	79,00	79,00	79,00	4	78,50			1,00	1,27	99,83
11	50	4.1	31	82,70	73,60	79,40	79,50	4	78,80			3,79	4,81	100,22
12	43x	4.1	32	78,00	82,00	86,00	*129a*	3	82,00			4,00	4,88	104,29
13	08	6.3	32	86,40	82,20	80,60	81,20	4	82,60			2,62	3,17	105,05
14	03	4.1	22	81,00	84,00	82,00	85,00	4	83,00			1,83	2,20	105,56
15	42	4.1	22	87,50	84,20	83,10	85,30	4	85,03			1,88	2,21	108,13
16	56	5.5	22	93,00	87,00	83,00	79,00	4	85,50			5,97	6,98	108,74
17	04a	5.5	22	85,00	84,00	88,00	87,00	4	86,00			1,83	2,12	109,37
18	64x	6.1	22	100,62	104,49	94,89	98,69	4	99,67			4,00	4,01	126,76
19	18x	6.4	31	105,00	125,00	89,00	100,00	4	104,75		*	15,06	14,38	133,22
20	25x	5.1	22	*121,00*	*132,00*	*132,00*	*129,00*	0	128,50	b	*	5,20	4,04	163,42
21														
22														
23	06x	5.2	31	<600	<600	<600	<600							
24	44x	4.1	32	<150	<150	<150	<150							
25	17x	5.5	32	<100	<100	<100	<100							
26														
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	N	Mean	SI	VI
all labs	75	**78,63**	**4,050**	**5,151**
30	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Cd **Sample: 2 (Spruce needles - Germany)** 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	60	3.1	22	33,00	33,00	33,00	34,00	4	33,25		0,50	1,50	81,10
2	09x	5.5	31	*24a*	36,00	37,00	37,00	3	36,67		0,58	1,57	89,43
3	48x	4.1	35	35,30	34,38	34,98	34,25	4	34,73		0,50	1,43	84,70
4	47x	4.1	32	35,00	34,00	33,00	38,00	4	35,00		2,16	6,17	85,37
5	26	5.1	35	34,00	34,60	39,90	40,20	4	37,18		3,33	8,96	90,67
6	42	4.1	22	41,80	37,50	37,50	34,30	4	37,78		3,08	8,15	92,13
7	38x	5.5	35	39,00	38,00	40,00	37,00	4	38,50		1,29	3,35	93,90
8	08	6.3	32	38,20	41,50	39,40	36,50	4	38,90		2,10	5,40	94,88
9	39x	5.5	35	39,00	39,60	39,90	40,00	4	39,63		0,45	1,14	96,65
10	43x	4.1	32	44,00	32,00	37,00	48,00	4	40,25		7,14	17,73	98,17
11	03	4.1	22	40,00	42,00	38,00	41,00	4	40,25		1,71	4,24	98,17
12	37x	5.5	35	41,00	41,00	39,00	42,00	4	40,75		1,26	3,09	99,39
13	33a	5.1	90	39,63	44,56	41,93	37,00	4	40,78		3,23	7,91	99,46
14	18x	6.4	31	*37,00*	*55,00*	*53,00*	*19,00*	0	41,00	c	16,73	40,81	100,00
15	56	5.5	22	46,00	42,00	43,00	40,00	4	42,75		2,50	5,85	104,27
16	04a	5.5	22	43,00	42,00	44,00	46,00	4	43,75		1,71	3,90	106,71
17	50	4.1	31	40,20	44,40	48,20	50,70	4	45,88		4,59	9,99	111,89
18	25x	5.1	22	48,00	48,00	47,00	49,00	4	48,00		0,82	1,70	117,07
19	64x	6.1	22	53,35	59,22	47,48	46,95	4	51,75		5,76	11,14	126,22
20	36x	5.5	31	51,70	53,10	50,80	53,00	4	52,15		1,10	2,12	127,19
21													
22													
23	06x	5.2	31	<600	<600	<600	<600						
24	44x	4.1	32	<150	<150	<150	<150						
25	17x	5.5	32	<100	<100	<100	<100						
26													
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	N	Mean	SI	VI
all labs	75	**41,00**	**2,305**	**5,621**
30	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Cd **Sample: 3 (Beech Leaves - Croatia)** 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	36x	5.5	31	114,10	117,30	120,00	118,80	4	117,55			2,55	2,17	78,53
2	17x	5.5	32	124,70	129,60	128,30	125,80	4	127,10			2,25	1,77	84,91
3	26	5.1	35	135,00	149,00	141,00	111,00	4	134,00			16,37	12,22	89,52
4	60	3.1	22	137,00	139,00	139,00	134,00	4	137,25			2,36	1,72	91,69
5	33a	5.1	90	124,38	161,62	141,96	140,99	4	142,24			15,23	10,71	95,03
6	48x	4.1	35	143,50	143,50	140,60	142,20	4	142,45			1,38	0,97	95,17
7	37x	5.5	35	147,00	151,00	149,00	147,00	4	148,50			1,91	1,29	99,21
8	09x	5.5	31	142,00	145,00	149,00	166,00	4	150,50			10,72	7,13	100,55
9	47x	4.1	32	148,00	153,00	155,00	149,00	4	151,25			3,30	2,18	101,05
10	38x	5.5	35	150,00	150,00	150,00	160,00	4	152,50			5,00	3,28	101,88
11	50	4.1	31	153,00	153,00	155,00	152,00	4	153,25			1,26	0,82	102,38
12	42	4.1	22	159,40	148,80	148,80	159,40	4	154,10			6,12	3,97	102,95
13	18x	6.4	31	168,00	148,00	133,00	175,00	4	156,00			19,13	12,26	104,22
14	04a	5.5	22	159,00	164,00	150,00	155,00	4	157,00			5,94	3,79	104,89
15	39x	5.5	35	156,60	158,20	160,70	160,00	4	158,88			1,85	1,16	106,14
16	43x	4.1	32	161,00	156,00	154,00	165,00	4	159,00			4,97	3,12	106,23
17	08	6.3	32	155,00	167,00	160,00	159,00	4	160,25			4,99	3,11	107,06
18	64x	6.1	22	*177,51a*	164,26	164,26	161,08	3	163,20			1,84	1,12	109,03
19	03	4.1	22	160,00	161,00	167,00	169,00	4	164,25			4,43	2,69	109,73
20	56	5.5	22	162,00	168,00	173,00	168,00	4	167,75			4,50	2,68	112,07
21	25x	5.1	22	*247,00*	*273,00*	*268,00*	*255,00*	0	260,75	b	*	11,90	4,56	174,20
22														
23														
24	06x	5.2	31	<600	<600	<600	<600							
25	44x	4.1	32	<150	<150	<150	<150							
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	N	Mean	SI	VI
all labs	79	**149,68**	**5,805**	**3,878**
30	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: Cd **Sample: 4 (Ash Leaves - Belgium)** 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	36x	5.5	31	19,40	18,60	18,00	20,00	4	19,00		*	0,88	4,63	67,75
2	43x	4.1	32	19,00	17,00	19,00	23,00	4	19,50		*	2,52	12,91	69,54
3	09x	5.5	31	21,00	22,00	25,00	19,00	4	21,75			2,50	11,49	77,56
4	60	3.1	22	23,00	22,00	22,00	21,00	4	22,00			0,82	3,71	78,45
5	48x	4.1	35	24,08	24,10	24,55	25,09	4	24,46			0,48	1,95	87,20
6	42	4.1	22	32,30	23,70	23,70	22,60	4	25,58			4,51	17,65	91,20
7	39x	5.5	35	27,50	28,10	29,50	27,50	4	28,15			0,94	3,35	100,38
8	47x	4.1	32	31,00	29,00	28,00	28,00	4	29,00			1,41	4,88	103,41
9	56	5.5	22	26,00	32,00	29,00	29,00	4	29,00			2,45	8,45	103,41
10	26	5.1	35	33,00	33,00	27,00	25,00	4	29,50			4,12	13,98	105,19
11	08	6.3	32	27,90	34,60	27,90	32,40	4	30,70			3,36	10,93	109,47
12	38x	5.5	35	30,00	31,00	32,00	32,00	4	31,25			0,96	3,06	111,44
13	03	4.1	22	32,00	33,00	31,00	30,00	4	31,50			1,29	4,10	112,33
14	37x	5.5	35	33,00	32,00	33,00	31,00	4	32,25			0,96	2,97	115,00
15	04a	5.5	22	34,00	34,00	34,00	31,00	4	33,25			1,50	4,51	118,57
16	64x	6.1	22	36,25	35,40	32,18	30,89	4	33,68			2,56	7,59	120,10
17	50	4.1	31	35,30	39,60	32,30	37,50	4	36,18			3,12	8,63	129,00
18	18x	6.4	31	*18,00*	*55,00*	*75,00*	*38,00*	0	46,50	b	*	24,28	52,22	165,82
19	33a	5.1	90	*43,35*	*50,47*	*67,11*	*67,15*	0	57,02	b	*	12,03	21,10	203,33
20	25x	5.1	22	*84,00*	*79,00*	*83,00*	*87,00*	0	83,25	b	*	3,30	3,97	296,86
21														
22														
23	06x	5.2	31	<600	<600	<600	<600							
24	44x	4.1	32	<150	<150	<150	<150							
25	17x	5.5	32	<100	<100	<100	<100							
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	N	Mean	SI	VI
all labs	68	**28,04**	**2,022**	**7,210**
30	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: B **Sample: 1 (Pine Needles - Finland)** 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	*1,01*	*1,05*	*1,08*	*1,08*	0	1,06	b	*	0,03	3,14	17,65
2	26	5.1	31	4,86	4,34	4,36	4,19	4	4,44		*	0,29	6,57	74,24
3	06x	5.2	31	4,42	4,76	4,34	4,49	4	4,50		*	0,18	4,05	75,33
4	50x	4.1	31	4,71	4,65	4,82	4,88	4	4,77		*	0,10	2,20	79,72
5	18x	6.4	31	4,86	4,83	4,81	4,76	4	4,82			0,04	0,87	80,55
6	12	5.1	31	5,17	5,07	4,58	4,82	4	4,91			0,26	5,39	82,14
7	48x	4.1	35	5,21	5,14	4,88	4,88	4	5,03			0,17	3,41	84,13
8	66	5.5	31	5,33	5,23	5,32	5,12	4	5,25			0,10	1,86	87,83
9	17x	5.5	31	5,84	5,10	5,20	5,14	4	5,32			0,35	6,56	89,00
10	07x	5.5	31	5,54	5,37	5,65	5,20	4	5,44			0,20	3,62	91,01
11	42	4.1	31	5,55	5,56	5,55	5,56	4	5,56			0,01	0,10	92,93
12	39x	5.5	35	5,69	5,98	5,25	5,50	4	5,61			0,31	5,50	93,77
13	37x	5.5	35	5,52	5,77	5,46	5,68	4	5,61			0,14	2,54	93,81
14	38x	4.5	31	5,83	5,74	5,74	5,48	4	5,70			0,15	2,65	95,32
15	04a	5.5	31	6,78	6,05	6,08	5,63	4	6,13			0,48	7,77	102,60
16	64x	6.5	54.1	6,25	6,68	6,15	6,59	4	6,42			0,26	4,01	107,36
17	52x	4.1	31	7,01	6,70	6,60	6,00	4	6,58			0,42	6,43	110,04
18	28	6.5	54.1	7,00	7,00	7,00	8,00	4	7,25		*	0,50	6,90	121,29
19	56	5.5	31	8,53	7,22	7,70	8,38	4	7,96		*	0,61	7,67	133,13
20	60	3.3	31	9,53	9,52	8,98	7,23	4	8,82		*	1,09	12,34	147,47
21	25x	5.1	31	9,11	9,08	10,00	9,66	4	9,46		*	0,45	4,72	158,31
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23														
24	43	4.1	31	<6	<6	<6	<6							
25	02x	5.3	31	<,6	<,6	<,6	<,6							
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	N	Mean	SI	VI
all labs	80	**5,98**	**0,305**	**5,110**

* = non tolerable mean because more than +/- 20 % from the mean

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: B **Sample: 2 (Spruce needles - Germany)** 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	*3,35*	*3,42*	*3,43*	*3,40*	0	3,40	b	*	0,04	1,05	19,54
2	02x	5.3	31	11,90	10,60	9,70	11,00	4	10,80		*	0,91	8,45	62,08
3	18x	6.4	31	14,00	14,41	14,42	14,11	4	14,24			0,21	1,49	81,83
4	26	5.1	31	14,60	15,00	14,90	14,70	4	14,80			0,18	1,23	85,08
5	43	4.1	31	20,00	15,00	14,00	13,00	4	15,50			3,11	20,06	89,10
6	28	6.5	54.1	16,00	15,00	16,00	16,00	4	15,75			0,50	3,17	90,54
7	50x	4.1	31	15,76	15,57	15,91	15,97	4	15,80			0,18	1,13	90,84
8	06x	5.2	31	16,30	16,10	16,20	15,60	4	16,05			0,31	1,94	92,26
9	17x	5.5	31	16,71	15,95	16,02	15,78	4	16,12			0,41	2,54	92,64
10	12	5.1	31	17,07	15,69	19,02	16,49	4	17,07			1,42	8,32	98,11
11	07x	5.5	31	17,20	17,50	17,20	17,60	4	17,38			0,21	1,19	99,88
12	42	4.1	31	17,60	17,60	17,50	17,60	4	17,58			0,05	0,28	101,03
13	52x	4.1	31	17,33	17,92	17,83	17,59	4	17,67			0,26	1,50	101,56
14	56	5.5	31	18,25	16,61	19,86	15,99	4	17,68			1,74	9,84	101,62
15	64x	6.5	54.1	17,40	17,95	17,76	17,68	4	17,70			0,23	1,29	101,73
16	39x	5.5	35	18,29	18,19	17,99	18,01	4	18,12			0,14	0,80	104,16
17	37x	5.5	35	17,80	18,20	18,50	18,10	4	18,15			0,29	1,59	104,33
18	38x	4.5	31	18,31	18,41	18,52	19,05	4	18,57			0,33	1,78	106,76
19	66	5.5	31	18,60	19,10	18,80	19,00	4	18,88			0,22	1,17	108,50
20	04a	5.5	31	19,50	19,04	20,95	19,25	4	19,69			0,86	4,39	113,16
21	48x	4.1	35	19,69	20,71	21,29	21,28	4	20,74			0,75	3,63	119,24
22	25x	5.1	31	21,90	19,20	22,00	21,60	4	21,18		*	1,33	6,27	121,72
23	60	3.3	31	23,13	24,94	23,79	21,25	4	23,28		*	1,54	6,64	133,81
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	N	Mean	SI	VI
all labs	88	**17,40**	**0,691**	**3,971**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: B **Sample: 3 (Beech Leaves - Croatia)** 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	*2,92*	*2,94*	*3,00*	*2,95*	0	2,95	b	*	0,03	1,15	19,26
2	02x	5.3	31	9,20	9,60	10,80	11,20	4	10,20		*	0,95	9,34	66,54
3	43	4.1	31	45a	14,00	13,00	12,00	3	13,00			1,00	7,69	84,81
4	56	5.5	31	14,30	13,63	13,42	12,89	4	13,56			0,58	4,30	88,46
5	06x	5.2	31	13,50	13,30	14,00	13,70	4	13,63			0,30	2,19	88,89
6	26	5.1	31	13,40	13,90	14,00	13,70	4	13,75			0,26	1,92	89,70
7	50x	4.1	31	13,62	13,78	14,16	13,82	4	13,85			0,23	1,64	90,32
8	17x	5.5	31	14,89	15,08	14,33	14,27	4	14,64			0,40	2,76	95,52
9	64x	6.5	54.1	14,45	15,22	14,65	14,98	4	14,83			0,34	2,31	96,71
10	07x	5.5	31	14,80	15,00	15,60	14,60	4	15,00			0,43	2,88	97,86
11	12	5.1	31	14,61	14,77	16,56	15,03	4	15,24			0,90	5,87	99,44
12	42	4.1	31	15,50	15,40	15,50	15,40	4	15,45			0,06	0,37	100,79
13	18x	6.4	31	15,34	15,26	15,49	15,81	4	15,48			0,24	1,57	100,95
14	37x	5.5	35	16,10	15,90	15,90	16,20	4	16,03			0,15	0,94	104,54
15	38x	4.5	31	16,42	16,21	16,11	16,11	4	16,21			0,15	0,90	105,76
16	52x	4.1	31	16,13	16,66	16,26	16,00	4	16,26			0,29	1,76	106,09
17	66	5.5	31	16,30	16,20	16,60	16,40	4	16,38			0,17	1,04	106,83
18	39x	5.5	35	16,64	16,22	16,82	16,06	4	16,44			0,35	2,16	107,22
19	28	6.5	54.1	17,00	17,00	17,00	17,00	4	17,00			0,00	0,00	110,90
20	04a	5.5	31	17,26	16,29	17,41	17,39	4	17,09			0,54	3,14	111,47
21	60	3.3	31	17,90	18,42	18,88	18,44	4	18,41		*	0,40	2,18	120,10
22	25x	5.1	31	18,70	18,20	19,70	19,00	4	18,90		*	0,63	3,32	123,30
23	48x	4.1	35	*21,58*	*22,22*	*22,54*	*26,07a*	0	22,11	b	*	0,49	2,21	144,26
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	N	Mean	SI	VI
all labs	83	**15,33**	**0,399**	**2,600**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: B **Sample: 4 (Ash Leaves - Belgium)** 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	*5,75*	*5,41*	*5,44*	*5,70*	0	5,58	b	*	0,17	3,14	17,36
2	02x	5.3	31	28,90	27,20	27,40	29,40	4	28,23			1,09	3,86	87,90
3	26	5.1	31	30,50	28,00	27,30	27,80	4	28,40			1,43	5,04	88,45
4	06x	5.2	31	29,60	30,40	26,4a	30,50	3	30,17			0,49	1,64	93,95
5	12	5.1	31	30,20	28,66	30,49	28,82	4	29,54			0,94	3,17	92,01
6	50x	4.1	31	29,58	29,92	29,47	29,85	4	29,71			0,21	0,72	92,51
7	17x	5.5	31	30,29	30,03	31,08	30,63	4	30,51			0,45	1,49	95,01
8	07x	5.5	31	30,90	29,90	30,60	31,10	4	30,63			0,53	1,71	95,38
9	37x	5.5	35	31,60	30,80	30,20	31,90	4	31,13			0,77	2,48	96,94
10	56	5.5	31	29,65	30,94	29,04	*37,53a*	3	29,88			0,97	3,25	93,05
11	38x	4.5	31	32,91	31,31	30,46	33,12	4	31,95			1,28	4,01	99,51
12	42	4.1	31	31,90	32,30	32,30	32,10	4	32,15			0,19	0,60	100,13
13	18x	6.4	31	32,70	32,84	32,48	32,09	4	32,53			0,33	1,01	101,30
14	52x	4.1	31	32,11	33,50	32,20	33,14	4	32,74			0,69	2,11	101,96
15	60	3.3	31	32,80	34,26	32,26	32,79	4	33,03			0,86	2,60	102,86
16	39x	5.5	35	33,00	33,92	34,38	33,91	4	33,80			0,58	1,71	105,28
17	66	5.5	31	34,00	33,60	34,90	35,10	4	34,40			0,72	2,08	107,14
18	04a	5.5	31	35,47	34,49	34,01	34,58	4	34,64			0,61	1,76	107,88
19	28	6.5	54.1	35,00	34,00	35,00	35,00	4	34,75			0,50	1,44	108,23
20	64x	6.5	54.1	36,15	34,82	35,30	35,82	4	35,52			0,58	1,65	110,63
21	43	4.1	31	*33,00*	*29,00*	*41,00*	*44,00*	0	36,75	c		6,95	18,90	114,46
22	25x	5.1	31	37,70	36,80	36,80	38,50	4	37,45			0,82	2,19	116,64
23	48x	4.1	35	*46,89*	*48,51a*	*46,95*	*46,95*	0	46,93	b	*	0,03	0,07	146,16
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	N	Mean	SI	VI
all labs	78	**32,11**	**0,702**	**2,187**
20	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: C **Sample: 1 (Pine Needles - Finland)** 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	02x	1	15	49,60	45,50	48,70	48,40	4	48,05	*	1,77	3,69	93,11
2	19	1	15.1	49,14	49,28	49,18	49,29	4	49,22		0,07	0,15	95,38
3	06x	1	15.1	50,84	49,20	49,20	49,24	4	49,62		0,81	1,64	96,14
4	50x	1	17.1	49,94	49,71	49,52	50,32	4	49,87		0,34	0,69	96,64
5	43	1	15.2	50,20	50,10	50,40	50,30	4	50,25		0,13	0,26	97,37
6	12x	1	17.1	50,46	50,58	50,06	49,95	4	50,26		0,30	0,61	97,39
7	52x	0	15.2	50,40	50,39	50,35	50,40	4	50,39		0,02	0,05	97,63
8	46	0	18.2	50,99	50,89	50,78	50,70	4	50,84		0,13	0,25	98,51
9	20x	1	15.2	50,86	50,85	51,15	51,26	4	51,03		0,21	0,41	98,88
10	15	1	17	51,80	51,60	50,80	50,80	4	51,25		0,53	1,03	99,31
11	17x	1	17	51,50	51,50	51,40	51,40	4	51,45		0,06	0,11	99,69
12	03	1	15.2	51,72	51,49	51,72	51,47	4	51,60		0,14	0,27	99,99
13	38x	1	15.3	51,80	51,60	51,40	51,70	4	51,63		0,17	0,33	100,03
14	13	1	17.1	51,29	52,04	51,61	51,83	4	51,69		0,32	0,62	100,16
15	64x	1	13	52,82	51,63	51,74	51,09	4	51,82		0,72	1,40	100,41
16	49	1	15.4	51,83	51,82	51,89	51,77	4	51,83		0,05	0,10	100,43
17	25x	1	17	51,90	51,70	52,00	51,80	4	51,85		0,13	0,25	100,47
18	42	1	15.2	51,72	51,83	51,94	51,94	4	51,86		0,11	0,20	100,48
19	01x	1	17.1	52,45	51,94	51,90	51,96	4	52,06		0,26	0,50	100,88
20	48x	1	15.4	52,25	52,12	52,09	52,07	4	52,13		0,08	0,16	101,02
21	39x	7	10	52,60	52,30	52,50	51,40	4	52,20		0,55	1,05	101,15
22	56	7	15.4	52,13	52,09	52,47	52,84	4	52,38		0,35	0,67	101,50
23	44x	1	15	52,41	52,40	52,43	52,37	4	52,40		0,02	0,05	101,54
24	07	0	18.1	52,40	52,40	52,60	52,60	4	52,50		0,12	0,22	101,73
25	66	1	15.2	52,90	52,90	52,90	52,90	4	52,90		0,00	0,00	102,50
26	08	1	15.2	53,30	53,20	53,00	53,00	4	53,13		0,15	0,28	102,94
27	04a	1	13.1	53,02	54,26	53,41	53,34	4	53,51		0,53	0,99	103,68
28	36x	3.32	82.3	53,68	53,80	53,55	53,12	4	53,54		0,30	0,55	103,74
29	09	0	13	55,50	55,34	55,26	55,38	4	55,37	*	0,10	0,18	107,29
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	N	Mean	SI	VI
all labs	116	**51,61**	**0,292**	**0,566**
5	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: C **Sample: 2 (Spruce needles - Germany)** 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	19	1	15.1	48,87	48,35	48,44	48,97	4	48,66	*	0,31	0,63	94,11
2	06x	1	15.1	49,32	49,55	49,45	49,51	4	49,46		0,10	0,21	95,66
3	02x	1	15	48,60	49,90	50,90	49,00	4	49,60		1,02	2,06	95,93
4	50x	1	17.1	50,04	49,89	50,22	50,28	4	50,11		0,18	0,35	96,91
5	43	1	15.2	50,60	49,70	50,10	50,40	4	50,20		0,39	0,78	97,09
6	12x	1	17.1	50,91	50,89	50,38	50,50	4	50,67		0,27	0,53	98,00
7	52x	0	15.2	50,80	50,81	50,82	50,80	4	50,81		0,01	0,02	98,27
8	46	0	18.2	51,30	51,15	51,12	51,13	4	51,18		0,08	0,16	98,98
9	15	1	17	51,20	51,20	51,80	51,70	4	51,48		0,32	0,62	99,56
10	20x	1	15.2	51,36	51,15	51,66	51,85	4	51,51		0,31	0,60	99,62
11	38x	1	15.3	51,60	51,70	51,70	51,60	4	51,65		0,06	0,11	99,90
12	17x	1	17	51,80	51,80	51,70	51,70	4	51,75		0,06	0,11	100,09
13	42	1	15.2	52,02	52,02	52,02	52,13	4	52,05		0,05	0,11	100,67
14	03	1	15.2	52,12	52,24	52,16	52,11	4	52,16		0,06	0,11	100,88
15	49	1	15.4	52,15	52,31	52,18	52,08	4	52,18		0,10	0,18	100,92
16	48x	1	15.4	52,18	52,13	52,19	52,19	4	52,17		0,01	0,01	100,94
17	36x	3.32	82.3	52,50	52,19	52,07	52,23	4	52,25		0,18	0,35	101,05
18	25x	1	17	52,20	52,70	51,90	52,20	4	52,25		0,33	0,63	101,06
19	13	1	17.1	52,24	52,46	52,14	52,24	4	52,27		0,14	0,26	101,10
20	01x	1	17.1	52,35	52,43	52,20	52,27	4	52,31		0,10	0,19	101,18
21	64x	1	13	52,57	52,44	52,29	52,12	4	52,36		0,19	0,37	101,26
22	07	0	18.1	52,40	52,50	52,40	52,30	4	52,40		0,08	0,16	101,35
23	56	7	15.4	52,15	52,21	52,42	52,92	4	52,43		0,35	0,67	101,40
24	44x	1	15	52,32	52,47	52,45	52,64	4	52,47		0,13	0,25	101,48
25	08	1	15.2	53,00	53,20	53,30	53,10	4	53,15		0,13	0,24	102,80
26	66	1	15.2	53,60	53,40	52,60	53,40	4	53,25		0,44	0,83	102,99
27	39x	7	10	53,00	53,30	53,70	53,20	4	53,30		0,29	0,55	103,09
28	04a	1	13.1	53,57	54,03	54,62	52,77	4	53,75		0,78	1,45	103,95
29	09	0	13	*56,50*	*56,04*	*56,35*	*56,07*	0	56,24	b *	0,22	0,40	108,78
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	N	Mean	SI	VI
all labs	111	**51,70**	**0,231**	**0,448**
5	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: C **Sample: 3 (Beech Leaves - Croatia)** 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	19	1	15.1	48,61	48,30	48,41	48,70	4	48,51			0,18	0,38	95,76
2	06x	1	15.1	48,88	48,62	48,82	48,51	4	48,70			0,17	0,35	96,15
3	02x	1	15	49,80	48,10	49,00	48,00	4	48,73			0,85	1,74	96,19
4	43	1	15.2	49,30	49,50	49,40	49,20	4	49,35			0,13	0,26	97,43
5	12x	1	17.1	49,82	49,65	49,38	49,31	4	49,54			0,24	0,48	97,80
6	50x	1	17.1	49,28	49,76	49,74	49,46	4	49,56			0,23	0,47	97,84
7	36x	3.32	82.3	49,17	50,08	49,76	49,72	4	49,68			0,38	0,76	98,08
8	46	0	18.2	49,95	49,74	49,69	49,61	4	49,75			0,15	0,29	98,21
9	52x	0	15.2	49,81	49,80	49,80	49,85	4	49,82			0,02	0,05	98,35
10	20x	1	15.2	50,21	49,84	49,93	50,01	4	50,00			0,16	0,32	98,71
11	48x	1	15.4	50,59	50,74	50,69	50,70	4	50,68			0,06	0,13	100,05
12	17x	1	17	50,90	50,90	50,90	50,80	4	50,88			0,05	0,10	100,44
13	38x	1	15.3	50,80	50,70	51,30	50,70	4	50,88			0,29	0,56	100,44
14	42	1	15.2	50,80	50,80	51,02	50,91	4	50,88			0,11	0,21	100,45
15	07	0	18.1	50,90	50,90	50,90	50,90	4	50,90			0,00	0,00	100,49
16	49	1	15.4	51,04	50,82	51,00	50,79	4	50,91			0,13	0,25	100,51
17	03	1	15.2	51,06	51,02	50,97	50,96	4	51,00			0,05	0,09	100,69
18	56	7	15.4	50,90	50,69	51,18	51,47	4	51,06			0,34	0,66	100,80
19	13	1	17.1	51,16	51,38	50,74	51,06	4	51,09			0,27	0,52	100,85
20	15	1	17	50,80	50,80	51,50	51,50	4	51,15			0,40	0,79	100,98
21	01x	1	17.1	52,03	51,30	51,21	51,27	4	51,45			0,39	0,75	101,58
22	25x	1	17	51,60	51,80	51,60	51,60	4	51,65			0,10	0,19	101,97
23	64x	1	13	50,91	51,39	51,94	52,72	4	51,74			0,78	1,50	102,15
24	39x	7	10	52,20	51,60	51,40	51,90	4	51,78			0,35	0,68	102,22
25	44x	1	15	51,71	51,84	51,88	51,92	4	51,84			0,09	0,18	102,34
26	08	1	15.2	51,80	51,80	51,90	51,90	4	51,85			0,06	0,11	102,36
27	66	1	15.2	52,00	52,20	52,50	52,30	4	52,25			0,21	0,40	103,15
28	04a	1	13.1	51,83	51,66	53,94	53,24	4	52,67			1,11	2,10	103,98
29	09	0	13	*54,65*	*54,39*	*55,01*	*54,59*	0	54,66	b	*	0,26	0,47	107,91
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	N	Mean	SI	VI
all labs	112	**50,65**	**0,260**	**0,512**
5	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Element: C **Sample: 4 (Ash Leaves - Belgium)** 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	19	1	15.1	43,52	43,60	43,93	43,95	4	43,75		*	0,22	0,51	93,47
2	06x	1	15.1	44,59	44,54	44,53	44,51	4	44,55			0,03	0,07	95,17
3	02x	1	15	45,30	45,30	44,10	43,80	4	44,63			0,79	1,77	95,34
4	36x	3.32	82.3	45,42	45,35	45,15	45,50	4	45,36			0,15	0,33	96,90
5	50x	1	17.1	45,17	45,63	45,31	45,40	4	45,38			0,19	0,43	96,95
6	12x	1	17.1	45,64	45,42	45,26	45,29	4	45,40			0,17	0,38	97,00
7	52x	0	15.2	45,70	45,60	45,60	45,60	4	45,63			0,05	0,11	97,48
8	43	1	15.2	46,20	46,20	45,70	45,70	4	45,95			0,29	0,63	98,17
9	46	0	18.2	46,37	46,30	46,14	46,19	4	46,25			0,10	0,23	98,81
10	49	1	15.4	46,50	46,45	46,35	46,52	4	46,46			0,08	0,16	99,25
11	20x	1	15.2	46,34	46,55	46,95	46,74	4	46,65			0,26	0,56	99,66
12	01x	1	17.1	46,67	46,66	46,52	46,74	4	46,65			0,09	0,20	99,66
13	13	1	17.1	46,88	46,99	46,56	46,67	4	46,78			0,20	0,42	99,93
14	03	1	15.2	46,64	47,07	46,70	47,00	4	46,85			0,21	0,46	100,10
15	25x	1	17	47,30	46,70	46,60	46,90	4	46,88			0,31	0,66	100,15
16	17x	1	17	47,00	46,90	46,90	47,00	4	46,95			0,06	0,12	100,31
17	38x	1	15.3	47,00	47,20	47,00	47,10	4	47,08			0,10	0,20	100,57
18	48x	1	15.4	47,48	47,21	47,04	46,97	4	47,18			0,23	0,48	100,79
19	07	0	18.1	47,20	47,20	47,30	47,30	4	47,25			0,06	0,12	100,95
20	39x	7	10	47,40	47,60	47,00	47,40	4	47,35			0,25	0,53	101,16
21	56	7	15.4	47,00	47,38	47,58	47,67	4	47,41			0,30	0,63	101,28
22	42	1	15.2	47,25	47,46	47,46	47,51	4	47,42			0,12	0,24	101,31
23	44x	1	15	47,86	47,86	47,84	47,86	4	47,86			0,01	0,02	102,24
24	66	1	15.2	48,40	48,30	48,00	48,40	4	48,28			0,19	0,39	103,14
25	15	1	17	48,30	48,00	49,10	48,10	4	48,38			0,50	1,03	103,35
26	08	1	15.2	48,80	48,50	48,50	48,50	4	48,58			0,15	0,31	103,78
27	04a	1	13.1	48,88	49,64	49,93	49,36	4	49,45		*	0,45	0,90	105,65
28	09	0	13	50,25	50,59	50,29	50,02	4	50,29		*	0,23	0,47	107,44
29	64x	1	13	*52,34*	*51,56*	*51,49*	*50,42*	0	51,45	b	*	0,79	1,53	109,93
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	N	Mean	SI	VI
all labs	112	**46,81**	**0,206**	**0,441**
5	% from the mean			

* = non tolerable mean because more than +/-

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Al	µg/g	1	26	5.1	31	329	333	309	306	319,25	13,720	4,298
			06	5.2	31	321	326	323	326	324,00	2,449	0,756
			04a	9.1	42	345,5	342,5	343,5	312,3	335,95	15,816	4,708
			56	5.5	31	342	333	332	337	336,00	4,546	1,353
			49	4.1	31	333,05	350,21	336,82	328,87	337,24	9,238	2,739
			43	4.1	31	348	346	354	343	347,75	4,646	1,336
			48	4.1	31	350,7	351,7	351,1	348,5	350,50	1,395	0,398
			47	4.1	32	348	347	352	359	351,50	5,447	1,550
			09	5.5	31	353,7	355,8	357,3	363,7	357,63	4,311	1,205
			52	4.1	31	355,8	357,2	360,9	359,8	358,43	2,339	0,652
			42	4.1	31	357,4	359,6	359,6	360,7	359,33	1,384	0,385
			12	5.1	31	377,5	362,8	354	359,3	363,40	10,072	2,772
			02	5.3	31	371	364	360	367	365,50	4,655	1,274
			50	4.1	31	365,9	368,5	365	364,9	366,08	1,678	0,458
			18	6.4	31	380,2	363,1	372,9	356,3	368,13	10,547	2,865
			25	5.1	31	409	392	402	416	404,75	10,243	2,531
			38a	9.1	42	451	447	447	446	447,75	2,217	0,495
Al	µg/g	2	04a	9.1	42	84	78,5	77,8	74,7	78,75	3,870	4,914
			26	5.1	31	112	112	109	110	110,75	1,500	1,354
			09	5.5	31	120,2	125,6	117,3	128,3	122,85	5,003	4,072
			02	5.3	31	134	133	130	135	133,00	2,160	1,624
			56	5.5	31	148	150	140	140	144,50	5,260	3,640
			48	4.1	31	150,6	148,3	148,9	149,4	149,30	0,976	0,654
			42	4.1	31	149,1	151,2	152,3	149,1	150,43	1,595	1,060
			52	4.1	31	150	153,8	153,2	151,2	152,05	1,762	1,159
			06	5.2	31	154	155	152	149	152,50	2,646	1,735
			47	4.1	32	152	148	153	158	152,75	4,113	2,693
			43	4.1	31	149	181	145	148	155,75	16,919	10,863
			12	5.1	31	169,3	165,9	158,6	158	162,95	5,551	3,407

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Al	µg/g	2	49	4.1	31	167,57	166,74	165	164,23	165,89	1,538	0,927
			25	5.1	31	171	166	168	173	169,50	3,109	1,834
			50	4.1	31	179,5	183,7	159,2	182,2	176,15	11,433	6,490
			18	6.4	31	224,6	178,6	181,3	194,2	194,68	21,079	10,828
			38a	9.1	42	195	192	201	199	196,75	4,031	2,049
Al	µg/g	3	26	5.1	31	53,6	54,5	50,8	52,2	52,78	1,621	3,072
			09	5.5	31	54,06	56,26	55,55	53,25	54,78	1,371	2,504
			02	5.3	31	74	80	75	73	75,50	3,109	4,118
			56	5.5	31	84,1	94,1	85,6	86	87,45	4,508	5,155
			52	4.1	31	89,5	88,3	89,1	88,9	88,95	0,500	0,562
			42	4.1	31	96,1	89,3	89,8	91,2	91,60	3,106	3,391
			06	5.2	31	92	92,7	91,9	90,7	91,83	0,830	0,904
			48	4.1	31	93,4	92,73	93,15	92,93	93,05	0,288	0,310
			43	4.1	31	90	91	93	99	93,25	4,031	4,323
			47	4.1	32	95	93	96	96	95,00	1,414	1,489
			12	5.1	31	94,2	101,1	95,9	99	97,55	3,090	3,168
			25	5.1	31	99,2	111	105	103	104,55	4,927	4,713
			18	6.4	31	141,3	109,2	88,5	102,5	110,38	22,348	20,247
			04a	9.1	42	127	110	110	106	113,25	9,359	8,264
			50	4.1	31	148,9	122,3	121,2	136	132,10	13,068	9,892
			49	4.1	31	132,64	134,52	134,73	131,71	133,40	1,467	1,100
			38a	9.1	42	134	136	134	137	135,25	1,500	1,109
Al	µg/g	4	09	5.5	31	17,15	16,56	19,55	18,3	17,89	1,322	7,388
			26	5.1	31	22,4	20,5	18,2	19,7	20,20	1,749	8,660
			04a	9.1	42	33,5	25	47	17,7	30,80	12,583	40,853
			52	4.1	31	32,2	31,1	31,1	33,8	32,05	1,277	3,984
			43	4.1	31	35	34	34	37	35,00	1,414	4,041
			48	4.1	31	40,68	39,69	42,46	40,31	40,79	1,189	2,915
			56	5.5	31	41,5	46,9	46,3	43,9	44,65	2,468	5,527

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Al	µg/g	4	12	5.1	31	46,4	42	42,5	48,3	44,80	3,052	6,812
			02	5.3	31	46	47	45	47	46,25	0,957	2,070
			47	4.1	32	49	46	45	45	46,25	1,893	4,093
			06	5.2	31	48,1	46,4	44,2	47,6	46,58	1,737	3,729
			42	4.1	31	51,2	46,1	47,8	48,3	48,35	2,121	4,386
			25	5.1	31	50,4	52,9	50	48,2	50,38	1,936	3,844
			18	6.4	31	60,2	76	52,2	47	58,85	12,657	21,507
			50	4.1	31	72,45	51,19	56,76	64,45	61,21	9,256	15,122
			38a	9.1	42	81,4	82,3	82,1	77,1	80,73	2,447	3,032
			49	4.1	31	109	106,9	108	109	108,23	1,001	0,925
As	µg/g	1	48	4.1	35	0,0192	0,0176	0,0203	0,0185	0,02	0,001	6,033
As	µg/g	2	48	4.1	35	0,1321	0,132	0,1332	0,1328	0,13	0,001	0,433
As	µg/g	3	48	4.1	35	0,0277	0,028	0,0288	0,0288	0,03	0,001	1,984
As	µg/g	4	48	4.1	35	0,0969	0,0947	0,1003	0,0954	0,10	0,002	2,574
Ba	µg/g	1	06	5.2	31	<1,8	<1,8	<1,8	<1,8			
			02	5.3	31	0,9	0,8	0,7	0,7	0,78	0,096	12,354
			50	4.1	31	1,586	1,585	1,594	1,585	1,59	0,004	0,275
			26	5.1	31	1,68	1,66	1,57	1,54	1,61	0,068	4,218
			48	4.1	35	1,822	1,779	1,795	1,763	1,79	0,025	1,406
Ba	µg/g	2	02	5.3	31	2,7	2,6	2,6	2,6	2,63	0,050	1,905
			26	5.1	31	3,32	3,37	3,33	3,3	3,33	0,029	0,884
			50	4.1	31	3,338	3,341	3,335	3,363	3,34	0,013	0,381
			06	5.2	31	3,61	3,7	3,58	3,51	3,60	0,079	2,187
			48	4.1	35	3,882	3,829	3,762	3,817	3,82	0,049	1,288
Ba	µg/g	3	50	4.1	31	73	73,35	73,85	72	73,05	0,782	1,071
			48	4.1	35	76,01	76,42	78,18	77,84	77,11	1,059	1,373
			26	5.1	31	81,2	83,1	80,7	81,1	81,53	1,072	1,315
			02	5.3	31	82,8	80,5	83	82,6	82,23	1,162	1,413
			06	5.2	31	82,9	81,3	83,5	84,2	82,98	1,237	1,490

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Ba	µg/g	4	50	4.1	31	11,48	11,32	11,29	11,41	11,38	0,087	0,761
			26	5.1	31	12,5	12	11,3	11,6	11,85	0,520	4,385
			02	5.3	31	12,4	11,9	12,2	12,5	12,25	0,265	2,160
			06	5.2	31	12,9	12,9	12,6	13	12,85	0,173	1,348
			48	4.1	35	13,66	13,68	13,93	13,78	13,76	0,123	0,897
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	<1	<1	<1	<1			
Br	µg/g	4	38a	9.1	42	8,9	8,9	9,1	9	8,98	0,096	1,067
Cl	µg/g	1	03	2.2	82	270	290	270	270	275,00	10,000	3,636
			12	2.1	60	316	297	298	306	304,25	8,808	2,895
			04a	9.1	42	355	370	375	373,3	368,33	9,123	2,477
			38a	9.1	42	375	370	376	369	372,50	3,512	0,943
			50	7.3	61.2	570	620	650	600	610,00	33,665	5,519
Cl	µg/g	2	12	2.1	60	369	396	378	377	380,00	11,402	3,000
			03	2.2	82	400	370	400	370	385,00	17,321	4,499
			38a	9.1	42	456	450	452	453	452,75	2,500	0,552
			04a	9.1	42	480	505	510	517	503,00	16,104	3,202
			50	7.3	61.2	770	660	700	640	692,50	57,373	8,285
Cl	µg/g	3	03	2.2	82	<100	<100	<100	<100			
			12	2.1	60	<20	<20	<20	<20			
			38a	9.1	42	72	68	70	70	70,00	1,633	2,333
			04a	9.1	42	115	120	120	120	118,75	2,500	2,105
			50	7.3	61.2	340	290	380	260	317,50	53,151	16,740
Cl	µg/g	4	04a	9.1	42	1630	1750	1745	1780	1726,25	66,002	3,823
			38a	9.1	42	1783	1774	1803	1822	1795,50	21,424	1,193
			03	2.2	82	1830	1830	1880	1850	1847,50	23,629	1,279
			50	7.3	61.2	1860	1940	1900	1980	1920,00	51,640	2,690
			12	2.1	60	2665	2685	2677	2666	2673,25	9,535	0,357

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Co	µg/g	1	06	5.2	31	<1,2	<1,2	<1,2	<1,2			
			44	4.1	32	0,13	0,11	0,1	0,09	0,11	0,017	15,887
			47	4.1	32	0,11	0,11	0,11	0,12	0,11	0,005	4,444
			48	4.1	35	0,1263	0,127	0,1234	0,1255	0,13	0,002	1,242
			50	4.1	31	0,147	0,125	0,144	0,121	0,13	0,013	9,795
Co	µg/g	2	06	5.2	31	<1,2	<1,2	<1,2	<1,2			
			48	4.1	35	0,1006	0,1073	0,1053	0,1021	0,10	0,003	2,923
			47	4.1	32	0,11	0,12	0,11	0,11	0,11	0,005	4,444
			50	4.1	31	0,112	0,113	0,119	0,118	0,12	0,004	3,041
			44	4.1	32	0,14	0,14	0,13	0,15	0,14	0,008	5,832
Co	µg/g	3	06	5.2	31	<1,2	<1,2	<1,2	<1,2			
			50	4.1	31	0,146	0,138	0,156	0,154	0,15	0,008	5,539
			47	4.1	32	0,2	0,2	0,2	0,21	0,20	0,005	2,469
			48	4.1	35	0,2358	0,2392	0,2399	0,244	0,24	0,003	1,404
			44	4.1	32	0,22	0,26	0,3	0,27	0,26	0,033	12,587
Co	µg/g	4	06	5.2	31	<1,2	<1,2	<1,2	<1,2			
			50	4.1	31	<,05	<,05	<,05	<,05			
			47	4.1	32	0,04	0,04	0,05	0,05	0,05	0,006	12,830
			48	4.1	35	0,0716	0,0712	0,0734	0,0704	0,07	0,001	1,771
			44	4.1	32	0,08	0,09	0,08	0,09	0,09	0,006	6,792
Cr	µg/g	1	43	4.1	32	<2,5	<2,5	<2,5	<2,5			
			06	5.2	31	0,69	<,6	0,73	0,7	0,71	0,021	2,946
			09	5.5	31	0,434	0,424	0,453	0,475	0,45	0,022	5,036
			44	4.1	32	0,68	0,68	0,71	0,65	0,68	0,024	3,602
			50	4.1	31	0,832	0,872	0,897	0,834	0,86	0,031	3,662
			47	4.1	32	0,89	0,87	0,83	0,89	0,87	0,028	3,251
			48	4.1	35	0,8981	0,9371	0,9147	0,9033	0,91	0,017	1,896
			56	5.5	31	0,92	1,03	1,06	1,03	1,01	0,062	6,103
			64	6.1	21.1	1,6	1,13	1,33	1,33	1,35	0,193	14,318

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Cr	µg/g	2	09	5.5	31	1,223	1,322	1,775	1,319	1,41	0,248	17,578
			43	4.1	32	4,4	4,4	4	4,3	4,28	0,189	4,428
			56	5.5	31	4,39	4,34	4,22	4,21	4,29	0,089	2,076
			50	4.1	31	4,386	4,35	4,352	4,381	4,37	0,019	0,433
			48	4.1	35	4,291	4,41	4,489	4,43	4,41	0,083	1,886
			44	4.1	32	4,62	4,64	4,55	4,76	4,64	0,087	1,881
			06	5.2	31	5,05	5,72	5,16	4,64	5,14	0,445	8,659
			47	4.1	32	5,68	5,77	5,1	5,37	5,48	0,306	5,581
			64	6.1	21.1	6,4	6,94	5,73	6,23	6,33	0,499	7,889
Cr	µg/g	3	43	4.1	32	<2,5	<2,5	<2,5	<2,5			
			44	4.1	32	0,39	0,43	0,38	0,52	0,43	0,064	14,830
			47	4.1	32	0,61	0,53	0,52	0,58	0,56	0,042	7,576
			50	4.1	31	0,613	0,649	0,621	0,657	0,64	0,021	3,353
			48	4.1	35	0,643	0,6543	0,6565	0,6815	0,66	0,016	2,464
			06	5.2	31	0,66	0,65	0,74	0,61	0,67	0,054	8,191
			56	5.5	31	0,79	0,83	0,82	0,76	0,80	0,032	3,953
			09	5.5	31	1,486	1,426	1,506	1,48	1,47	0,034	2,319
			64	6.1	21.1	1,65	1,36	1,58	1,85	1,61	0,202	12,556
Cr	µg/g	4	43	4.1	32	<2,5	<2,5	<2,5	<2,5			
			06	5.2	31	0,63	<,6	<,6	<,6			
			09	5.5	31	0,265	0,245	0,283	0,174	0,24	0,048	19,756
			44	4.1	32	0,46	0,57	0,47	0,5	0,50	0,050	9,933
			56	5.5	31	0,61	0,57	0,56	0,51	0,56	0,041	7,312
			50	4.1	31	0,569	0,599	0,54	0,614	0,58	0,033	5,659
			47	4.1	32	0,62	0,54	0,63	0,64	0,61	0,046	7,528
			48	4.1	35	0,7887	0,7621	0,7657	0,7523	0,77	0,015	2,009
			64	6.1	21.1	1,61	1,74	1,88	1,61	1,71	0,129	7,535
F	µg/g	1	03	7.1	72.2	3,8	3,5	3,2	3	3,38	0,350	10,370
F	µg/g	2	03	7.1	72.2	4,8	4,1	3,8	3,9	4,15	0,451	10,866

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
F	µg/g	3	03	7.1	72.2	3,9	4,4	4	3,6	3,98	0,330	8,312
F	µg/g	4	03	7.1	72.2	5,3	5	5,4	5,2	5,23	0,171	3,269
Hg	ng/g	1	25	1	22	17,2	17,3	16,9	17,1	17,13	0,171	0,997
Hg	ng/g	2	25	1	22	71	70,3	70,8	71,1	70,80	0,356	0,503
Hg	ng/g	3	25	1	22	20,1	19,9	19,5	20	19,88	0,263	1,323
Hg	ng/g	4	25	1	22	17,3	17,8	18	17,6	17,68	0,299	1,689
Mo	µg/g	1	06	5.2	31	<1,2	<1,2	<1,2	<1,2			
			50	4.1	31	<,25	<,25	<,25	<,25			
			48	4.1	35	0,0633	0,0648	0,0629	0,0646	0,06	0,001	1,474
Mo	µg/g	2	06	5.2	31	<1,2	<1,2	<1,2	<1,2			
			50	4.1	31	0,28	0,3	0,32	0,31	0,30	0,017	5,646
			48	4.1	35	0,3754	0,4089	0,4075	0,3775	0,39	0,018	4,680
Mo	µg/g	3	06	5.2	31	<1,2	<1,2	<1,2	<1,2			
			50	4.1	31	<,25	<,25	<,25	<,25			
			48	4.1	35	0,1277	0,1264	0,1255	0,1303	0,13	0,002	1,638
Mo	µg/g	4	06	5.2	31	<1,2	<1,2	<1,2	<1,2			
			50	4.1	31	0,31	0,38	0,38	0,37	0,36	0,034	9,351
			48	4.1	35	0,4237	0,3968	0,4202	0,403	0,41	0,013	3,178
Na	µg/g	1	38a	9.1	42	<35	<35	<35	<35			
			09	5.5	31	<25	<25	<25	<25			
			02	5.3	31	14,1	<11,1	<11,1	20,6	17,35	4,596	26,491
			18	6.4	31	4,74	4,47	3,87	4,62	4,43	0,386	8,726
			52	4.1	31	6,92	7,12	7,56	7,45	7,26	0,295	4,064
			50	4.1	31	9,865	8,525	9,625	8,675	9,17	0,671	7,316
			06	5.2	31	8,7	9,6	9,1	9,6	9,25	0,436	4,712
			42	4.1	31	9,96	10,2	10,3	10	10,12	0,162	1,601
			47	4.1	32	12	10	10	9	10,25	1,258	12,276
			38	4.5	31	10,6	10,6	10,6	10,6	10,60	0,000	0,000
			37	5.5	35	10,7	10,8	10,8	10,7	10,75	0,058	0,537

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Na	µg/g	1	12	5.1	31	12,5	10,9	10,5	9,6	10,88	1,212	11,146
			43	4.1	31	110	94	60	96	90,00	21,229	23,588
			25	5.1	31	126	123	127	116	123,00	4,967	4,038
			04a	9.1	42	165	175	170	177	171,75	5,377	3,131
			05	3.3	21.1	180	180	165	180	176,25	7,500	4,255
Na	µg/g	2	38a	9.1	42	<35	<35	<35	<35			
			50	4.1	31	141	141,4	143,7	144,5	142,65	1,714	1,201
			52	4.1	31	145,2	148,2	146,1	144,1	145,90	1,738	1,191
			42	4.1	31	148,02	145,88	145,88	145,88	146,42	1,070	0,731
			37	5.5	35	150,6	145,1	147,2	145,1	147,00	2,596	1,766
			06	5.2	31	149	147	148	144	147,00	2,160	1,470
			38	4.5	31	148,2	148,2	148,2	148,2	148,20	0,000	0,000
			18	6.4	31	148,98	149,13	150,81	147,85	149,19	1,220	0,818
			12	5.1	31	158,7	149,3	148,4	147,3	150,93	5,247	3,477
			47	4.1	32	157	155	158	157	156,75	1,258	0,803
			02	5.3	31	158	157	153	166	158,50	5,447	3,436
			09	5.5	31	145,8	155,1	173,3	162,6	159,20	11,644	7,314
			43	4.1	31	223	253	190	200	216,50	27,982	12,925
			25	5.1	31	273	268	282	290	278,25	9,743	3,501
			04a	9.1	42	285	340	345	333	325,75	27,609	8,475
			05	3.3	21.1	365	280	365	365	343,75	42,500	12,364
Na	µg/g	3	38a	9.1	42	<35	<35	<35	<35			
			09	5.5	31	<25	<25	<25	<25			
			43	4.1	31	49	<40	<40	<40			
			18	6.4	31	17,2	16,01	16,2	16,2	16,40	0,539	3,287
			52	4.1	31	19,9	20,8	21	19,1	20,20	0,876	4,335
			50	4.1	31	21,53	20,86	20,44	21,19	21,01	0,466	2,216
			38	4.5	31	21,05	21,05	21,05	21,05	21,05	0,000	0,000
			37	5.5	35	22,1	21,6	22,1	21,6	21,85	0,289	1,321

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Na	µg/g	3	47	4.1	32	23	23	23	23	23,00	0,000	0,000
			06	5.2	31	25,9	25	24,6	24,3	24,95	0,695	2,786
			12	5.1	31	25,9	34,4	23,8	23,6	26,93	5,091	18,907
			42	4.1	31	28,7	28,91	28,06	28,59	28,57	0,362	1,267
			02	5.3	31	26,1	31	29,2	28,8	28,78	2,024	7,033
			25	5.1	31	93,2	93,8	98,4	101,2	96,65	3,821	3,953
			04a	9.1	42	180	235	210	240	216,25	27,500	12,717
			05	3.3	21.1	295	265	245	275	270,00	20,817	7,710
Na	µg/g	4	43	4.1	31	<40	<40	48	52	50,00	2,828	5,657
			09	5.5	31	37	37,7	32,2	36,1	35,75	2,456	6,869
			38	4.5	31	42,6	42,6	42,6	42,6	42,60	0,000	0,000
			37	5.5	35	44,1	43,7	43,7	44,1	43,90	0,231	0,526
			52	4.1	31	45,1	46	45,2	44	45,08	0,822	1,824
			18	6.4	31	45,73	45,67	45,25	44,47	45,28	0,581	1,282
			42	4.1	31	46,38	47,57	48,11	47,89	47,49	0,771	1,623
			06	5.2	31	50,9	51,9	49,3	52,6	51,18	1,431	2,797
			47	4.1	32	52	51	51	51	51,25	0,500	0,976
			50	4.1	31	54	53,3	53,95	57,35	54,65	1,828	3,345
			02	5.3	31	55,4	57,3	55,5	55,6	55,95	0,904	1,615
			12	5.1	31	62,4	61,6	56,8	53	58,45	4,395	7,519
			38a	9.1	42	67,1	59,2	60,4	66,4	63,28	4,052	6,405
			25	5.1	31	115	101	119	105	110,00	8,406	7,642
			04a	9.1	42	240	295	335	277	286,75	39,483	13,769
			05	3.3	21.1	385	310	355	310	340,00	36,742	10,807
Ni	µg/g	1	02	5.3	31	4,5	4,2	4,2	4,2	4,28	0,150	3,509
			06	5.2	31	5,05	5,05	5,01	4,87	5,00	0,085	1,711
			43	4.1	32	5	5,1	5,1	5,1	5,08	0,050	0,985
			44	4.1	32	5,2	5,2	5,29	5,23	5,23	0,042	0,811
			26	5.1	31	5,38	5,26	5,11	5,19	5,24	0,114	2,186

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Ni	µg/g	1	64	6.1	21.1	5,33	5,33	5,06	5,33	5,26	0,135	2,565
			18	6.4	31	5,27	5,24	5,33	5,22	5,27	0,048	0,911
			50	4.1	31	5,38	5,24	5,28	5,35	5,31	0,064	1,204
			09	5.5	31	5,55	5,04	4,99	5,83	5,35	0,407	7,597
			48	4.1	35	5,464	5,492	5,321	5,364	5,41	0,081	1,497
			47	4.1	32	5,64	5,53	5,56	5,42	5,54	0,091	1,644
			56	5.5	31	5,97	5,89	5,72	5,74	5,83	0,120	2,063
Ni	µg/g	2	02	5.3	31	4	3,8	3,8	3,5	3,78	0,206	5,461
			26	5.1	31	4,69	4,92	4,6	4,76	4,74	0,135	2,852
			64	6.1	21.1	5,34	4,8	4,8	4,53	4,87	0,340	6,980
			43	4.1	32	5,1	5,6	4,8	4,9	5,10	0,356	6,978
			09	5.5	31	5,44	5,04	5,39	4,67	5,14	0,357	6,961
			06	5.2	31	5,26	5,59	5,04	5,02	5,23	0,265	5,069
			50	4.1	31	5,39	5,36	5,34	5,24	5,33	0,065	1,219
			47	4.1	32	5,67	5,54	5,05	5,13	5,35	0,304	5,681
			48	4.1	35	5,301	5,535	5,471	5,325	5,41	0,113	2,093
			44	4.1	32	5,48	5,38	5,44	5,43	5,43	0,041	0,757
			56	5.5	31	5,82	5,59	5,59	5,37	5,59	0,184	3,285
			18	6.4	31	6,55	5,62	5,39	5,27	5,71	0,580	10,164
Ni	µg/g	3	02	5.3	31	<1,1	<1,1	<1,1	<1,1			
			06	5.2	31	1,81	1,75	2,07	1,85	1,87	0,140	7,461
			18	6.4	31	2,1	2,07	2,15	2,14	2,12	0,037	1,748
			44	4.1	32	2,17	2,22	2,19	2,19	2,19	0,021	0,940
			43	4.1	32	3,2	1,9	1,9	1,9	2,23	0,650	29,213
			50	4.1	31	2,21	2,21	2,24	2,28	2,24	0,033	1,484
			47	4.1	32	2,28	2,24	2,29	2,24	2,26	0,026	1,162
			09	5.5	31	2,51	2,11	2,49	2,09	2,30	0,231	10,053
			26	5.1	31	2,43	2,38	2,44	2,41	2,42	0,026	1,096
			64	6.1	21.1	2,12	2,12	2,65	2,91	2,45	0,396	16,145

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Ni	µg/g	3	48	4.1	35	2,387	2,497	2,603	2,497	2,50	0,088	3,533
			56	5.5	31	2,77	2,64	2,56	2,41	2,60	0,151	5,806
Ni	µg/g	4	02	5.3	31	2,4	2,3	2,1	2,3	2,28	0,126	5,531
			43	4.1	32	2,5	2,5	2,5	3,4	2,73	0,450	16,514
			06	5.2	31	2,95	2,94	3,13	2,95	2,99	0,092	3,067
			18	6.4	31	3,13	3,14	3,13	3,21	3,15	0,039	1,225
			50	4.1	31	3,39	3,27	3,3	3,28	3,31	0,055	1,655
			47	4.1	32	3,38	3,26	3,29	3,31	3,31	0,051	1,540
			26	5.1	31	3,62	3,38	3,2	3,3	3,38	0,179	5,309
			44	4.1	32	3,6	3,53	3,43	3,52	3,52	0,070	1,982
			09	5.5	31	3,25	4,24	4,14	3,15	3,70	0,574	15,548
			56	5.5	31	3,87	4,02	3,77	3,55	3,80	0,197	5,186
			48	4.1	35	3,832	3,87	3,814	3,74	3,81	0,055	1,431
			64	6.1	21.1	4,83	4,29	4,56	4,29	4,49	0,259	5,754
Rb	µg/g	1	48	4.1	35	18,1	18,05	18,03	17,88	18,02	0,095	0,526
Rb	µg/g	2	48	4.1	35	20,66	20,41	20,56	20,5	20,53	0,105	0,511
Rb	µg/g	3	48	4.1	35	24,7	24,65	24,89	25,3	24,89	0,295	1,187
Rb	µg/g	4	48	4.1	35	1,904	1,886	1,909	1,876	1,89	0,015	0,814
Si	µg/g	1	38a	9.1	42	472	473	470	478	473,25	3,403	0,719
			04a	9.1	42	530	550	570	540	547,50	17,078	3,119
Si	µg/g	2	04a	9.1	42	7500	7585	7670	7660	7603,75	78,885	1,037
			38a	9.1	42	7705	7643	7672	7724	7686,00	35,824	0,466
Si	µg/g	3	04a	9.1	42	4155	3960	4000	3963	4019,50	92,147	2,292
			38a	9.1	42	4589	4561	4593	4627	4592,50	27,049	0,589
Si	µg/g	4	04a	9.1	42	1530	1460	1595	1407	1498,00	81,972	5,472
			38a	9.1	42	2148	2153	2078	2152	2132,75	36,564	1,714
Sr	µg/g	1	26	5.1	31	3,05	3,05	2,84	2,81	2,94	0,130	4,442
			48	4.1	35	3,062	3,057	2,984	2,929	3,01	0,064	2,114
			02	5.3	31	3,1	3	3	3,1	3,05	0,058	1,893

ICP-Forests 7th needle/leaf interlaboratory test 2004/2005

Additional parameters

Element	Unit	Sample no.	Lab no.	Methode code		Replicates				Mean	Si	Vi
				P	D	1	2	3	4			
Sr	µg/g	1	38a	9.1	42	4,11	3,97	3,8	3,84	3,93	0,140	3,568
Sr	µg/g	2	26	5.1	31	2,51	2,54	2,5	2,48	2,51	0,025	0,997
			02	5.3	31	2,6	2,5	2,5	2,5	2,53	0,050	1,980
			48	4.1	35	2,578	2,576	2,583	2,588	2,58	0,005	0,208
			38a	9.1	42	3,57	3,68	3,67	3,49	3,60	0,090	2,497
Sr	µg/g	3	48	4.1	35	15,3	15,28	15,57	15,46	15,40	0,138	0,894
			38a	9.1	42	15,86	15,84	15,45	15,62	15,69	0,195	1,242
			02	5.3	31	16,5	15,9	16,2	16,4	16,25	0,265	1,628
			26	5.1	31	16,4	16,7	16,3	16,2	16,40	0,216	1,317
Sr	µg/g	4	26	5.1	31	42,8	40	38,5	39	40,08	1,921	4,793
			38a	9.1	42	41,25	40,99	41,21	41,35	41,20	0,152	0,369
			48	4.1	35	43,45	43,29	42,78	43,1	43,16	0,288	0,667
			02	5.3	31	45	44,5	44,1	45	44,65	0,436	0,976
Ti	µg/g	1	18	3.31	31	0,55	0,57	0,61	0,98	0,68	0,203	29,993
			48	4.1	35	1,479	1,506	1,511	1,477	1,49	0,018	1,188
Ti	µg/g	2	48	4.1	35	3,244	3,183	3,084	3,129	3,16	0,069	2,187
			18	3.31	31	7,79	7,31	7,84	8,06	7,75	0,316	4,076
Ti	µg/g	3	48	4.1	35	3,543	3,724	3,53	3,562	3,59	0,090	2,520
			18	3.31	31	6,16	8,29	5,89	7,2	6,89	1,094	15,886
Ti	µg/g	4	48	4.1	35	3,471	3,642	3,568	3,764	3,61	0,124	3,422
			18	3.31	31	3,66	4,85	4,84	4,36	4,43	0,560	12,658
V	µg/g	1	48	4.1	35	0,0446	0,0451	0,0451	0,0439	0,04	0,001	1,271
V	µg/g	2	48	4.1	35	0,3306	0,3282	0,3398	0,3332	0,33	0,005	1,502
V	µg/g	3	48	4.1	35	0,1772	0,1776	0,1779	0,1796	0,18	0,001	0,593
V	µg/g	4	48	4.1	35	0,1383	0,1241	0,1366	0,1264	0,13	0,007	5,436