



WAGENINGEN EVALUATING PROGRAMS FOR
ANALYTICAL LABORATORIES



International Plant-Analytical Exchange



Quarterly Report 2012.1

January - March 2012



WAGENINGEN UNIVERSITY
ENVIRONMENTAL SCIENCES

Introduction

Dear WEPAL-participants,

It is getting more difficult to get samples to different countries. Sometimes shipment is delayed by customs, quarantine services (or other sometimes obscure reasons). For us it is impossible to keep track of all changing regulations. Please contact us if you need special permits or other documents to receive your samples.

Our aim is to have the samples in your possession at the start of each round. Contact us if you do not receive the samples in time. Please do not wait until a few weeks before the deadline because we will not be able to send new samples in time.

Enquiry 2012

We are interested in your ideas and questions about the WEPAL proficiency testing programmes. To make it easier for you to give your response we have placed an enquiry on our website. We have kept it short so it will not take up much of your time. Your feedback is much appreciated.

We decided to remove the section new members from the reports because it could be possible to link new members to Labnumbers or Labcodes. Many laboratories are open with their identity in the labcode while others prefer to hide their identity. Of course this does not mean that laboratories who hide their identity do not trust their own quality. There may be many reasons not to show the identity of a laboratory. Anyway it is not allowed to use the results of the WEPAL proficiency tests for publicity or other promotional activities. Use of the results for scientific purposes is only allowed when approved by WEPAL.

The WEPAL programs are organised to help you to improve the quality of your results. When you have ideas or remarks on the programs that can help us to improve them please feel free to contact us. We are always looking forward to hear from you,

Yours sincerely,



Bram Eijgenraam
Manager WEPAL

Calculated 04-04-2012 (10:00)

Approved by Bram Eijgenraam, manager WEPAL

Important Information

The results of the April - June 2012 period will be processed in the first week of July 2012. Participants are kindly requested to take care that the results of this series are in Wageningen **before the first of July 2012**. All results, which are received later, will not be reported.

The 2012.3 samples will be mailed at the end of May 2012.

Introduction	1
General Information	3
Accreditation	3
Homogeneity of the distributed samples	5
Homogeneity tests	5
Check of results	6
The quarterly report	6
Reporting of data	6
Statistics	6
Normal Distribution Approximation (NDA)	6
Median and MAD	7
Z-score	7
Evaluation of results	7
Uncertainty of the assigned value	8
Rounding of results	8
Materials Analysed	8
Method Indicating Code (MIC)	8
References and related literature	10
Used abbreviations and symbols	11
Analysis IPE 2012.1	12
Inorganic Chemical Composition	13
Real totals	50
Acid extractable (So-called totals)	53
Other determinations	54
Nutritional values	55
IPE 2012.1 Z - Scores	57
Per Participant	58
Errors and Corrections IPE 2011 Period 4	94

General Information

Accreditation

The Wageningen Evaluating Programmes for Analytical Laboratories organisation is accredited for the organisation of Interlaboratory Studies by the Dutch Accreditation Council RvA since April 26, 2000. The accreditation is based on the ILAC-requirements (Guidelines for the requirements for the competence of providers of proficiency testing schemes, ISO/IEC 17043). In the following table the scope is given for all WEPAL programs.

Table 1 Scope of the WEPAL programs. (Determinands in bold are in the scope of the accreditation)

IPE Group	Determinand
Inorganic Chemical Composition	Ag, As, B, Ba , Be, Bi, Br, Ca, Cd, Cl, Co, Cr , Cs, Cu , F, Fe , Ga, Hg, I, K, Li, Mg, Mn, Mo, N - Kjeldahl , N - NH ₄ (as N), N - NO₃, Na, Ni, P, Pb , Pd, Pt, Rb, Rh, S, Sb, Se, Sn, SO₄, Sr, Ti, V, Zn
Real totals	Al, C - elementary, N - elementary , Si
Acid extractable (So-called totals)	Al , Si
Other determinations	delta ¹³C, delta ¹⁵N
Nutritional values	ADF-ash-containing, ADF-ash-free, Crude fibre, NDF-ash-containing, NDF-ash-free, Polysaccharides (starch), TDF, TDF-non-soluble, TDF-soluble, Total ash , Total Disaccharides, Total fat, Total monosaccharides

ISE Group	Determinand
Real totals	Ag, Al, As, B, Ba , Be, Bi, Br, C - elementary, Ca, Cd, Ce, Co, Cr, Cs, Cu, F, Fe, Ga, Ge, Hg, I, K, La, Li, Mg, Mn, Mo, N - elementary, Na, Nb, Nd, Ni, P, Pb , Pd, Pt, Rb, Rh, S, Sb, Sc, Se, Si, Sn, Sr, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr
Acid extractable (So-called totals)	Ag, Al, As, B, Ba, Be , Bi, Br, Ca, Cd, Ce, Co, Cr, Cu, F, Fe, Ga, Hg, I, K, La, Li, Mg, Mn, Mo, N, Na, Nb, Nd, Ni, P, Pb , Pt, Rb, S, Sb, Sc, Se, Si, Sn, Sr, Te, Th, Ti, Tl, U, V, Y, Zn, Zr
Aqua Regia (ISO 11466)	Ag, Al, As, B, Ba, Be , Bi, Br, Ca, Cd, Ce, Co, Cr, Cu, F, Fe, Ga, Hg, I, K, La, Li, Mg, Mn, Mo, N, Na, Nb, Nd, Ni, P, Pb , Pt, Rb, S, Sb, Sc, Se, Si, Sn, Sr, Te, Th, Ti, Tl, U, V, Y, Zn, Zr
Extraction with boiling 2M HNO ₃	Cd, Co, Cr, Cu, Hg, Mo, Ni, Pb, Tl, Zn
Extraction with 0.1M NaNO ₃	Cd, Cu, Ni, Pb, Zn
Extraction with 0.01M CaCl ₂ 1:10	Al, B, Cd, CN, Co, Cr, Cu, Fe, K, Mg , Mn, N - NH₄, N - NO₃ , N total soluble, Na, Ni, P, Pb, SO ₄ , Zn
Soil characteristics	C - org others (W&B a.o.), EC-SC (ISO 11265), Fraction < 16 µm, Fraction < 2 µm, Fraction < 63 µm, Fraction > 63 µm, Org.matter (L.O.I.), pH - CaCl₂, pH - H₂O, pH - KCl, TC=Total C (org.+inorg.), TIC=Tot.Inorg C(CaCO₃), TOC=Total Org. C
Other determinations	B - Hot water, CN - Free, CN - Total, delta ¹³ C, delta ¹⁵ N, K - HCl, Mg - NaCl, Moisture-content
Fluoride (Swiss standard procedure)	F - Total
Digestion with conc. HNO ₃ + conc. HCl + H ₂ O ₂ (UNEP-UN/EC 91075A)	Al, As, B, Ba, Be, Br, Ca, Cd, Co, Cr, Cu, F, Fe, Ga, Hg, I, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Rb, S, Sb, Se, Si, Sn, Sr, Tl, V, Y, Zn, Zr
Pot. CEC using 1M NH ₄ -acetate at pH=7	Al, Ca, CEC, K, Mg, Na
Pot. CEC using 1M or 0.1M BaCl ₂ -TEA at pH=8.1 (ISO 13536 OR BZE)	Al, Ca, CEC, K, Mg, Na

ISE Group	Determinand
Pot. CEC using 1M NH ₄ Cl (BZE)	Al, Ca, CEC, Fe, H, K, Mg, Mn, Na
Act. CEC using 0.01M BaCl ₂ (ISO 11260)	Al, Ca, CEC, Fe, H, K, Mg, Mn, Na
Act. CEC using 0.1M BaCl ₂ (UNEP-UN/EC 91065A)	Al, Ca , CEC, Fe, H, K, Mg, Mn, Na
Act. CEC using cobaltihexamine (AFNOR NFX 31 130)	Al, Ca, CEC, Fe, H, K, Mg, Mn, Na
Mehlich-3	Al, As, B, Ca , Cd, Cr, Cu, Fe, K, Mg, Mn, Na, P, Pb, Zn
Extraction with Ca-lactate (VDLUFA)	K, P
Extraction with double lactate (VDLUFA)	K, P
Water soluble 1:10 (w/v) (EN-12457-4)	Br, Cl, F, N - NO ₃
Extraction with 0.01M CaCl ₂ + 0.005M DTPA 1:10 (w/v)	Cu, Fe, Mn, Zn
Extraction with 1M KCl 1:10 (w/v)	N - NH ₄ , N - NO ₃
Phosphorus and related analysis	Al - Ox, Fe - Ox, P - Ox, P - AL, P - Bray, P - Olsen, Pw
Extraction with 1M HCl (Polish standard)	B, Cu, Fe, Mn, Zn
Water soluble 1:10 (w/v) (NL VPR C85-06)	Br, Cl, F, SO ₄
UK Soil Methods	K - NH₄NO₃ (1/5), Mg - NH₄NO₃ (1/5), P - NaHCO₃ (1/20), pH - H₂O (2/5)

SETOC Group	Determinand
Polycyclic aromatic hydrocarbons	acenaphtene, acenaphtylene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenz(ah)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphtalene, phenanthrene, pyrene
Polychlorobiphenyls	PCB 028, PCB 031, PCB 052, PCB 077, PCB 081, PCB 101, PCB 105, PCB 114, PCB 118, PCB 123, PCB 126, PCB 128, PCB 138, PCB 149, PCB 153, PCB 156, PCB 157, PCB 167, PCB 169, PCB 180, PCB 189
Organochlorine pesticides	1,2,3 trichlorobenzene, 1,2,3,4 tetrachlorobenzene, 1,2,3,5 tetrachlorobenzene, 1,2,4 trichlorobenzene, 1,2,4,5 tetrachlorobenzene, 1,3,5 trichlorobenzene, aldrin, alpha-endosulfan, alpha-HCH, beta-endosulfan, beta-HCH, chlordane, cis-chlordane, delta-HCH, dieldrin, endosulfan, endosulfan sulfate, endrin, gamma-HCH, heptachlor, heptachlor epoxide, hexachlorobenzene, hexachlorobutadiene , isodrin, o,p`-DDD, o,p`-DDE, o,p`-DDT, p,p`-DDD, p,p`-DDE, p,p`-DDT, pentachlorobenzene , pentachlorophenol, Sum tetrachlorobenzenes, Sum trichlorobenzenes, telodrin, toxaphene, trans-chlord
Other parameters	AOX, CN - Free, CN - Total, EOX , Inorganic carbon, Mineral oil, GC, Mineral oil, IR, Organic carbon, Particles < 2 µm, Particles < 63 µm, Particles > 63 µm
Metals (aqua regia)	As, Ba, Cd, Co, Cr, Cu, Hg, Mo, Ni, Pb, Zn
Dibenzo-P Dioxin	1,2,3,4,6,7,8 Cl ₇ DD, 1,2,3,4,7,8 Cl ₆ DD, 1,2,3,6,7,8 Cl ₆ DD, 1,2,3,7,8 Cl ₅ DD, 1,2,3,7,8,9 Cl ₆ DD, 2,3,7,8 Cl ₄ DD, Cl ₆ DD
Dibenzofuran	1,2,3,4,6,7,8 Cl ₇ DF, 1,2,3,4,7,8 Cl ₆ DF, 1,2,3,4,7,8,9 Cl ₇ DF, 1,2,3,6,7,8 Cl ₆ DF, 1,2,3,7,8 Cl ₅ DF, 1,2,3,7,8,9 Cl ₆ DF, 2,3,4,6,7,8 Cl ₆ DF, 2,3,4,7,8 Cl ₅ DF, 2,3,7,8 Cl ₄ DF, Cl ₈ DF

SETOC Group	Determinand
Brominated Flame Retarders	BDE 028, BDE 047, BDE 066, BDE 085, BDE 099, BDE 100, BDE 153, BDE 154, BDE 183, BDE 209
Experimental	DEHP, Tributyl Tin (TBT)

MARSEP Group	Determinand
Real totals	Ag, Al, As, B, Ba, Be, Bi, Br, C, Ca, Cd, Co, Cr, Cu, F, Fe, Ga, Hg, I, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, Zn
Acid extractable (So-called totals)	Ag, Al, As, B, Ba, Be, Bi, Br, C, Ca, Cd, Cl, Co, Cr, Cu, F, Fe, Ga, Hg, I, K, Li, Mg, Mn, Mo, N , N - NH ₄ (as N), N - NO ₃ (as N), Na, Ni, P, Pb, S, S - SO₄, Sb, Se, Si, Sn, Sr, Ti, Tl, V, Zn
Other determinations	AOX, loss-on-ignition

BIMEP Group	Determinand
General Analysis	ash, calorific value, moisture, Volatile Matter
Elementary Analysis	Carbon (C), Cl, Hydrogen (H), Nitrogen (N), S
Water Soluble Elements	Cl, K, Na
Major Elements	Al, Ca, Fe, K, Mg, Na, P, Si
Minor Elements	As, Ba, Be, Cd, Co, Cr, Cu, F, Hg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Te, Ti, Tl, V, Zn

The selection of determinands included in the scope of accreditation is based on information about the homogeneity and stability of the samples. This information is available when sufficient participants have reported results for a determinand in the past 3 years. Determinands which are not reported regularly in sufficient numbers to have a statistical evaluation are not (yet) included in the scope of the accreditation.

Subcontracting

Some aspects of the proficiency testing scheme may from time to time be subcontracted. When subcontracting occurs it is placed with a competent subcontractor. WEPAL is responsible to the scheme participants for the subcontractor's work.

The analysis for the homogeneity tests of the samples used in this proficiency test are carried out by a subcontractor.

Confidentiality of results

The confidentiality of the results is extremely important in the Wepal programs. The participants may opt for a code name that indicates their laboratory, or one that ensures their anonymity. In the reports, only the code names will be mentioned.

When an accrediting body or a regulatory authority requires the proficiency test results to be provided by Wepal the participants shall be notified and asked for permission

Complaints and or remarks

The reports of WEPAL are assembled with the utmost care. Please contact us on info.wepal@wur.nl if you feel that the reports are not at a satisfactory standard or if you encountered errors in your results. Also feel free to contact us if you have any other complaints, remarks and or suggestions.

Homogeneity of the distributed samples

Homogeneity tests

WEPAL has developed special equipment for the production of representative subsamples (Houba, 1993) from a bulk material. The proper functioning of this equipment is tested by a homogeneity test in the final subsamples. To perform this test, samples are collected at regular intervals during the preparation of the

the samples. The collected samples, with a minimum of 10, are analysed in duplicate measurements under repeatability conditions. A selection of critical determinands is chosen for the tests. The results of the homogeneity tests are published in the annual reports.

All samples used in this round of the proficiency test have passed the homogeneity test.

Check of results

Before distribution of the periodic reports to the participants, a final check is made based on the results found by the participants. This check is made for all reported determinands. The variations between laboratories and concentrations are compared with the patterns as found in the previous 5 years. The expected pattern is a high CV at a low concentration and a gradually decreasing CV at higher concentrations till a more or less constant level of CV-values is reached (Houba et al., 1986). Deviations from this expected pattern are mentioned in the periodic reports. This might be an indication of inhomogeneity of the material for the determinand.

All data of this period are compared with the general patterns as published in the latest year report. No deviating values were found.

The quarterly report

In order to evaluate the accuracy and precision of the analytical procedures used, five proficiency testing programs have been established. At this moment the WEPAL Exchange Programs comprises approximately 600 laboratories in many countries. The participating laboratories receive four air-dried samples every three months and analyse the samples according to their own procedures. The results of the determinations are collected and processed at Wageningen University and published every three months. The participating laboratories are informed of the results in the third week of the next three-month period. Each participant can compare his results with those of all the other members of the exchange program. WEPAL will not comment on results unless asked to do so.

Reporting of data

The analysed components must be reported in oven-dry (105 °C) material. For this purpose the moisture content has to be determined separately and the analytical results have to be recalculated (see the form to report the results). To get reproducible results of these moisture contents we recommend you to dry the material during at least 3 hours at 105 °C and let cool down in a desiccator before weighing.

Statistics

Normal Distribution Approximation (NDA)

Interlaboratory studies like the WEPAL proficiency testing ringtests frequently give rise to datasets that have complex distributions including excessive tailing and multiple modes. Consequently, sophisticated statistical methods are required to obtain meaningful assessments. The strategy that was used until 2009 made use of an outlier test followed by straightforward statistics. Problem with this strategy is that removal of outliers causes an underestimation of variance of the dataset. Therefore a methodology was needed that does not rely on arbitrary outlier removal or subjective manual interpretations. Ideally the used methodology must provide the characteristics of the highest mode of the dataset.

The model that is chosen calculates population characteristics (mean and standard deviation) from experimental datasets (Cofino 2000). The model uses an estimate for the probability density function (pdf) of the measurement process and calculates a best fit based on all observed values. The implementation of the model that is used does not require uncertainty estimates for all data points. Instead it uses a normal distribution approximation (NDA) for the pdf of the individual data points. In essence, the pdf's of the individual datapoints are superposed on each other to create a continuous pdf representing the entire distribution (all datapoints).

With the mathematical model coefficients can be obtained by looking for the combination of data points that has the highest probability in the basis set. This maximization amounts to the identification of the first mode of the dataset. The coefficients can be used to calculate the weighted mean and standard deviation. Subsequent calculations give additional modes of the distribution and for each mode the expectation value (mean), the standard deviation and a percentage indicating the fraction of observations encompassed. In this report only mean and standard deviation for the first mode (combination with the highest probability in the dataset) are given.

The model is tested on simulated data sets and datasets of several interlaboratory studies. It is demonstrated that the model is robust and insensitive to outliers. It can cope with asymmetric, strongly tailing and multimodal distributions. Publications describing the procedure in more detail and results of the tests are in preparation.

With the NDA model mean and standard deviation are calculated using all reported data when at least 8 results are left after removal of reported 'lower than' (<) and 0 (= zero) values. No outliers are removed.

Table 2. The model summarised

- Each observation is attributed an ' Observation measurement function' (OMF, ϕ_i)
- An OMF is defined as the square root of the probability density function appropriate for the observation. If normal distributions are used: $\phi_i = \sqrt{N(\mu_i, \sigma_i^2)}$
- The set of ϕ_i 's constitutes a basic set in which the population measurement function Ψ is constructed: $\Psi_i = \sum c_{ik} \phi_k$
- The coefficients are obtained by finding the combination which renders highest probability density (maximise $\int \Psi^2 dx$, x being concentration). Mathematically this amounts to solving the eigenvector-eigenvalue equation $Sc = \lambda c$, S_{ij} being an overlap integral defined as $\int \phi_i \phi_j dx$, $0 \leq S_{ij} \leq 1$
- Mean and standard deviation of Ψ_i are calculated from the first and second moment of the probability density function Ψ_i^2

$$\bar{m}_i = \frac{\int x \Psi_i^2 dx}{\int \Psi_i^2 dx},$$

$$s_i^2 = \frac{\int x^2 \Psi_i^2 dx}{\int \Psi_i^2 dx} - \bar{m}_i^2$$

- When the NDA approximation is used the variance calculated by the model represents the sum of the estimates for the within-laboratory and between-laboratory variances, i.e.

$$s_i^2 = s_{between\ labs,i}^2 + s_{within\ labs,i}^2$$

Median and MAD

For each determinand a median value and a median of absolute deviations (MAD) are calculated using all reported data except the reported '<' values. Deviating results like stragglers and outliers are not removed. The median is the middle observation of the sorted observations. In the case of an even number of observations it is the mean of the two middle observations. Using the median instead of mean, extreme data have less influence. MAD is the median of the absolute values of the observations minus their median.

Z-score

For all analytical data a Z-score is calculated according to the formula:

$$Z\text{-score} = \frac{X - X_{mean}}{S_d}$$

in which:

X = the reported value

X_{mean} = the mean of all values calculated with the NDA model

S_d = standard deviation calculated with the NDA model

Evaluation of results

For the evaluation of results the absolute value of the Z-score is used. Questionable results $2 < |Z| < 3$ are marked as stragglers (*). Deviating results with $|Z| > 3$ are marked as outliers (**).

Results reported as 'smaller than' (<) are also evaluated. When this 'smaller than' value is lower than the mean a Z-score is calculated. Based on this z-score these 'smaller than' values can also be marked as straggler or outlier. In these cases the 'smaller than' value is set too low.

Uncertainty of the assigned value

The aim of this proficiency testing scheme is to establish comparability among laboratories. Results for measurands in this scheme are dependent on the methods which are used. It is not feasible to establish metrological traceability of the assigned value. Assigned values are therefore based on consensus values. In this proficiency test the robust standard deviation is used as standard deviation for proficiency assessment. The uncertainty in the assigned value is calculated as :

$$u_x = s / \sqrt{N}$$

s = robust standard deviation

N = number of results

The uncertainty in the assigned value may influence the evaluation of the results (calculated Z-scores). This influence is considered to be negligible if the following conditions is met:

$$u_x \leq 0.3 * \sigma_{pt}$$

u_x = uncertainty in the assigned value

σ_{pt} = standard deviation for proficiency assessment (= s)

Because $\sigma_{pt} = s$ this evaluation reverts to :

$$s / \sqrt{N} \leq 0.3 * s \text{ or } \sqrt{N} \geq 3$$

The influence of uncertainty on the evaluation of the results is therefore dependent on the number of results. Above 10 results of uncertainty on the assigned value is negligible. From 8 to 10 results uncertainty of the consensus value is larger than $0.3 \sigma_{pt}$ and therefore may influence the evaluation of the results. Below 8 results no consensus value is given.

Rounding of results

Rounding interval is set to have at least three significant digits for the results. This is based on the value of the mean. If no mean value is available (less than 8 results) the median is used. In cases where between laboratory variation is small (based on the standard deviation) an extra digiti shown. For the statistical results (mean, standard deviation, median and MAD) one extra digit is shown.

Note that larger results are also rounded (e.g. 1809 may be rounded as 1810).

Materials Analysed

Table 3 Materials analysed in this period.

Sample	Sample ID	Type	Country
1	197	Maize / Zea mays	Netherlands
2	124	Lucerne / Medicago sativum	Oosterbeek / Netherlands
3	189	Banana leaves / Musa sapientum	Philippines
4	157	Beech Leaf / Fagus sylvatica l.	Wageningen / Netherlands

Method Indicating Code (MIC)

In order to evaluate the analytical results for each reported determinand (see Table 4 for the different element groups), a Method Indicating Code (MIC) is used. Details of the analytical procedures used by the individual participants are indicated by four characters, added at the end of each row with results. The first character indicates the method of extraction or digestion according to the codes explained in Table 5. The last three characters (see Table 6) indicate the method of detection of the element in the extracts or digests. In this way it is possible for all participants to compare the results of their analytical procedures

more specifically with the results of other participants. This could be a further valuable tool in judgement of the individual results.

Table 4 *Used abbreviations in errors and z-scores*

Method	Abbreviation	Digestion/extraction procedure
1	IN	Inorganic Chemical Composition
2	RT	Real totals
3	AE	Acid extractable (So-called totals)
4	OD	Other determinations
6	NUT	Nutritional values
7	VIT	Vitamins
8	AMIN	Amino Acids

Table 5 *Digestion and extraction techniques*

Code	Technique
AA	Dry ashing without HF and uptake in HCl
AB	Dry ashing without HF and uptake in HNO ₃
AC	Dry ashing with HF and uptake in HCl
AD	Dry ashing with HF and uptake in HNO ₃
AE	Dry ashing without HF and uptake in H ₂ SO ₄
B	Melt
CA	Schoeniger combustion and uptake in HCl
CB	Schoeniger combustion and uptake in HNO ₃
DA	Wet digestion without HF and final medium H ₂ SO ₄
DB	Wet digestion without HF and final medium HNO ₃
DC	Wet digestion without HF and final medium HClO ₄
DD	Wet digestion with HF and final medium H ₂ SO ₄
DE	Wet digestion with HF and final medium HNO ₃
DF	Wet digestion with HF and final medium HClO ₄
DG	Wet digestion in closed pressurized system and final medium HNO ₃
DH	Wet digestion in closed pressurized system and final medium HCl
EA	Microwave digestion in closed system with HF and final medium H ₂ SO ₄
EB	Microwave digestion in closed system with HF and final medium HNO ₃ /HCl
EC	Microwave digestion in closed system with HF and final medium HClO ₄
ED	Microwave digestion in closed system without HF and final medium H ₂ SO ₄
EE	Microwave digestion in closed system without HF and final medium HNO ₃ /HCl
EF	Microwave digestion in closed system without HF and final medium HClO ₄
EG	Microwave digestion in open system with HF and final medium H ₂ SO ₄
EH	Microwave digestion in open system with HF and final medium HNO ₃ /HCl
EI	Microwave digestion in open system with HF and final medium HClO ₄
EJ	Microwave digestion in open system without HF and final medium H ₂ SO ₄
EK	Microwave digestion in open system without HF and final medium HNO ₃ /HCl
EL	Microwave digestion in open system without HF and final medium HClO ₄
FA	Extraction with water
FB	Extraction with acid(s)
FC	Solubilizers
G	Others
H	Dry combustion (Elementary analysis)

Table 6 *Methods of detection*

Code	Method
AA	AAS-Flame without background correction using air-acetylene
AB	AAS-Flame with deuterium background correction using air-acetylene
AC	AAS-Flame with zeeman background correction using air-acetylene
AD	AAS-Flame with pulsed hollow cathode lamp backgr. corr. using air-acetylene
AE	As AA using N ₂ O-acetylene
AF	As AB using N ₂ O-acetylene
AG	As AC using N ₂ O-acetylene
AH	As AD using N ₂ O-acetylene

Code	Method
BA	AAS-ETA without background correction / without chemical modifier
BB	AAS-ETA with deuterium background corr. /without chemical modifier
BC	AAS-ETA with zeeman background correction /without chemical modifier
BD	AAS-ETA with pulsed hollow cathode lamp backgr. corr./without chem. mod.
BE	AAS-ETA without background correction/with chemical modifier
BF	AAS-ETA with deuterium background correction/with chemical modifier
BG	AAS-ETA with zeeman background correction/with chemical modifier
BH	AAS-ETA with pulsed hollow cathode lamp background cor./with chem. modifier
CA	Flame emission
CB	ICP-AES (different wavelengths possible;indicate the used wavelength)
CC	Other excitation source
D	ICP-MS
E	Spectrophotometry
F	Hydride Technique (similar techniques using analyte volatilization;specify)
G	Cold Vapour Technique
H	Ion Selective Electrode
IA	Direct voltammetry
IB	Stripping voltammetry
J	Chromatography
JA	Gas chromatography
JB	Liquid chromatography
JE	Ion chromatography
KA	X-ray fluorescence with material melted
KB	X-ray fluorescence with material pressed
L	Neutron activation analysis
M	Near infrared
O	Titrimetric
P	Gravimetric
Q	Turbidimetric / or Nephelometric
Z	Others (specify)

References and related literature

- Cofino, W.P., I. van Stokkum, D.E. Wells, R.A.L. Peerboom, F. Ariese (2000). A new model for the inference of population characteristics from experimental data using uncertainties. Application to interlaboratory studies. *Chemom. Intell. Lab. Syst.* 53, 37-55.
- Dijk, D. van and V.J.G. Houba (2000). Homogeneity and Stability of Materials Distributed Within the Wageningen Evaluating Programmes for Analytical Laboratories. *Commun. Soil Sci. Plant Anal.* 31 (11-14), 1745 -1756.
- Dijk, D. van, V.J.G. Houba and J.P.J. van Dalen (1996). Aspects of quality assurance within the Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL). *Commun. Soil Sci. Plant Anal.* 27, 433 - 439.
- Eurachem (2000). Selection, use and interpretation of proficiency testing (PT) schemes by laboratories. Eurachem Nederland, task group 'proficiency testing schemes' and Laboratory of the Government Chemist (LGC), United Kingdom.
- Feinberg, M., E. Bugner, G. Theiller, V.J.G. Houba and F. Kadijk (1995). Expression of the reference value for proficiency tests. *J. Chemometrics* 9,197-209.
- Houba, V.J.G. (1993). A device for automatic subsampling of soil, sediment and plant material for proficiency testing. *Fresenius J. Anal. Chem.* 345, 156 -157.
- Houba, V.J.G., W.J. Chardon and K. Roelse (1993). Influence of grinding of soil on apparent chemical composition. *Commun. Soil Sci. Plant Anal.* 24, 1591 - 1602.
- Houba, V.J.G., J.J. van der Lee and I. Novozamsky (1996). Evaluating the state-of-the-practice in soil measurements in relation to environmental regulations. *Accred. Qual. Assur.* 1, 92 - 98.
- Houba, V.J.G. and I. Novozamsky (1998). Influence of storage time and temperature of air-dried soils on pH and extractable nutrients using 0.01 M CaCl₂. *Fresenius J. Anal. Chem.* 360, 362 - 365.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1994a). Status and future of soil and plant analysis. *Commun. Soil Sci. Plant Anal.* 25, 753 - 765.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1994b). Standardization and validation of methods of soil and plant analysis as conditions for accreditation. *Commun. Soil Sci. Plant Anal.* 25, 827 - 841.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1994c). Aspects of pre-treatment of soils for inorganic chemical analysis. *QuRmica AnalitRca* 13, 94 - 99.

- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1995). Influence of storage of plant samples on their chemical composition. *The Science of the Total Environment* 176, 73 - 79.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1996). Quality aspects in laboratories for soil and plant analysis. *Commun. Soil Sci. Plant Anal.* 27, 327 - 348.
- Houba, V.J.G., J. Uittenbogaard and P. Pellen (1996). Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL), organisation and purpose. *Commun. Soil Sci. Plant Anal.* 27, 421 - 431.
- ILAC-G13 (2007). ILAC Guidelines for the Requirements for the Competence of Providers of Proficiency Testing Schemes. 23 p.
- Montfort, M. A.J. van (1996). Statistical remarks on laboratory-evaluating programs for comparing laboratories and methods. *Commun. Soil Sci. Plant Anal.* 27, 463 - 478.
- Novozamsky, I., V.J.G. Houba, R.Ch. Daniel and the members of CII (1993). Certification of cabbage and carnation samples and their use in an international proficiency study. *Fresenius J. Anal. Chem.* 345, 198 - 201.
- Thompson, M. and R. Wood (1993). The international harmonized protocol for the proficiency testing of (chemical) analytical laboratories. *Pure and Appl. Chem.* 65, 2123 - 2144.

Used abbreviations and symbols

Table 7 *Used abbreviations and symbols*

Where	Abbreviation	Explanation
Results	MIC	method indicating code
Results	MAD	median absolute deviation
Results	Sd	standard deviation
Results, Z-scores	<	value smaller than
Results, Z-scores	*	straggler
Results, Z-scores	**	outlier
Results, Z-scores	-	no result was submitted
Results statistical values	-	not calculated
Z-scores	#	less than 8 values, no mean and Sd calculated
Errors	C	Correction participant
Errors	D	Results received after deadline (before publication date)
Errors	E	Error WEPAL
Errors	M	Modified results
Errors	N	New results
Errors	R	Results removed

Analysis IPE 2012.1

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Ag (µg/kg)						
LABTIUM	(47)	10 <	10.00	10 <	30.0	G D
0055HIK	(59)	100 <	100.00 <	100 <	100.0 <	EE D
RIOGLAB	(264)	5 <	4.40	5 <	23.8	
TECHHK	(270)	3	5.16	1	26.7	EE D
NPIAS	(1089)	37 <	60.00 <	32 <	70.0 <	L
SACAV	(1095)	200	300.00	400	500.0	
SYRAT	(1100)	18 <	29.62 <	38 <	35.0	
INDIES	(1106)	30 <	30.00 <	30 <	30.0 <	L

	Statistical Results (no NDA)			
	2	4	2	5
N	2	4	2	5
Median	101.6	7.580	200.7	30.00
MAD	98.4	2.800	199.3	5.00

As (µg/kg)						
ISKCLASKCE	(2)	50.0 <	403	50.0 <	301	
BRAUNSCHW	(3)	11.5	402	8.8	278	EE D
IACM LTD	(15)	50.0 <	418	50.0 <	275	EE D
HKPC-EMD	(16)	500.0 <	500 <	500.0 <	500 <	G D
WAGENINGEN	(32)	15.0	497	35.0	369	G D
LABTIUM	(47)	50.0 <	450	50.0 <	310	G D
0055HIK	(59)	100.0 <	440	100.0 <	290	EE D
HAMELN	(68)	13.0	496	10.0 <	450 *	DG D
ELML	(75)	88.0 **	740 **	20.0 <	539 **	G CB
HLVA	(84)	10.4	445	52.3	300	G F
POVLT	(115)	15.0	522 *	9.4	375	EE F
LEIPZIGMOE	(132)	15.6	448	15.3	299	
ANALRESLAB	(159)	12.4	444	15.6	305	DA F
JYUIER	(185)	50.0 <	467	50.0 <	336	EE D
FFEEBW	(201)	200.0 <	410	200.0 <	335	
ABMCE	(250)	50.0 <	450	50.0 <	310	EE D
IRQ-1992-S	(251)	23.2	461	19.6	339	EE F
UPPSALA	(252)	7.0 <	369	7.0 <	275	
RIOGLAB	(264)	8.7	413	19.0	295	EE D
TECHHK	(270)	32.8 **	446	22.6	302	EE D
IUNGPUL	(275)	20.4	372	4.9	288	AA F
VICTORY	(597)	27.0 *	99 **	71.0 *	97 **	HB D
WELLAB	(714)	50.0 <	424	50.0 <	279	
FOODCHEM	(847)	31.3 *	378	455.8 **	125 **	DB F
SPASL	(855)	-	594 **	591.9 **	-	EE CB
PHARM	(969)	3400.0 <	3400 <	3400.0 <	3400 <	DG CB
SAC-CAL	(973)	200.0 <	200 < **	200.0 <	200 < *	DG F
MASHA	(1029)	-	460	-	370	
ETRR	(1031)	-	428	-	370	L
CNES	(1033)	-	1 **	-	0 **	L
NPIAS	(1089)	11.0	395	64.0 <	322	L
KFKI	(1091)	10.8	432	-	357	L
SACAV	(1095)	17.0	400	-	230	
CAMPU	(1096)	-	-	-	0 **	A L
ATCHI	(1098)	-	329 *	-	195 *	
TEFA	(1099)	20.0 <	458	98.0 <	309	L
SYRAT	(1100)	14.5	317 *	49.3	591 **	
INDIES	(1106)	6.0 <	470	60.0 <	350	L
DESAR	(1108)	10.0	440	-	300	A L
NOUSSE	(1110)	15.6	529 *	-	375	L
LNIP	(1111)	-	394	-	236	G L

	Statistical Results			
	14.10	432.9	20.95	312.1
NDA mean	14.10	432.9	20.95	312.1
NDA st dev	5.75	44.2	18.86	48.7
N	20	37	14	37
Median	15.00	440.0	21.11	302.0
MAD	4.10	30.0	13.08	34.0

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
B (mg/kg)						
BRAUNSCHW	(3)	0.50 < *	32.9	27.3	26.4	EE CB
AGRILAB	(4)	2.40	33.8	28.3	26.5	
LYMAN-AGRO	(5)	1.36	29.3	23.5 *	22.2	AE E
OOSTERBEEK	(7)	2.18 <	38.1	31.7	30.1	G CB
SIME DARBY	(19)	3.00	33.8	27.4	26.7	AA E
MARDI	(26)	2.67	21.7 **	20.5 **	15.6 **	DB CB
KUCHING	(27)	2.00	30.0	25.0	24.0	FB CB
LRSCONTROL	(28)	1.39	33.6	27.8	25.9	AA CB
FELDA	(30)	2.41	32.3	28.1	26.4	AA E
LKS	(31)	2.64	38.0	15.6 **	24.5	DG CB
OVA JORK	(35)	2.30	36.9	28.8	32.7	AA E
FORTEST	(44)	1.10	33.2	27.0	24.8	EE CB
LABTIUM	(47)	3.04	35.3	32.4	26.4	G D
RELAB	(49)	2.00 <	37.0	29.4	29.3	EE CB
SIRI	(53)	12.50 **	37.5	31.3	29.0	AA E
AAAGROUP	(56)	1.80	36.6	27.8	29.2	AA AA
AMIS-AGRO	(58)	3.00	33.8	28.5	24.9	AC CB
0055HIK	(59)	2.15	33.4	28.0	27.2	CB
BLRSLAL	(62)	14.93 **	33.7	29.6	28.6	AE E
AARESEARCH	(63)	1.36	32.6	28.6	26.3	AE E
MRMEAK	(65)	1.40	34.2	29.7	27.4	EE CB
CORBANA	(67)	2.07	33.8	29.1	27.4	EE CB
HAMELN	(68)	2.54	39.5	32.5	34.3 *	DG CB
ELML	(75)	5.06 **	30.6	25.3	25.2	G CB
DFAL	(76)	2.48	34.6	28.1	26.9	AA CB
HILL	(78)	2.09	34.7	29.1	28.7	EE CB
METLAPARKA	(81)	2.65	34.3	27.8	27.4	G CB
HLVA	(84)	2.32	35.4	28.6	27.4	G CB
ELAEIS.P	(85)	2.81	31.9	26.0	23.9	AE E
ECN	(86)	2.21	38.7	32.0	30.2	DG CB
CIAT	(90)	1.75	36.3	30.9	28.1	AE E
SPSSBKCH	(91)	2.63	35.5	30.5	27.9	AA E
POVLT	(115)	1.89	35.0	28.6	27.0	EE CB
LAPANDAY	(118)	4.29 *	36.9	30.9	30.6	AA E
GGM	(129)	5.00 <	28.5 *	26.7	25.1	EE D
XGCALAFIGA	(133)	2.08	36.4	29.0	28.7	EE CB
CCWELE	(136)	2.37	35.0	31.5	30.9	G CB
IRRI	(158)	0.04 *	46.3 **	32.6	29.4	FB CB
ANALRESLAB	(159)	2.19	32.2	27.1	25.7	EE CB
IRNASE	(164)	1.59	33.2	27.1	25.0	EE CB
SYNERS	(166)	3.19	34.0	28.5	26.0	AA CB
BVO95MBPD	(171)	6.79 **	38.1	31.7	31.1	EE CB
SMBPLNUP	(183)	2.33	34.4	27.7	25.8	AA CB
JYUIER	(185)	2.44	35.7	29.7	29.6	EE CB
IPULAB	(186)	3.00 <	37.4	31.9	32.4	G CB
SAINTE-FOY	(190)	200.00 <	200.0 <	200.0 <	200.0 <	DA CB
LQA-ATP	(198)	2.21	32.1	23.9 *	22.9	AE E
FFEEBW	(201)	2.71	32.7	27.6	27.2	DG CB
LAIMBURG	(202)	28.80 **	38.5	8.4 **	32.2	EE/CB
QLDNR&M	(204)	1.88	33.7	28.0	26.5	DB CB
DANRLAB	(206)	3.90	33.7	27.9	27.3	EE CB
DATE	(218)	2.08	32.9	26.9	26.2	G CB
ALMP1011	(219)	5.00 <	38.2	31.6	30.5	AB CB
VILJAVUUSP	(228)	2.69	32.7	25.9	25.1	AA CB
GUYLAB	(231)	1.69	32.1	27.8	25.0	AE E
RIOJALAB	(238)	4.28 *	38.4	31.2	30.7	DA CB
CHRON	(239)	1.75	34.6	27.1	26.7	AA CB
LASUTEVEA	(241)	1.90	37.1	26.6	26.3	
SMART	(246)	1.07	29.3	27.3	26.8	AE E
MONICA	(248)	3.00 <	36.0	30.2	28.5	EB CB
REYEPS	(249)	2.29	39.1	31.0	30.0	DG CB

	Summary Statistics			
NDA mean	2.274	34.73	28.65	27.35
NDA st dev	0.825	2.74	2.37	2.80
N	73	81	81	81

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
B (mg/kg) (cont.)						
ABMCE (250)		3.50 <	34.7	28.5	27.6	EE D
UPPSALA (252)		39.50 **	45.9 **	44.3 **	45.6 **	DB CB
PINAGRO (256)		2.30	35.9	33.1	28.5	
ERSAFVGSCA (265)		6.60 **	29.0 *	24.6	24.5	E
LABVAL (266)		2.47	35.8	28.4	28.1	G CB
LAF (273)		5.33 **	36.3	30.7	30.0	G CB
SPASL (855)		3.34	36.3	30.2	29.2	EE CB
PASCAAnalab (870)		3.10	34.7	27.8	28.0	AA E
IOPRI (880)		5.14 **	35.0	16.3 **	19.0 *	
LSF (895)		4.25 *	37.5	26.5	29.3	
RHODE (960)		1.38	26.9 *	21.0 **	18.3 **	H CB
SAC-CAL (973)		2.32	34.6	27.1	26.3	DG CB
AZBY (976)		6.00 **	30.0	31.8	19.7 *	DC E
LS-MRC (978)		1.73	33.4	24.4	22.4	AA E
FERTILAB (979)		2.87	28.4 *	19.4 **	20.0 *	EA E
FAST (1007)		2.34	34.1	29.5	27.6	AB CB
SMART-BGR (1016)		2.76	39.4	33.7 *	33.3 *	AA CB
SUMIFRU (1026)		9.60 **	32.7	28.1	26.9	EE CB
MMLAB (1059)		2.18	34.1	27.6	26.6	AE E
WASL-DG (1082)		1.70	38.1	30.4	28.1	
LABTECCOL (1087)		13.95 **	16.4 **	16.4 **	1.4 **	AA CB
TEFA (1099)		43.00 <	64.0 <	42.0 <	57.0 <	L

	Statistical Results			
NDA mean	2.274	34.73	28.65	27.35
NDA st dev	0.825	2.74	2.37	2.80
N	73	81	81	81
Median	2.400	34.60	28.10	27.20
MAD	0.600	1.85	1.60	1.96

Ba (mg/kg)						
LABTIUM (47)		1.000 <	11.8	90.3	54.9	G CB
HAMELN (68)		1.000 <	10.0	85.2	53.3	DG CB
ECN (86)		0.085	12.7	78.6	55.0	DG CB
CCWELE (136)		0.049	9.3	88.3	51.8	EE D
IRNASE (164)		0.200 <	9.5	77.9	47.9	EE CB
JYUIER (185)		0.500 <	9.1	80.5	49.2	EE CB
DATE (218)		0.254	10.8	97.5 *	60.3	G CB
IRQ-1992-S (251)		0.220	9.5	79.6	41.7 *	EE CB
RIOGLAB (264)		0.104	9.8	77.8	46.2	EE D
TECHHK (270)		0.065	9.4	84.3	51.6	EE D
VICTORY (597)		0.250	16.0 *	94.6	63.1 *	HB D
MASHA (1029)		-	14.5	75.5	50.8	
CGEA (1030)		0.373	8.4	64.0 *	39.1 *	G D
ETRR (1031)		-	-	72.9	49.2	L
CNES (1033)		-	-	90.5	-	L
NECSA (1035)		-	11.2	37.8 **	25.3 **	
NPIAS (1089)		3.000 <	5.9	3.2 **	4.3 **	L
KFKI (1091)		-	13.4	81.4	50.9	L
SACAV (1095)		29.000 **	39.0 **	68.0	51.0	
TEFA (1099)		1.450 <	12.3	80.6	53.0	L
SYRAT (1100)		1.000 <	12.1	96.7	67.7 **	
TECNUC (1103)		-	22.1 **	86.0	60.8 *	L
DESAR (1108)		-	11.6	81.0	54.0	A L
NOUSSE (1110)		3.010 **	12.7	80.9	51.6	L
LNIP (1111)		-	4.1 *	79.8	51.1	G L

	Statistical Results			
NDA mean	0.1704	10.86	81.99	51.75
NDA st dev	0.1849	2.51	7.59	4.43
N	10	23	25	24
Median	0.2350	11.20	80.60	51.35
MAD	0.1439	1.74	5.10	3.05

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Be (µg/kg)						
BRAUNSCHW	(3)	1.75	30.0	1.74	46.6	EE D
LABTIUM	(47)	100.00 <	100.0 <	100.00 <	100.0 <	G D
HLVA	(84)	0.90 <	48.8	0.90	49.8	G D
CCWELE	(136)	1.00 <	41.3	2.50	69.8 **	DC CB
JYUIER	(185)	50.00 <	50.0 <	50.00 <	50.8	EE D
ABMCE	(250)	20.00 <	40.0	20.00 <	60.0	EE D
RIOGLAB	(264)	3.00 <	41.4	3.00 <	51.4	EE D
TECHHK	(270)	0.29	28.9	0.93	51.2	EE D
VICTORY	(597)	8.40	64.8	26.40	60.6	HB D

	Statistical Results			
NDA mean	-	-	-	51.55
NDA st dev	-	-	-	4.81
N	3	7	5	8
Median	1.750	41.30	1.740	51.30
MAD	1.459	7.50	0.813	3.09

Bi (µg/kg)						
BRAUNSCHW	(3)	1.95	9.9	1.98	17.0	EE D
LABTIUM	(47)	100.00 <	100.0 <	100.00 <	100.0 <	G D
CCWELE	(136)	1.10	13.6	0.60	24.1	DC D
RIOGLAB	(264)	3.00 <	10.9	3.00 <	17.8	

	Statistical Results (no NDA)			
N	2	3	2	3
Median	1.525	10.90	1.290	17.80
MAD	0.425	1.01	0.690	0.83

Br (mg/kg)						
TLR	(900)	5.000 <	16.6 *	39.7	5.00 <	
MASHA	(1029)	-	11.8	31.7	4.73	G L
ETRR	(1031)	-	12.2	33.9	4.87	L
CNES	(1033)	0.189	14.8	40.5	5.62	L
NPIAS	(1089)	0.120	12.4	34.3	4.96	L
KFKI	(1091)	0.066	7.7 **	21.7 *	2.85 **	L
REAK	(1092)	0.500 **	12.7	34.0	5.00	- L
SACAV	(1095)	0.200	11.2	31.2	4.30	
CAMPU	(1096)	42.725 **	59.1 **	84.1 **	62.77 **	A L
ATCHI	(1098)	0.100	13.3	39.6	5.12	
TEFA	(1099)	0.189	13.4	37.3	5.42	L
SYRAT	(1100)	0.150	11.7	32.8	4.90	
TECNUC	(1103)	-	14.5	38.7	5.75	L
INDIES	(1106)	0.150	12.7	35.4	4.86	L
DESAR	(1108)	0.120	13.0	35.4	5.00	A L
YAZA	(1109)	-	18.2 **	45.7	7.30 **	G L
NOUSSE	(1110)	0.190	16.9 *	47.1 *	6.33 **	L
LNIP	(1111)	-	12.1	33.7	5.16	G L

	Statistical Results			
NDA mean	0.1507	12.83	35.90	5.036
NDA st dev	0.0556	1.62	4.99	0.389
N	12	18	18	17
Median	0.1695	12.87	35.40	5.000
MAD	0.0400	1.12	3.50	0.270

Ca (g/kg)						
ISKCLASKCE	(2)	0.1000 <	23.1	6.77	16.4	G CB
BRAUNSCHW	(3)	0.2070	21.9	6.46	15.8	EE CB

	Summary Statistics			
NDA mean	0.08598	23.15	6.814	16.53
NDA st dev	0.08478	1.54	0.442	1.08
N	94	125	125	125

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Ca (g/kg)	(cont.)					
AGRILAB	(4)	0.0600	22.5	6.78	16.3	
LYMAN-AGRO	(5)	-	23.0	6.77	15.9	AB AA
OOSTERBEEK	(7)	0.1090 <	23.7	7.09	17.2	G CB
CIRADFLHOR	(12)	1.2000 **	26.4 *	7.40	19.4 *	AA AA
SIME DARBY	(19)	0.1300	24.3	6.65	16.0	AB AA
MARDI	(26)	0.1000	17.2 **	6.33	15.6	DB CB
KUCHING	(27)	-	21.6	6.37	15.8	AA CB
LRSCONTROL	(28)	1.0000 <	22.8	6.96	16.2	AA CB
FELDA	(30)	0.5600 **	21.3	7.34	16.5	AB AA
LKS	(31)	-	25.1	6.42	17.8	DG CB
WAGENINGEN	(32)	0.0400	22.9	6.95	16.8	G CB
OVA JORK	(35)	0.0350	21.0	6.40	16.9	AA AD
MHLUME	(36)	0.4000 **	32.6 **	8.70 **	18.2	DA AC
FORTEST	(44)	0.0900	23.2	6.59	16.0	EE CB
LABTIUM	(47)	0.0430	24.8	6.97	17.3	G CB
RELAB	(49)	0.6000 <	23.4	6.72	16.5	EE CB
SIRI	(53)	0.2100	22.8	6.85	15.8	DA CA
AAAGROUP	(56)	0.0330	22.2	6.14	15.7	AA AA
AMIS-AGRO	(58)	0.0900	22.8	6.70	16.5	AC CB
0055HIK	(59)	0.5000 <	24.3	7.30	17.1	CA D
BLRSLAL	(62)	0.5000 **	23.0	6.24	15.4	AA AA
AARESEARCH	(63)	0.0700	22.5	6.78	16.3	AB AA
MRMEAK	(65)	0.4000 <	23.5	6.60	16.1	EE CB
CORBANA	(67)	-	23.7	6.71	16.4	EE CB
HAMELN	(68)	0.0400	25.1	7.42	18.8 *	DG CB
ELML	(75)	0.0410	22.8	6.65	16.4	G CB
DFAL	(76)	0.0680	22.8	6.72	16.2	AA CB
HILL	(78)	0.2000 <	23.2	6.75	17.4	EE CB
METLAPARKA	(81)	0.0400	23.8	6.46	17.5	G CB
HLVA	(84)	0.2500 <	23.3	6.82	16.7	G CB
ELAEIS.P	(85)	0.2300	22.8	6.45	14.9	G AA
ECN	(86)	0.0431	24.0	6.76	17.1	DG CB
CIAT	(90)	0.4200 **	27.3 *	7.05	17.7	DC AF
SPSSBKCH	(91)	0.1400	23.7	6.92	17.3	AB AA
BELFAST	(97)	0.0050	25.2	7.19	18.4	DG CB
974BRET	(107)	0.2200	26.1	8.27 **	18.8 *	AA AA
POVLT	(115)	0.1000 <	22.3	6.50	15.2	EE CB
LAPANDAY	(118)	0.2100	26.7 *	7.46	17.5	DG AA
MSIRI	(121)	0.3170 *	24.6	6.97	16.6	DC AA
NEMALAB	(125)	0.4000 **	11.0 **	2.90 **	7.1 **	FB AA
GGM	(129)	0.0780	20.4	6.17	17.2	EE D
SASEXFAS	(130)	1.0000 **	11.5 **	7.50	12.0 **	AA
LEIPZIGMOE	(132)	0.0500	26.9 *	7.76 *	19.3 *	
XGCALAFIGA	(133)	0.0500	24.6	7.36	18.6	EE CB
LUNUWILA	(135)	0.1040	26.6 *	6.60	15.6	AA AA
CCWELE	(136)	0.0428	21.6	7.24	16.4	DC CB
GPM-GROUP	(143)	0.1700	23.0	8.07 *	16.9	
ARCWSG	(152)	0.0400	23.5	6.63	16.7	G CB
IRRI	(158)	0.0400	22.1	6.16	15.2	DC CB
ANALRESLAB	(159)	0.0340	22.1	6.63	15.7	EE CB
IRNASE	(164)	0.1000 <	21.6	6.54	15.5	EE CB
SYNERS	(166)	0.1900	23.3	6.92	16.4	AA CB
BVO95MBPD	(171)	0.2000 <	24.3	7.06	18.2	EE CB
SMBPLNUP	(183)	0.2400	21.0	6.50	15.7	AA CB
JYUIER	(185)	0.0430	24.4	7.28	18.1	EE CB
IPULAB	(186)	0.0750 <	23.6	6.99	17.4	G CB
SAINTE-FOY	(190)	0.0500 <	23.2	6.79	16.8	DA CB
SPAL	(196)	1.3000 **	19.2 *	10.50 **	14.0 *	DA AB
LQA-ATP	(198)	0.4100 **	23.7	6.92	17.3	AA AA
FFEEBW	(201)	0.1300	21.0	7.09	15.9	DG CB
LAIMBURG	(202)	7.3600 **	26.4 *	0.08 **	18.8 *	EE CB

===== Summary Statistics =====

NDA mean	0.08598	23.15	6.814	16.53	
NDA st dev	0.08478	1.54	0.442	1.08	
N	94	125	125	125	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Ca (g/kg) (cont.)						
SEEDLING (203)		0.8890 **	22.4	6.94	16.4	DA AA
QLDNR&M (204)		0.1000	22.8	6.76	15.8	DB CB
DANRLAB (206)		0.1000 <	23.7	7.08	17.0	EE CB
DATE (218)		0.1030	22.9	7.05	17.2	G CB
ALMP1011 (219)		1.0000 <	23.4	7.17	17.3	AB CB
VILJAVUJUSP (228)		0.0670	21.8	6.82	16.7	AA CB
GUYLAB (231)		6.6500 **	13.1 **	4.62 **	18.4	G AA
KERICHO (236)		0.0700	23.4	7.27	16.8	AA CA
RIOJALAB (238)		0.0530	22.7	6.58	16.5	DA CB
CHRON (239)		0.1370	23.4	6.03	16.5	AA CB
LASUTEVEA (241)		0.0260	23.0	6.65	16.0	
SMART (246)		0.1850	23.0	7.19	16.4	AB AA
MONICA (248)		0.0400	22.9	6.94	16.8	EB CB
REYEPS (249)		0.0400	2.5 **	6.96	1.7 **	DG CB
ABMCE (250)		0.5000 <	22.9	6.70	16.4	DA CB
UPPSALA (252)		0.0400	22.4	6.60	16.3	DB CB
PINAGRO (256)		0.0500	20.6	6.12	14.2 *	AB AA
DAR (258)		0.1000	18.9 *	5.40 **	11.4 **	DD AA
RIOGLAB (264)		0.0460	21.9	6.47	16.1	
ERSAFVGSCA (265)		0.0037	21.8	5.05 **	15.9	DC AA
LABVAL (266)		0.0430	23.7	6.39	16.8	G CB
LUARE (269)		0.2000 <	24.7	6.93	17.3	G KB
LAF (273)		0.1700	23.6	7.20	17.5	G CB
MELIPLANT (274)		0.0700	22.8	6.69	16.1	EE CB
IUNGPUL (275)		0.0970	22.8	6.42	15.6	DA AE
VICTORY (597)		0.2600 *	24.3	7.32	15.8	HB D
FOODCHEM (847)		0.0380	28.4 **	7.63	19.9 **	DB AA
AFBI (851)		-	25.3	6.97	18.1	G KB
SPASL (855)		0.0860	22.9	6.59	16.8	EE CB
PASCAanalab (870)		0.1470	22.7	6.84	16.4	AA AA
IOPRI (880)		0.3400 *	26.1	7.44	23.8 **	
LSF (895)		0.1000	23.8	6.73	17.4	
RF-R&D (905)		0.0510	24.5	6.55	18.0	DB CB
ENVSHPNL20 (913)		0.2200 <	23.6	6.88	16.9	
SABIC R&T (927)		0.0215	23.6	6.81	16.0	
RHODE (960)		0.2700 *	19.3 *	5.95	14.3 *	H CB
SAC-CAL (973)		0.0350	22.8	6.36	16.2	DG CB
AZBY (976)		0.1000	23.8	7.30	16.9	DC AA
LS-MRC (978)		0.0900	23.7	7.26	16.0	AB AA
FERTILAB (979)		0.7300 **	25.7	7.94 *	16.5	DC AD
FAST (1007)		0.0960	21.5	6.69	1.6 **	DA CB
ESPROT (1014)		0.0250	22.5	6.74	16.0	DB D
SUMIFRU (1026)		0.1900	21.9	6.58	14.8	EE CB
ETRR (1031)		-	28.4 **	8.17 **	19.8 **	L
CNES (1033)		0.1450	20.6	1.06 **	13.4 *	L
CERT (1034)		0.3230 *	24.1	7.07	17.1	L
NECSA (1035)		0.9380 **	20.8	2.44 **	5.9 **	G L
LASPEE (1036)		0.0200	9.1 **	1.05 **	6.7 **	AA AB
KomLab (1044)		0.1500	20.8	6.45	15.8	AA AC
MMLAB (1059)		0.1300	23.5	7.13	17.2	AA AA
WASL-DG (1082)		0.2800 *	16.5 **	5.02 **	12.8 **	
LABTECCOL (1087)		16.8100 **	24.3	7.06	0.2 **	AA CB
NPIAS (1089)		0.0430	24.1	6.74	17.1	L
KFKI (1091)		0.6270 **	28.1 **	9.04 **	20.1 **	L
REAK (1092)		-	27.8 **	7.90 *	14.2 *	
SACAV (1095)		-	20.0 *	6.40	14.8	
TEFA (1099)		0.0580 <	21.9	6.44	15.6	L
SYRAT (1100)		0.5200 <	21.2	4.60 **	12.3 **	
TECNUC (1103)		-	29.1 **	8.30 **	20.8 **	L
INDIES (1106)		0.0500 <	23.7	7.00	16.3	L
NOUSSE (1110)		0.2500	23.7	6.88	15.8	L

===== Summary Statistics =====

NDA mean	0.08598	23.15	6.814	16.53	
NDA st dev	0.08478	1.54	0.442	1.08	
N	94	125	125	125	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Ca (g/kg) (cont.)					
LNIP (1111)	-	8.3 **	2.24 **	7.0 **	G L
===== Statistical Results =====					
NDA mean	0.08598	23.15	6.814	16.53	
NDA st dev	0.08478	1.54	0.442	1.08	
N	94	125	125	125	
Median	0.10000	23.03	6.770	16.43	
MAD	0.06000	1.07	0.310	0.75	
=====					
Cd (µg/kg)					
ISKCLASKCE (2)	50.0 <	50.0 <	50.00 <	168	
BRAUNSCHW (3)	14.6	48.7	5.19	182	EE D
IACM LTD (15)	50.0 <	48.3	50.00 <	186	EE D
HKPC-EMD (16)	400.0 <	400.0 <	400.00 <	400 <	G D
WAGENINGEN (32)	14.0	58.0	9.00	233 *	G D
LABTIUM (47)	20.0 *	60.0	10.00	210	G D
0055HIK (59)	100.0 <	100.0 <	100.00 <	117 **	EE D
HAMELN (68)	13.0	46.0	10.00 <	213	DG D
ELML (75)	44.0 **	140.0 **	106.00 **	270 **	G CB
HLVA (84)	12.9	50.8	2.33	193	G D
ECN (86)	100.0 <	100.0 <	100.00 <	216	DG CB
POVLT (115)	12.7	50.6	10.00 <	201	EE CB
LEIPZIGMOE (132)	14.5	52.7	4.21	198	
CCWELE (136)	13.5	52.1	1.90	201	EE D
KGZMB-P (150)	50.0 <	49.0	50.00 <	198	G BC
ANALRESLAB (159)	9.9	54.0	4.10	192	DC AA
IRNASE (164)	25.2 **	66.5	14.20 *	233 *	EE CB
JYUIER (185)	50.0 <	50.0 <	50.00 <	189	EE D
FFEEBW (201)	38.0 **	60.0	20.00 <	217	DG CB
QLDNR&M (204)	14.0	49.0	5.00	206	DB D
DATE (218)	11.0	109.0 **	41.00 **	142 *	G CB
CHRON (239)	20.0 *	45.0	10.00	170	
MONICA (248)	600.0 <	600.0 <	600.00 <	600 <	EB CB
ABMCE (250)	20.0 *	60.0	10.00 <	200	EE D
IRQ-1992-S (251)	20.0 <	44.3	20.00 <	186	EE BC
UPPSALA (252)	11.0	49.2	11.00 <	196	DB CB
RIOGLAB (264)	12.1	53.2	3.78	181	EE D
LABVAL (266)	70.0 <	74.2 *	70.00 <	193	
LUARE (269)	50.0 <	50.0 <	50.00 <	180	DB CB
TECHHK (270)	13.4	52.2	2.89	201	EE D
IUNGPUL (275)	13.5	47.8	5.00 <	180	DB BG
FOODCHEM (847)	4.9 *	9.0 **	1.48	52 **	DB BF
SPASL (855)	-	64.9	47.95 **	171	EE CB
PHARM (969)	340.0 <	340.0 <	340.00 <	340 <	DG CB
ESPROT (1014)	100.0 <	100.0 <	100.00 <	100 < **	DB D
NPIAS (1089)	180.0 <	2150.0 <	2310.00 <	1870 <	L
TEFA (1099)	270.0 <	487.0 <	473.00 <	538 <	L
SYRAT (1100)	315.0 <	681.0 <	1178.00 <	724 <	
INDIES (1106)	400.0 <	400.0 <	400.00 <	400 <	L
DESAR (1108)	11.0	36.0	2.00	150 *	JB AF
===== Statistical Results =====					
NDA mean	13.03	51.90	4.650	193.8	
NDA st dev	2.72	8.24	4.283	19.1	
N	22	27	17	32	
Median	13.50	52.10	5.000	193.0	
MAD	1.95	5.90	3.100	13.0	
=====					

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Cl (as Cl) (g/kg)						
OOSTERBEEK	(7)	0.545 <	5.54	11.7	1.33	FA E
CIRADFLHOR	(12)	0.300	5.10	10.9	1.00	
LRSCONTROL	(28)	0.554 **	5.54	11.5	1.24	FB H
RELAB	(49)	0.573 **	5.65	12.0	1.32	FA JE
AMIS-AGRO	(58)	0.310	5.30	11.5	1.21	FB O
BLRSLAL	(62)	8.390 **	14.59 **	3.0 **	2.99 **	FA O
AARESEARCH	(63)	0.390 *	5.33	11.3	1.14	FB O
HILL	(78)	0.500 <	5.25	11.4	1.12	FB O
HLVA	(84)	0.330	5.25	11.4	1.26	
ELAEIS.P	(85)	0.550 **	5.20	11.3	1.15	
POVLT	(115)	0.710 **	0.40 **	6.0 **	1.05	FA JE
ANALRESLAB	(159)	0.300	4.90	10.9	1.10	FB O
SYNERS	(166)	0.400 **	0.50 **	8.2 **	0.70 **	DB O
QLDNR&M	(204)	0.300	4.40 *	10.8	0.70 **	FA E
DANRLAB	(206)	0.290	4.98	11.2	1.25	FA JE
SMART	(246)	0.524 **	5.54	11.4	1.44	FA E
LUARE	(269)	0.300	5.26	11.3	1.37	G KB
LAF	(273)	0.329	5.37	0.0 **	0.80 *	FA O
SMART-BGR	(1016)	0.290	5.01	11.0	1.22	FB O
ETRR	(1031)	0.259	5.22	10.5	1.20	L
CNES	(1033)	0.312	5.59	2.3 **	1.25	L
CERT	(1034)	0.302	5.31	11.2	1.27	L
NECSA	(1035)	0.103 **	4.51	9.7 *	0.69 **	G L
NPIAS	(1089)	0.324	5.87	11.9	1.39	L
KFKI	(1091)	0.361	6.20 *	13.8 **	1.53	L
SYRAT	(1100)	0.290	4.64	9.9 *	1.27	
DESAR	(1108)	0.300	5.15	11.0	1.22	A L
LNIP	(1111)	0.206 **	3.73 **	7.6 **	0.89 *	G L

	Statistical Results			
NDA mean	0.3055	5.266	11.24	1.225
NDA st dev	0.0290	0.403	0.54	0.153
N	26	28	28	28
Median	0.3110	5.250	11.09	1.221
MAD	0.0210	0.286	0.39	0.104

Co (µg/kg)						
BRAUNSCHW	(3)	2.68	258	76.7	275	EE D
OOSTERBEEK	(7)	43.57 <	300	86.1	293	G D
WAGENINGEN	(32)	2.00	342	77.0	290	G D
LABTIUM	(47)	100.00 **	340	100.0	340	G D
0055HIK	(59)	1000.00 <	1000 <	1000.0 <	1000 <	EE D
HAMELN	(68)	-	265	74.0	299	DG D
ELML	(75)	65.60 **	150 *	21.2 **	173 *	G CB
HILL	(78)	10.00 <	237	72.6	275	EE D
HLVA	(84)	10.00 <	336	78.6	276	G D
ECN	(86)	300.00 <	320	300.0 <	300 <	DG CB
GGM	(129)	20.00 <	210	99.0	260	EE D
LEIPZIGMOE	(132)	2.99	395	82.1	322	
CCWELE	(136)	3.00	378	89.7	315	EE D
ANALRESLAB	(159)	4.00	332	85.0	288	EE CB
IRNASE	(164)	20.00 <	225	69.0	249	EE CB
JYUIER	(185)	50.00 <	272	88.4	306	EE D
FFEEBW	(201)	50.00 <	299	63.0	274	DG CB
QLDNR&M	(204)	5.00	317	78.0	280	DB D
DATE	(218)	19.00	213	151.0 **	215	DB CA
CHRON	(239)	30.00 *	250	80.0	280	AA CB
MONICA	(248)	1200.00 <	1200 <	1200.0 <	1200 <	EB CB
ABMCE	(250)	20.00	290	90.0	300	EE D
UPPSALA	(252)	10.00 <	226	73.3	270	DB CB

	Summary Statistics			
NDA mean	5.744	321.1	81.40	294.2
NDA st dev	8.149	81.3	12.81	45.2
N	25	44	40	43

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Co (µg/kg) (cont.)						
RIOGLAB	(264)	3.11	312	89.2	290	EE D
TECHHK	(270)	2.21	278	82.0	291	EE D
VICTORY	(597)	16.00	542 *	138.0 **	399 *	HB D
FOODCHEM	(847)	5.35	281	68.9	281	DB BF
SPASL	(855)	298.35 **	539 *	20.9 **	898 **	EE CB
SAC-CAL	(973)	100.00 <	299	100.0 <	235	DG CB
ESPROT	(1014)	361.50 **	434	252.9 **	436 **	DB D
MASHA	(1029)	-	395	72.0	258	G L
ETRR	(1031)	-	403	-	344	L
CNES	(1033)	-	1 **	0.5 **	0 **	
NECSA	(1035)	6.94	618 **	2530.0 **	321	G L
NPIAS	(1089)	9.00 <	403	84.0	326	L
KFKI	(1091)	9.13	377	146.0 **	374	L
REAK	(1092)	-	330	-	160 *	- L
SACAV	(1095)	51.00 **	420	113.0 *	359	
ATCHI	(1098)	126.00 **	287	141.0 **	209	
TEFA	(1099)	4.00 <	360	78.8	303	L
SYRAT	(1100)	8.10	392	82.4	317	
TECNUC	(1103)	-	403	88.0	334	L
DESAR	(1108)	1.70	370	90.0	330	A L
YAZA	(1109)	1201.00 **	1651 **	1702.0 **	2169 **	G L
NOUSSE	(1110)	1.98	344	77.6	258	L
LNIP	(1111)	-	293	168.0 **	391 *	G L

	Statistical Results			
NDA mean	5.744	321.1	81.40	294.2
NDA st dev	8.149	81.3	12.81	45.2
N	25	44	40	43
Median	8.100	325.0	83.20	291.0
MAD	6.120	56.5	9.55	31.0

Cr (µg/kg)						
BRAUNSCHW	(3)	47	685	982	2180	EE D
WAGENINGEN	(32)	37	1023	977	3969	G D
LABTIUM	(47)	500 <	910	1460	2980	G D
0055HIK	(59)	1000 <	1160	1400	2800	EE D
HAMELN	(68)	-	769	-	2187	DG D
ELML	(75)	372 *	782	648	1886	G CB
HLVA	(84)	104	1066	1180	2692	G D
ECN	(86)	800 <	1260	1658	3328	DG CB
LEIPZIGMOE	(132)	47	1207	1127	2827	
CCWELE	(136)	94	884	1344	2756	EE D
ARCWSG	(152)	447 *	868	965	2333	G CB
ANALRESLAB	(159)	98	880	884	2482	DC AE
IRNASE	(164)	82	802	1159	2392	EE CB
JYUIER	(185)	203	1060	1280	2210	EE D
FFEEBW	(201)	115	1027	1059	2581	DG CB
DATE	(218)	34	450	621	2410	G CB
CHRON	(239)	50	700	900	1500	
MONICA	(248)	600 <	1192	1550	2595	EB CB
ABMCE	(250)	200 <	830	1080	2210	EE D
IRQ-1992-S	(251)	185	1277	843	2418	EE BC
UPPSALA	(252)	104 <	628	574	1774	DB CB
RIOGLAB	(264)	52	778	1322	2799	EE D
LABVAL	(266)	217 <	763	942	2010	G CB
TECHHK	(270)	30	800	1170	2270	EE D
IUNG PUL	(275)	278	936	683	2173	DB BG
VICTORY	(597)	630 **	2410 **	2050 *	3450	HB D
FOODCHEM	(847)	91	850	964	1882	DB BF
SPASL	(855)	129	757	546	1897	EE CB

	Summary Statistics			
NDA mean	109.7	1038	1098	2539
NDA st dev	119.5	408	350	825
N	32	48	47	48

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Cr (µg/kg) (cont.)						
TLR	(900)	5000 <	5000 <	5000 <	5000 <	
ENVSHPNL20	(913)	500 <	22483 **	793	1935	
ESPROT	(1014)	3227 **	5045 **	8278 **	8274 **	DB D
MASHA	(1029)	-	1370	940	2570	
CGEA	(1030)	240	1174	1243	3 **	G D
ETRR	(1031)	-	1420	1160	2720	L
CNES	(1033)	-	-	-	3 **	L
NECSA	(1035)	1503 **	2590 **	2969 **	4184	G L
LASPEE	(1036)	2159 **	6700 **	370 *	1430	AA AB
INSTN	(1037)	12674 **	15541 **	3035 **	9852 **	DG Z
NPIAS	(1089)	100 <	1245	1259	3470	L
KFKI	(1091)	83	1446	1566	3872	L
REAK	(1092)	-	1570	9400 **	5400 **	- L
SACAV	(1095)	3240 **	3650 **	4870 **	6150 **	
ATCHI	(1098)	-	1180	1150	2550	
TEFA	(1099)	122 <	1258	1033	-	L
SYRAT	(1100)	134	1130	1297	3267	
TECNUC	(1103)	-	1640	1440	3240	L
INDIES	(1106)	230	1380	1300	3610	L
DESAR	(1108)	140	1340	1130	3500	A L
NOUSSE	(1110)	18	187 *	180 *	1685	L
LNIP	(1111)	899 **	1610	2060 *	2540	G L

	Statistical Results			
NDA mean	109.7	1038	1098	2539
NDA st dev	119.5	408	350	825
N	32	48	47	48
Median	131.3	1145	1159	2560
MAD	89.4	298	241	588

Cs (µg/kg)						
CCWELE	(136)	1.20	45.9	1091 **	74.9	
RIOGLAB	(264)	0.49	33.0 *	100	53.8 *	EE D
VICTORY	(597)	4.50	39.6	81	80.5	HB D
MASHA	(1029)	-	42.0	87	66.0	G L
NECSA	(1035)	31.30	-	94	-	
NPIAS	(1089)	7.00 <	11.6 **	8 **	12.2 **	L
KFKI	(1091)	-	52.5	112	70.1	L
SACAV	(1095)	45.00	157.0 **	96	126.0 **	
ATCHI	(1098)	-	-	70	72.9	
TEFA	(1099)	8.90 <	45.8	115	74.1	L
SYRAT	(1100)	4.99	43.1	103	79.7	
TECNUC	(1103)	-	68.0 **	136	108.0 **	L
DESAR	(1108)	-	50.0	110	70.0	A L
NOUSSE	(1110)	3.70	48.6	110	68.9	L
LNIP	(1111)	-	48.5	120	90.2	G L

	Statistical Results			
NDA mean	-	45.85	103.1	73.12
NDA st dev	-	5.85	17.7	9.25
N	7	13	15	14
Median	4.500	45.90	102.8	73.50
MAD	3.300	4.10	12.2	6.60

Cu (mg/kg)						
ISKCLASKCE	(2)	1.86	3.94	11.3	8.59	
BRAUNSWH	(3)	3.59 **	5.54 *	12.8	10.41	EE CB
AGRILAB	(4)	2.08	4.13	11.2	8.55	
LYMAN-AGRO	(5)	0.99 *	4.00	10.1	6.21 *	AA AA

	Summary Statistics			
NDA mean	1.815	4.257	11.49	8.660
NDA st dev	0.326	0.570	0.87	1.122
N	105	107	107	108

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Cu (mg/kg) (cont.)					
OOSTERBEEK (7)	1.86	4.40	12.6	10.06	G CB
MARDI (26)	2.04	4.05	11.2	9.03	DB CB
KUCHING (27)	3.00 **	5.00	13.0	7.00	AA CB
LRSCONTROL (28)	1.52	3.85	10.6	8.51	EE CB
FELDA (30)	2.02	4.24	11.5	7.48	AA AA
LKS (31)	2.19	5.02	11.1	9.88	DG CB
WAGENINGEN (32)	1.72	3.92	11.7	9.20	G CB
OVA JORK (35)	2.00	4.90	11.9	6.90	AA AD
FORTEST (44)	1.50	4.00	11.8	8.50	EE CB
LABTIUM (47)	1.94	4.80	14.0 *	9.49	G D
RELAB (49)	1.59	3.95	11.5	8.50	EE CB
SIRI (53)	2.39	4.99	11.0	4.58 **	DA AA
AAAGROUP (56)	1.46	4.61	10.3	7.64	AA AA
AMIS-AGRO (58)	1.70	3.90	11.1	8.50	AC CB
0055HIK (59)	1.82	4.29	12.5	9.21	EE D
BLRSLAL (62)	1.92	5.32	12.1	6.66	AA AA
AARESEARCH (63)	1.67	4.33	11.3	8.67	AA AA
MRMEAK (65)	1.48	3.70	11.2	8.34	EE CB
CORBANA (67)	1.87	3.75	12.3	8.69	EE CB
HAMELN (68)	2.02	4.61	12.4	9.83	DG CB
ELML (75)	1.38	4.00	12.2	9.68	G CB
DFAL (76)	2.09	4.34	11.4	8.50	AA CB
HILL (78)	1.68	3.25	11.0	8.71	EE CB
METLAPARKA (81)	1.80	3.87	10.8	8.52	G CB
HLVA (84)	1.65	4.09	11.4	8.50	G D
ELAEIS.P (85)	2.24	4.68	11.0	8.41	DA AA
ECN (86)	1.65	4.91	11.4	9.59	DG CB
CIAT (90)	2.04	3.88	11.7	8.31	DC/AB
SPSSBKCH (91)	3.70 **	5.72 *	12.4	7.82	AB AA
974BRET (107)	8.77 **	6.03 **	13.2	6.85	AA AA
POVLT (115)	1.60	4.86	12.7	9.10	EE CB
LAPANDAY (118)	2.00	5.00	12.0	8.00	DG AA
NEMALAB (125)	1.50	3.80	12.0	8.20	FB AA
GGM (129)	2.22	3.48	11.6	8.87	EE D
SASEXFAS (130)	2.00	4.03	11.0	8.50	
LEIPZIGMOE (132)	1.86	4.22	11.6	9.10	
XGCALAFIGA (133)	0.99 *	3.35	11.1	10.26	EE CB
LUNUWILA (135)	1.65	4.12	10.9	8.63	AA AA
CCWELE (136)	1.67	4.35	11.7	9.48	EE D
GPM-GROUP (143)	1.80	4.43	14.4 **	6.00 *	
ARCWSG (152)	1.66	3.85	11.5	9.18	G CB
IRRI (158)	1.75	3.25	11.0	7.69	DC CB
ANALRESLAB (159)	1.82	4.13	10.4	8.28	EE CB
IRNASE (164)	1.61	3.91	11.4	8.66	EE CB
SYNERS (166)	1.88	3.56	10.4	6.41 *	AA CB
BVO95MBPD (171)	2.51 *	4.57	12.1	9.65	EE CB
SMBPLNUP (183)	1.84	4.30	10.7	5.69 *	AA CB
JYUIER (185)	1.27	3.72	11.1	8.53	EE CB
IPULAB (186)	1.65	4.20	12.2	9.15	G CB
SAINTE-FOY (190)	20.00 <	20.00 <	20.0 <	20.00 <	DA CB
LQA-ATP (198)	1.45	4.36	10.7	6.78	AA AA
FFEEBW (201)	2.22	4.27	11.2	8.69	DG CB
LAIMBURG (202)	12.98 **	4.73	3.8 **	11.56 *	EE/CB
QLDNR&M (204)	1.74	4.20	12.5	9.40	DB CB
DANRLAB (206)	1.79	4.66	12.1	9.11	EE CB
DATE (218)	2.21	4.68	11.1	8.98	G CB
ALMP1011 (219)	2.00 <	2.23 **	8.2 **	3.81 **	AB CB
VILJAVUUSP (228)	1.19	5.19	9.8	5.87 *	AA CB
KERICO (236)	2.23	4.25	10.5	6.44	AA AA
RIOJALAB (238)	1.78	4.56	11.9	9.66	DA CB
CHRON (239)	2.49 *	5.00	11.1	5.62 *	AA CB

	Summary Statistics				
NDA mean	1.815	4.257	11.49	8.660	
NDA st dev	0.326	0.570	0.87	1.122	
N	105	107	107	108	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Cu (mg/kg) (cont.)						
LASUTEVEA	(241)	2.20	6.13 **	11.4	10.24	
SMART	(246)	1.54	4.58	11.7	7.17	AB AA
MONICA	(248)	3.60 <	4.02	11.8	8.65	EB CB
REYEPS	(249)	1.77	3.39	9.0 *	7.03	DG BC
ABMCE	(250)	1.74	4.30	11.9	8.87	EE D
IRQ-1992-S	(251)	2.77 *	4.16	9.5 *	7.56	EE AB
UPPSALA	(252)	1.80	3.50	11.7	8.60	DB CB
PINAGRO	(256)	2.21	5.24	1.8 **	4.61 **	AB AA
DAR	(258)	3.80 **	10.20 **	13.4 *	11.40 *	DD AA
RIOGLAB	(264)	1.64	4.49	10.6	7.94	EE D
ERSAFVGSCA	(265)	0.80 **	3.17	10.1	7.04	DC AA
LABVAL	(266)	1.72	4.08	10.9	8.58	G CB
LUARE	(269)	1.87	4.39	12.2	9.59	DB CB
TECHHK	(270)	1.73	4.18	11.9	8.93	EE D
LAF	(273)	2.67 *	4.33	12.3	9.33	G CB
MELIPLANT	(274)	2.10	4.12	11.0	8.65	EE CB
IUNGPUL	(275)	1.97	4.48	12.0	8.92	DB AC
VICTORY	(597)	1.61	4.61	10.1	8.97	HB D
WELLAB	(714)	1.37	3.47	9.9	8.41	EDCB
FOODCHEM	(847)	1.61	4.25	11.2	8.51	DB AA
SPASL	(855)	5.27 **	9.17 **	15.2 **	10.83	EE CB
PASCSAnalab	(870)	4.04 **	4.84	12.1	8.55	AA AA
IOPRI	(880)	5.27 **	5.53 *	11.9	6.90	
LSF	(895)	2.00	4.00	11.5	9.00	
RF-R&D	(905)	1.78	-	12.2	9.81	DB CB
ENVSHPNL20	(913)	2.00 <	4.68	9.4 *	9.25	
RHODE	(960)	1.65	4.02	10.6	6.47	H CB
SAC-CAL	(973)	1.95	5.10	12.1	9.55	DG CB
AZBY	(976)	5.70 **	8.30 **	16.5 **	13.40 **	DC AA
LS-MRC	(978)	1.51	3.70	3.2 **	5.60 *	AA AA
FERTILAB	(979)	1.99	4.59	12.4	9.58	DC AD
FAST	(1007)	1.92	4.06	11.6	8.96	DA CB
ESPROT	(1014)	2.13	4.65	11.6	9.12	DB D
SMART-BGR	(1016)	1.83	4.28	11.7	7.45	AA CB
NISLT	(1017)	8.03 **	10.91 **	13.2	10.02	
SUMIFRU	(1026)	1.07 *	3.27	2.0 **	3.13 **	EE CB
CGEA	(1030)	1.63	3.68	14.9 **	6.13 *	
INSTN	(1037)	8.13 **	5.35	11.9	9.10	DG BC
KomLab	(1044)	1.70	4.32	11.0	7.95	AA AC
MMLAB	(1059)	1.89	4.68	11.0	7.87	AA AA
WASL-DG	(1082)	97.00 **	14.00 **	4.0 **	11.10 *	
LABTECCOL	(1087)	7.18 **	3.80	5.1 **	2.11 **	AA CB
NPIAS	(1089)	1.70 <	6.50 <	40.0 <	15.90 <	L
KFKI	(1091)	2.11	8.70 **	-	18.90 **	L
SYRAT	(1100)	11.32 <	13.29 <	51.2 <	42.60 <	
DESAR	(1108)	2.00	4.00	11.0	8.50	J AA

	Statistical Results			
NDA mean	1.815	4.257	11.49	8.660
NDA st dev	0.326	0.570	0.87	1.122
N	105	107	107	108
Median	1.860	4.290	11.40	8.585
MAD	0.230	0.390	0.60	0.757

F (mg/kg)						
WAGENINGEN	(32)	0.1 <	18.2	0.1	12.5	B E
TLR	(900)	5.0 <	30.1	5.0 <	23.1	
ENVSHPNL20	(913)	35.9	219.6	112.7	463.7	

	Statistical Results (no NDA)			
N	1	3	2	3
Median	35.93	30.10	56.42	23.10
MAD	-	11.90	56.32	10.60

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Fe (mg/kg)						
BRAUNSCHW	(3)	34.0	228	108	474	EE CB
AGRILAB	(4)	24.2	223	109	441	
LYMAN-AGRO	(5)	30.6	68 **	79 **	320 *	AA AA
OOSTERBEEK	(7)	45.8	230	122	505	G CB
CIRADFLHOR	(12)	31.6	212	116	395	AA AA
MARDI	(26)	28.8	221	111	519	DB CB
KUCHING	(27)	44.0	230	121	445	AA CB
LRSCONTROL	(28)	34.6	237	105	479	EE CB
FELDA	(30)	148.8 **	239	194 **	446	AA AA
LKS	(31)	33.9	192	98	421	DG CB
WAGENINGEN	(32)	36.0	269	111	517	G CB
OVA JORK	(35)	24.2	212	99	357	AA AD
FORTEST	(44)	32.8	214	106	453	EE CB
LABTIUM	(47)	37.2	238	120	485	G CB
RELAB	(49)	34.1	228	109	427	EE CB
SIRI	(53)	32.0	176 *	106	229 **	DA AA
AAAGROUP	(56)	29.6	222	105	431	AA AA
AMIS-AGRO	(58)	43.0	238	114	499	AC CB
0055HIK	(59)	34.1	252	117	516	EE D
BLRSLAL	(62)	83.7 **	229	138 *	397	AA AA
AARESEARCH	(63)	34.5	232	111	442	AA AA
MRMEAK	(65)	22.8	205	110	441	EE CB
CORBANA	(67)	30.9	215	105	429	EE CB
HAMELN	(68)	39.2	243	117	496	DG CB
ELML	(75)	33.4	214	118	462	G CB
DFAL	(76)	24.4	238	110	450	AA CB
HILL	(78)	32.1	203	105	451	EE CB
METLAPARKA	(81)	31.0	187	94	415	G CB
HLVA	(84)	36.5	251	108	531	G CB
ELAEIS.P	(85)	36.3	151 *	102	272 **	G AA
ECN	(86)	40.3	287 *	118	531	DG CB
CIAT	(90)	31.3	218	113	479	DC AB
SPSSBKCH	(91)	42.4	203	97	398	AB AA
974BRET	(107)	39.7	257	118	430	AA AA
POVLT	(115)	31.9	213	114	449	EE CB
LAPANDAY	(118)	33.0	254	164 **	373	DG AA
NEMALAB	(125)	43.0	246	134 *	518	FB AA
GGM	(129)	46.6	170 *	115	440	EE D
SASEXFAS	(130)	69.0 **	212	120	390	
LEIPZIGMOE	(132)	42.3	323 **	127	574	
XGCALAFIGA	(133)	33.2	235	113	493	EE CB
LUNUWILA	(135)	28.4	227	109	512	AA AA
CCWELE	(136)	31.4	224	104	496	DC CB
GPM-GROUP	(143)	40.0	308 *	198 **	376	
ARCWSG	(152)	37.6	262	111	475	G CB
IRRI	(158)	42.1	216	107	427	DC CB
ANALRESLAB	(159)	45.6	219	99	418	EE CB
IRNASE	(164)	67.4 **	231	111	462	EE CB
SYNERS	(166)	34.6	201	99	367	AA CB
BVO95MBPD	(171)	36.2	193	105	406	EE CB
SMBPLNUP	(183)	27.1	193	98	360	AA CB
JYUIER	(185)	39.6	221	115	487	EE CB
IPULAB	(186)	37.3	248	117	498	G CB
SAINTE-FOY	(190)	100.0 <	257	130	542	DA CB
SPAL	(196)	170.0 **	146 **	154 **	156 **	DA AB
LQA-ATP	(198)	51.8	226	111	471	AA AA
FFEEBW	(201)	43.1	243	119	488	DG CB
LAIMBURG	(202)	107.9 **	273	38 **	529	EE CB
QLDNR&M	(204)	29.1	222	111	429	DB CB
DANRLAB	(206)	30.3	205	111	438	EE CB
DATE	(218)	45.3	231	121	470	G CB

	Summary Statistics				
NDA mean	35.96	231.6	112.2	466.9	
NDA st dev	8.30	27.6	10.2	56.8	
N	116	119	120	120	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Fe (mg/kg) (cont.)						
ALMP1011 (219)		18.1 *	147 **	72 **	210 **	AB CB
VILJAVUUSP (228)		48.1	260	107	476	AA CB
KERICHO (236)		39.5	227	108	484	AA AA
RIOJALAB (238)		33.9	240	119	463	DA CB
CHRON (239)		40.0	255	129	451	AA CB
LASUTEVEA (241)		29.6	229	108	457	
SMART (246)		28.1	235	113	79 **	AA AA
MONICA (248)		29.9	261	113	518	EB CB
REYEPS (249)		-	271	121	536	DG CB
ABMCE (250)		35.6	236	108	465	EE D
IRQ-1992-S (251)		38.9	231	98	469	EE AB
UPPSALA (252)		53.5 *	223	116	465	DB CB
PINAGRO (256)		34.7	209	13 **	361	AB AA
DAR (258)		53.0 *	221	537 **	732 **	DD AA
RIOGLAB (264)		36.0	227	110	478	EE D
ERSAFVGSCA (265)		37.1	255	114	479	DC AA
LABVAL (266)		33.2	215	103	464	G CB
LUARE (269)		37.1	231	118	478	DB CB
LAF (273)		34.7	210	114	455	G CB
IUNGPUL (275)		46.1	240	104	484	AA CB
VICTORY (597)		115.0 **	645 **	398 **	775 **	HB D
FOODCHEM (847)		33.8	234	115	510	DB AA
SPASL (855)		87.2 **	228	112	399	EE CB
PASCAanalab (870)		37.6	237	119	440	AA AA
IOPRI (880)		87.9 **	219	112	387	
LSF (895)		46.2	240	113	503	
SABIC R&T (927)		32.0	197	101	338 *	
RHODE (960)		34.7	172 *	96	391	H CB
SAC-CAL (973)		33.1	222	109	440	DG CB
AZBY (976)		53.1 *	217	136 *	558	DC AA
LS-MRC (978)		48.9	298 *	259 **	430	AA AA
FERTILAB (979)		36.2	212	113	448	DC AD
FAST (1007)		39.4	265	128	681 **	DA CB
SMART-BGR (1016)		40.9	183	163 **	455	AA CB
NISLT (1017)		17.2 *	249	154 **	587 *	
SUMIFRU (1026)		33.4	220	113	427	EE CB
MASHA (1029)		34.0	320 **	110	560	G L
CGEA (1030)		511.4 **	105 **	243 **	50 **	G D
ETRR (1031)		38.0	294 *	141 *	531	L
CNES (1033)		-	265	143 **	479	L
NECSA (1035)		50.6	253	117	479	G L
LASPEE (1036)		58.6 *	268	160 **	476	AA AB
INSTN (1037)		128.9 **	274	156 **	553	DG AA
KomLab (1044)		47.5	176 *	99	313 *	AA AC
MMLAB (1059)		30.2	242	121	459	AA AA
WASL-DG (1082)		215.0 **	222	219 **	837 **	
LABTECCOL (1087)		420.5 **	208	57 **	15 **	AA CB
NPIAS (1089)		32.0	259	119	556	L
KFKI (1091)		28.3	284	118	576	L
REAK (1092)		210.0 **	340 **	250 **	460	- L
SACAV (1095)		46.0	276	94	532	
ATCHI (1098)		-	-	113	407	
TEFA (1099)		31.3	245	113	520	L
SYRAT (1100)		37.5	300 *	141 *	669 **	
TECNUC (1103)		58.3 *	342 **	123	623 *	L
INDIES (1106)		54.9 *	321 **	133 *	582 *	L
DESAR (1108)		38.0	260	119	568	A L
NOUSSE (1110)		30.4	268	121	500	L
LNIP (1111)		121.0 **	291 *	174 **	498	G L

	Statistical Results			
NDA mean	35.96	231.6	112.2	466.9
NDA st dev	8.30	27.6	10.2	56.8
N	116	119	120	120
Median	37.10	230.5	113.0	464.4
MAD	5.88	18.6	7.3	38.2

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Ga (µg/kg)						
VICTORY	(597)	32.0	373	211	300	HB D
NPIAS	(1089)	26.0 <	1250 <	160 <	160 <	L
===== Statistical Results (no NDA) =====						
N		1	1	1	1	
Median		32.00	373.0	211.0	300.0	
MAD		-	-	-	-	
=====						
Hg (µg/kg)						
IACM LTD	(15)	50.00 <	50.00 <	50.0 <	85.4	EE D
HKPC-EMD	(16)	100.00 <	100.00 <	100.0 <	100.0 <	G D
LRSCONTROL	(28)	0.69	9.54	10.9	91.2	H E
LABTIUM	(47)	5.40	6.00	5.0 < **	71.8 *	H Z
0055HIK	(59)	10.00 <	11.40	12.8	81.3	EE G
HAMELN	(68)	6.00 <	8.01	10.5	79.1	DG G
ELML	(75)	77.00	161.00 **	63.7 **	55.0 **	G CB
HLVA	(84)	0.32	8.49	9.8	88.3	G G
ECN	(86)	3.00 <	15.20 **	11.5	93.6	DG G
POVLT	(115)	10.00 <	10.00 <	12.8	84.5	EE G
LEIPZIGMOE	(132)	1.45	8.96	9.5	86.4	
JYUIER	(185)	16.70	16.90 **	14.8 *	90.3	EE D
ABMCE	(250)	1.00 <	9.00	11.0	90.0	G Z
RIOGLAB	(264)	2.00 <	8.98	10.5	92.4	H G
TECHHK	(270)	0.93	8.67	10.0	83.2	EE D
IUNGPUL	(275)	5.00 <	7.70	8.9	99.8	H Z
WELLAB	(714)	50.00 <	50.00 <	50.0 <	62.7 **	
ENVSHPNL20	(913)	10.00 <	11.00	11.0	97.0	
PHARM	(969)	690.00 <	690.00 <	690.0 <	690.0 <	DG CB
SAC-CAL	(973)	100.00 <	100.00 <	100.0 <	100.0 <	DG G
NPIAS	(1089)	35.00 <	40.00 <	30.0 <	90.0 <	L
SYRAT	(1100)	30.40 <	161.00 <	76.6 **	244.0 **	
DESAR	(1108)	-	-	-	108.0 *	A L
===== Statistical Results =====						
NDA mean		-	8.879	10.78	88.27	
NDA st dev		-	1.590	1.70	7.87	
N		7	14	15	19	
Median		1.450	8.990	11.00	88.30	
MAD		1.129	1.134	1.24	5.30	
=====						
I (µg/kg)						
OOSTERBEEK	(7)	108.9 <	364	286	1532	G D
HILL	(78)	50.0 <	276	208	1259	G D
ANALRESLAB	(159)	39.8	292	243	1477	G E
NPIAS	(1089)	130.0 <	430 <	3100 <	1200 <	L
KFKI	(1091)	-	-	-	1997	L
SYRAT	(1100)	1073.0 <	3597 <	7089 <	5406 <	
===== Statistical Results (no NDA) =====						
N		1	3	3	4	
Median		39.80	292.0	243.0	1504	
MAD		-	16.0	35.0	136	
=====						
K (g/kg)						
ISKCLASKCE	(2)	4.73	25.0 <	25.0 < **	4.70	G CB
BRAUNTSCHW	(3)	4.37	25.8	37.9	4.67	EE CB
AGRILAB	(4)	3.75	26.1	37.9	4.51	
LYMAN-AGRO	(5)	5.83 **	31.6 **	39.9	5.27	AB CA
===== Summary Statistics =====						
NDA mean		4.489	26.20	37.67	4.495	
NDA st dev		0.400	1.65	2.55	0.411	
N		131	131	131	131	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
K (g/kg) (cont.)						
OOSTERBEEK	(7)	5.01	28.3	39.8	5.13	G CB
CIRADFLHOR	(12)	4.40	22.4 *	33.5	4.10	AA CA
SIME DARBY	(19)	4.73	27.4	39.3	4.76	AB CA
MARDI	(26)	3.09 **	27.3	37.2	3.70	DB CB
KUCHING	(27)	4.23	24.9	36.4	3.93	AA CB
LRSCONTROL	(28)	4.06	25.9	37.0	3.87	AA CB
FELDA	(30)	4.41	25.7	37.3	4.20	AB CA
LKS	(31)	4.58	28.2	37.7	4.55	DG CB
WAGENINGEN	(32)	4.70	27.9	39.0	4.80	G CB
OVA JORK	(35)	4.35	25.2	36.6	4.10	AA CA
MHLUME	(36)	4.00	25.2	36.4	3.90	DA AC
FORTEST	(44)	4.34	24.7	36.7	4.39	EE CB
REDUIT	(45)	4.40	25.8	35.7	4.31	DB Z
LABTIUM	(47)	4.85	29.6 *	40.8	4.95	G CB
RELAB	(49)	4.72	26.9	38.4	4.61	EE CB
SIRI	(53)	4.56	24.9	36.5	4.56	DA CA
AAAGROUP	(56)	4.65	26.4	37.1	4.42	AA AA
AMIS-AGRO	(58)	4.45	26.3	36.9	5.20	AC CB
0055HIK	(59)	4.49	28.8	40.6	4.37	EE D
BLRSLAL	(62)	7.09 **	25.0	24.2 **	4.34	AA CA
AARESEARCH	(63)	4.50	26.2	38.5	4.20	AB CA
MRMEAK	(65)	4.50	26.4	38.3	4.50	EE CB
CORBANA	(67)	4.67	26.3	38.5	4.45	EE CB
HAMELN	(68)	4.77	27.4	39.5	4.77	DG CB
ELML	(75)	4.65	26.4	38.6	4.48	G CB
DFAL	(76)	3.71	26.1	37.2	4.47	AA CB
HILL	(78)	4.63	25.8	38.2	4.68	EE CB
METLAPARKA	(81)	4.60	26.3	36.9	4.45	G CB
HLVA	(84)	4.69	26.7	38.9	4.65	G CB
ELAEIS.P	(85)	4.30	24.4	34.9	4.05	DA AA
ECN	(86)	4.62	25.3	34.6	5.03	DG CB
CIAT	(90)	4.00	28.6	41.4	3.84	DC AB
SPSSBKCH	(91)	4.36	25.8	37.4	4.17	AB Z
BELFAST	(97)	4.96	28.2	40.9	4.80	DG CB
974BRET	(107)	4.88	28.1	40.2	4.31	AA AA
POVLT	(115)	4.54	26.3	37.9	4.40	EE CB
LAPANDAY	(118)	4.40	24.0	35.4	4.26	DG AA
NEMALAB	(125)	3.70	20.5 **	29.9 **	3.40 *	FB AA
GGM	(129)	6.03 **	25.5	39.4	4.68	EE D
SASEXFAS	(130)	5.00	26.0	38.5	5.00	
XGCALAFIGA	(133)	4.72	27.2	39.2	4.72	EE CB
LUNUWILA	(135)	4.48	26.5	39.3	4.46	AA AA
GPM-GROUP	(143)	3.21 **	26.6	38.2	4.84	
ARCWSG	(152)	4.81	27.1	39.0	4.67	G CB
IRRI	(158)	4.33	25.0	35.7	4.32	DC CB
ANALRESLAB	(159)	3.97	23.5	35.2	4.31	EE CB
IRNASE	(164)	4.42	25.3	32.7	5.03	EE CB
SYNERS	(166)	4.33	29.2	31.9 *	4.31	AA CB
BVO95MBPD	(171)	4.72	26.8	38.4	4.77	EE CB
IRS	(173)	4.53	25.8	37.7	4.25	AA CA
SMBPLNUP	(183)	4.04	24.0	40.8	3.98	AA CB
JYUIER	(185)	4.71	26.1	37.3	4.47	EE CB
IPULAB	(186)	4.66	26.9	39.7	4.80	G CB
SAINTE-FOY	(190)	4.57	26.0	37.9	4.62	DA CB
SPAL	(196)	4.70	29.5 *	34.2	4.90	DA CA
LQA-ATP	(198)	4.05	24.0	35.1	3.85	AA CA
FFEEBW	(201)	4.96	22.5 *	30.1 *	5.36 *	DG CB
LAIMBURG	(202)	37.42 **	27.7	4.5 **	4.62	EE CB
SEEDLING	(203)	4.83	26.9	39.0	4.86	DA CA
QLDNR&M	(204)	4.80	27.9	39.7	4.73	DB CB
DANRLAB	(206)	4.90	28.0	39.8	4.70	EE CB

	Summary Statistics				
NDA mean	4.489	26.20	37.67	4.495	
NDA st dev	0.400	1.65	2.55	0.411	
N	131	131	131	131	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
K (g/kg) (cont.)						
C.S.S. (209)		4.55	27.1	35.7	4.68	AA AA
DATE (218)		4.27	26.8	37.0	4.71	G CB
ALMP1011 (219)		4.06	25.2	35.8	3.82	AB CB
VILJAVUUSP (228)		4.64	26.3	38.2	4.56	AA CB
GUYLAB (231)		5.35 *	23.1	29.8 **	6.05 **	G CA
KERICHO (236)		4.39	27.3	38.6	4.29	AA CA
RIOJALAB (238)		4.63	27.3	39.3	4.69	DA CB
CHRON (239)		3.95	27.5	36.0	3.85	AA CB
LASUTEVEA (241)		4.38	26.2	38.2	4.38	
SMART (246)		4.11	27.2	47.4 **	3.84	AB AA
MONICA (248)		4.57	26.7	39.0	4.75	EB CB
REYEPS (249)		4.91	2.8 **	4.0 **	4.83	DG CB
ABMCE (250)		4.20	25.8	36.9	4.35	DA CB
IRQ-1992-S (251)		4.09	26.8	38.8	4.20	EE CB
UPPSALA (252)		4.60	26.3	37.5	4.30	DB CB
PINAGRO (256)		2.77 **	23.0	34.8	2.32 **	AB AA
DAR (258)		3.69	25.5	36.4	3.80	DD CA
RIOGLAB (264)		3.77	25.9	37.8	4.87	
ERSAFVGSCA (265)		5.03	24.5	34.9	6.30 **	DC CA
LABVAL (266)		4.83	27.8	40.1	4.73	G CB
LUARE (269)		4.26	26.8	37.8	4.77	G KB
LAF (273)		4.40	23.6	34.6	4.37	G CB
IUNG PUL (275)		4.70	26.1	37.8	4.61	DA CA
VICTORY (597)		4.98	29.5 *	38.6	5.07	HB D
FOODCHEM (847)		3.98	24.3	36.6	3.99	DB AA
AFBI (851)		5.49 *	30.1 *	40.5	5.19	G KB
SPASL (855)		4.44	25.9	36.2	4.47	EE CB
PASCAanalab (870)		4.26	24.5	35.9	4.49	AA CA
IOPRI (880)		3.36 *	21.5 *	36.5	4.35	
LSF (895)		4.80	27.5	39.6	4.83	
RF-R&D (905)		4.97	30.0 *	41.1	4.52	DB CB
ENVSHPNL20 (913)		4.80	26.6	38.0	4.54	
SABIC R&T (927)		4.30	26.7	40.2	3.86	
RHODE (960)		3.97	24.1	33.6	4.08	H CB
SAC-CAL (973)		4.23	24.3	33.7	4.17	DG CB
AZBY (976)		4.30	26.7	39.3	4.40	DC CA
LS-MRC (978)		5.41 *	26.6	43.9 *	5.75 **	AB AA
FERTILAB (979)		4.19	27.4	37.2	3.68	DC AD
FAST (1007)		4.70	26.1	37.3	4.98	DA CB
LABZIB (1013)		5.48 *	24.8	39.5	5.51 *	EE CA
ESPROT (1014)		5.05	29.2	43.3 *	5.36 *	DB D
SMART-BGR (1016)		3.99	27.3	38.6	4.29	AA CB
SUMIFRU (1026)		3.92	22.9 *	30.6 *	4.21	EE CB
MASHA (1029)		4.42	26.1	36.0	4.60	G L
CGEA (1030)		3.59 *	16.9 **	26.9 **	4.39	
ETRR (1031)		4.17	26.0	35.6	4.59	L
CNES (1033)		4.56	24.6	6.2 **	4.35	L
CERT (1034)		4.55	26.5	37.5	4.49	L
NECSA (1035)		4.14	23.4	33.0	3.96	G L
LASPEE (1036)		2.81 **	5.2 **	5.5 **	2.82 **	AA AB
KomLab (1044)		4.59	25.3	36.9	4.41	AA AC
MMLAB (1059)		4.47	26.3	38.1	4.48	AA CA
WASL-DG (1082)		20.00 **	80.0 **	130.0 **	20.00 **	
LABTECCOL (1087)		3.81	20.6 **	24.7 **	3.37 *	AA CB
NPIAS (1089)		4.73	29.2	38.3	5.00	L
ARIST (1090)		6.50 **	25.5	34.8	2.20 **	L
KFKI (1091)		5.21	28.7	47.7 **	4.72	L
REAK (1092)		2.97 **	23.5	31.1 *	-	- L
SACAV (1095)		4.30	23.7	34.2	4.10	
CAMPU (1096)		3.67 *	23.8	33.5	3.97	A L
ATCHI (1098)		1.57 **	8.7 **	12.8 **	1.37 **	

===== Summary Statistics =====

NDA mean	4.489	26.20	37.67	4.495	
NDA st dev	0.400	1.65	2.55	0.411	
N	131	131	131	131	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
K (g/kg) (cont.)						
TEFA	(1099)	4.51	26.5	38.4	4.69	L
SYRAT	(1100)	4.89	26.0	39.6	5.03	
INDIES	(1106)	4.73	27.8	40.5	4.87	L
DESAR	(1108)	4.00	24.0	34.0	4.10	A L
NOUSSE	(1110)	4.06	27.1	39.4	4.45	L
LNIP	(1111)	-	23.9	37.5	45.80 **	G L
===== Statistical Results =====						
NDA mean		4.489	26.20	37.67	4.495	
NDA st dev		0.400	1.65	2.55	0.411	
N		131	131	131	131	
Median		4.500	26.20	37.50	4.480	
MAD		0.270	1.11	1.80	0.280	
=====						
Li (µg/kg)						
BRAUNSCHW	(3)	3.90	477	10.8	312	EE D
LABTIUM	(47)	500.00 <	1380	950.0	1280	G D
ECN	(86)	300.00 <	749	300.0 <	536	DG CB
CCWELE	(136)	3.10	459	16.9	336	DC CB
RIOGLAB	(264)	1.96	605	15.1	371	EE D
FOODCHEM	(847)	-	714	20.2	309	DB BF
===== Statistical Results (no NDA) =====						
N		3	6	5	6	
Median		3.100	659.5	16.90	353.5	
MAD		0.800	136.0	3.29	42.9	
=====						
Mg (g/kg)						
ISKCLASKCE	(2)	1.09	1.60	2.64	1.16	G CB
BRAUNSCHW	(3)	1.03	1.53	2.51	1.13	EE CB
AGRILAB	(4)	1.23	1.61	2.61	1.16	
LYMAN-AGRO	(5)	1.22	1.95 *	3.05 *	1.34	AB AA
OOSTERBEEK	(7)	1.20	1.79	2.89	1.32	G CB
CIRADFLHOR	(12)	1.00	1.60	2.60	1.10	AA AB
SIME DARBY	(19)	1.04	1.65	2.68	1.20	AB AA
MARDI	(26)	0.98	1.68	2.70	1.23	DB CB
KUCHING	(27)	0.63 **	1.47	2.50	1.07	AA CB
LRSCONTROL	(28)	1.01	1.61	2.72	1.11	AA CB
FELDA	(30)	1.01	1.64	2.67	1.15	AB AA
LKS	(31)	1.12	1.71	2.67	1.24	DG CB
WAGENINGEN	(32)	1.14	1.64	2.59	1.23	G CB
OVA JORK	(35)	1.10	1.70	2.60	1.20	AA AD
MHLUME	(36)	1.10	1.80	2.70	1.60 **	DA AC
FORTEST	(44)	0.96	1.55	2.48	1.07	EE CB
LABTIUM	(47)	1.06	1.89	2.83	1.27	G CB
RELAB	(49)	1.08	1.67	2.67	1.18	EE CB
SIRI	(53)	1.07	1.68	2.77	1.06	DA AA
AAAGROUP	(56)	1.06	1.66	2.56	1.16	AA AA
AMIS-AGRO	(58)	1.11	1.64	2.70	1.22	AC CB
0055HIK	(59)	1.18	1.73	2.89	1.25	EE D
BLRSLAL	(62)	0.97	1.56	2.60	1.08	AA AA
AARESEARCH	(63)	1.07	1.66	2.65	1.16	AB AA
MRMEAK	(65)	1.10	1.70	2.80	1.20	EE CB
CORBANA	(67)	1.06	1.61	2.65	1.14	EE CB
HAMELN	(68)	1.14	1.67	2.78	1.24	DG CB
ELML	(75)	1.11	1.69	2.75	1.21	G CB
DFAL	(76)	1.25	1.64	2.65	1.16	AA CB
HILL	(78)	1.09	1.50	2.59	1.17	EE CB
METLAPARKA	(81)	1.05	1.65	2.64	1.19	G CB
===== Summary Statistics =====						
NDA mean		1.074	1.644	2.644	1.181	
NDA st dev		0.094	0.125	0.184	0.087	
N		123	123	123	123	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Mg (g/kg) (cont.)						
HLVA (84)		1.14	1.64	2.80	1.20	G CB
ELAEIS.P (85)		1.03	1.47	2.45	1.10	DA AA
ECN (86)		1.07	1.66	2.65	1.22	DG CB
CIAT (90)		1.00	1.52	2.55	1.14	DC AF
SPSSBKCH (91)		0.91	1.47	2.39	1.03	AB AA
BELFAST (97)		1.18	1.71	2.78	1.25	DG CB
974BRET (107)		1.13	1.81	2.82	1.20	AA AB
POVLT (115)		1.04	1.56	2.60	1.10	EE CB
LAPANDAY (118)		0.97	1.49	2.56	1.06	DG AA
MSIRI (121)		1.04	1.60	2.69	1.14	DC AA
NEMALAB (125)		0.55 **	1.00 **	2.23 *	0.85 **	FB AA
GGM (129)		1.52 **	1.41	2.56	1.19	EE D
SASEXFAS (130)		1.00	1.50	2.50	1.10	
LEIPZIGMOE (132)		1.34 *	2.09 **	3.36 **	1.53 **	
XGCALAFIGA (133)		1.13	1.72	2.80	1.27	EE CB
LUNUWILA (135)		0.99	1.60	2.52	1.18	AA AA
CCWELE (136)		0.95	1.45	2.35	1.05	
GPM-GROUP (143)		1.07	1.61	2.82	1.16	
ARCWSG (152)		1.05	1.53	2.56	1.11	G CB
IRRI (158)		1.00	1.53	2.49	1.07	DC CB
ANALRESLAB (159)		1.00	1.51	2.49	1.13	EE CB
IRNASE (164)		1.08	1.63	2.67	1.19	EE CB
SYNERS (166)		0.82 *	1.36 *	2.41	0.90 **	AA CB
BVO95MBPD (171)		1.17	1.68	2.78	1.24	EE CB
SMBPLNUP (183)		0.97	1.51	2.48	1.07	AA CB
JYUIER (185)		1.21	1.83	2.95	1.36 *	EE CB
IPULAB (186)		1.09	1.66	2.77	1.25	G CB
SAINTE-FOY (190)		1.05	1.68	2.69	1.25	DA CB
SPAL (196)		0.80 *	1.30 *	1.70 **	0.90 **	DA AB
LQA-ATP (198)		0.91	1.46	2.44	1.07	AA AA
FFEEBW (201)		1.21	1.66	2.76	1.27	DG CB
LAIMBURG (202)		2.81 **	1.83	1.25 **	1.34	EE CB
SEEDLING (203)		1.08	1.69	2.83	1.24	DA AA
QLDNR&M (204)		1.01	1.59	2.62	1.12	DB CB
DANRLAB (206)		1.13	1.64	2.68	1.17	EE CB
DATE (218)		1.05	1.71	2.82	1.23	G CB
ALMP1011 (219)		1.02	1.56	2.46	1.09	AB CB
VILJAVUUSP (228)		1.07	1.63	2.58	1.16	AA CB
GUYLAB (231)		2.60 **	1.37 *	2.02 **	1.82 **	G AA
KERICHO (236)		1.02	1.61	2.54	1.12	AA AA
RIOJALAB (238)		1.12	1.66	2.66	1.14	DA CB
CHRON (239)		1.03	1.49	2.29	1.06	AA CB
LASUTEVEA (241)		0.99	1.57	2.49	1.10	
SMART (246)		1.19	1.81	2.78	1.29	AB AA
MONICA (248)		1.03	1.69	2.83	1.14	EB CB
REYEPS (249)		1.14	1.79	2.82	1.24	DG CB
ABMCE (250)		1.00	1.50	2.60	1.10	DA CB
UPPSALA (252)		1.10	1.70	2.60	1.20	DB CB
PINAGRO (256)		1.04	1.69	2.70	1.18	AB AA
DAR (258)		0.80 *	1.20 **	2.00 **	0.90 **	DD AA
RIOGLAB (264)		1.04	1.57	2.57	1.16	
ERSAFVGSCA (265)		1.11	1.67	2.64	1.24	DC AA
LABVAL (266)		1.09	1.66	2.65	1.18	G CB
LUARE (269)		1.12	1.68	2.71	1.22	DB CB
LAF (273)		1.17	1.70	2.70	1.27	G CB
MELIPLANT (274)		1.03	1.66	2.67	1.25	EE CB
IUNG PUL (275)		1.11	1.77	2.96	1.25	DA AA
VICTORY (597)		1.26	2.02 **	3.01	1.42 *	HB D
FOODCHEM (847)		1.13	1.66	2.72	1.18	DB AA
AFBI (851)		1.75 **	1.75	2.54	1.33	G KB
SPASL (855)		1.04	1.61	2.56	1.18	EE CB

	Summary Statistics			
NDA mean	1.074	1.644	2.644	1.181
NDA st dev	0.094	0.125	0.184	0.087
N	123	123	123	123

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Mg (g/kg) (cont.)						
PASCAAnalab (870)		0.89	1.65	2.63	1.15	AA AA
IOPRI (880)		1.45 **	2.58 **	3.51 **	1.69 **	
LSF (895)		1.08	1.70	2.70	1.20	
RF-R&D (905)		1.08	1.77	2.92	1.22	DB CB
ENVSHPNL20 (913)		1.20	1.71	2.64	1.19	
SABIC R&T (927)		1.04	1.48	2.53	1.06	
RHODE (960)		0.97	1.52	2.32	1.10	H CB
SAC-CAL (973)		1.09	1.60	2.50	1.18	DG CB
AZBY (976)		1.10	1.70	2.60	1.20	DC AA
LS-MRC (978)		1.31 *	2.20 **	2.69	1.28	AB AA
FERTILAB (979)		23.49 **	1.77	2.69	1.29	DC AD
FAST (1007)		1.12	1.63	2.78	1.21	DA CB
LABZIB (1013)		1.21	1.87	3.03 *	1.32	EE AA
ESPROT (1014)		1.17	1.89	3.17 *	1.35	DB D
SMART-BGR (1016)		1.26	1.72	2.80	1.28	AA CB
SUMIFRU (1026)		1.02	1.49	2.52	1.04	EE CB
CGEA (1030)		0.96	1.49	2.43	1.15	
ETRR (1031)		0.97	1.85	2.63	1.14	L
CNES (1033)		1.43 **	2.69 **	2.14 *	1.78 **	L
CERT (1034)		1.07	1.98 *	2.42	1.58 **	L
LASPEE (1036)		0.23 **	0.79 **	0.87 **	0.68 **	AA AB
KomLab (1044)		1.15	1.63	2.56	1.23	AA AC
MMLAB (1059)		1.16	1.69	2.73	1.22	AA AA
WASL-DG (1082)		1.69 **	2.14 **	2.42	1.77 **	
LABTECCOL (1087)		1.10	1.59	2.37	0.71 **	AA CB
KFKI (1091)		1.31 *	2.18 **	3.41 **	1.59 **	L
SYRAT (1100)		1.06	1.80	7.14 **	2.11 **	
INDIES (1106)		1.02	1.91 *	2.85	1.53 **	L
DESAR (1108)		1.20	1.80	2.50	1.20	A L
NOUSSE (1110)		0.76 **	2.45 **	3.13 *	1.66 **	L
LNIP (1111)		0.82 *	0.89 **	1.60 **	0.65 **	G L

	Statistical Results			
NDA mean	1.074	1.644	2.644	1.181
NDA st dev	0.094	0.125	0.184	0.087
N	123	123	123	123
Median	1.075	1.656	2.650	1.190
MAD	0.065	0.086	0.130	0.060

Mn (mg/kg)						
BRAUNSWH (3)		0.10 < **	38.0	1344	609	EE CB
AGRILAB (4)		5.90 *	40.3	1434	611	
OOSTERBEEK (7)		4.30	43.1	1504	677	G CB
SIME DARBY (19)		3.95	42.8	1560	612	AA AA
MARDI (26)		3.06	129.0 **	1485	681	DB CB
KUCHING (27)		-	35.0	1422	613	AA CB
LRSCONTROL (28)		3.59	42.9	1395	603	AA CB
FELDA (30)		4.45	41.2	1430	605	AA AA
LKS (31)		3.77	37.6	1293	623	DG CB
WAGENINGEN (32)		3.90	40.7	1499	669	G CB
OVA JORK (35)		1.30 **	30.2 *	1508	539	AA AD
FORTEST (44)		3.00	36.8	1486	605	EE CB
LABTIUM (47)		3.72	44.5	1470	654	G CB
RELAB (49)		10.00 <	41.9	1466	651	EE CB
SIRI (53)		5.00	47.0	1498	455 **	DA AA
AAAGROUP (56)		3.55	42.8	1445	653	AA AA
AMIS-AGRO (58)		4.40	40.6	1594	670	AC CB
0055HIK (59)		4.02	45.4	1473	6	EE D
BLRSLAL (62)		4.44	33.6	751 **	569	AA AA
AARESEARCH (63)		3.75	41.2	1477	619	AB AA

	Summary Statistics			
NDA mean	3.731	40.20	1443	629.1
NDA st dev	0.728	3.46	107	47.4
N	111	121	120	122

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Mn (mg/kg) (cont.)						
MRMEAK (65)		3.95	38.9	1354	628	EE CB
CORBANA (67)		3.81	39.6	1559	651	EE CB
HAMELN (68)		4.28	43.4	1534	695	DG CB
ELML (75)		3.70	10.9 **	1565	650	G CB
DFAL (76)		5.98 **	40.1	1440	622	AA CB
HILL (78)		7.10 **	39.3	2 **	673	EE CB
METLAPARKA (81)		3.41	35.1	1360	608	G CB
HLVA (84)		3.23	38.3	1496	643	G CB
ELAEIS.P (85)		4.67	39.9	1398	594	DA AA
ECN (86)		3.72	42.8	1409	671	DG CB
CIAT (90)		2.48	39.1	1500	672	DC/AB
SPSSBKCH (91)		2.93	35.6	1330	552	AB AA
974BRET (107)		3.71	41.0	1500	639	AA AA
POVLT (115)		3.40	41.4	1375	607	EE CB
LAPANDAY (118)		4.00	45.0	1710 *	570	DG AA
NEMALAB (125)		1.53 **	49.6 *	1522	734 *	FB AA
GGM (129)		4.98	38.9	1493	683	EE D
SASEXFAS (130)		4.89	40.0	136 **	620	
LEIPZIGMOE (132)		4.40	49.1 *	-	742 *	
XGCALAFIGA (133)		3.61	41.7	1463	661	EE CB
LUNUWILA (135)		3.09	39.1	1418	619	AA AA
CCWELE (136)		3.36	38.0	1366	606	EE/D
GPM-GROUP (143)		3.00	50.3 *	1388	619	
ARCWSG (152)		3.67	39.9	1423	621	G CB
IRRI (158)		3.54	37.6	1365	586	DC CB
ANALRESLAB (159)		3.43	39.1	1296	567	EE CB
IRNASE (164)		3.70	40.0	1370	605	EE CB
SYNERS (166)		3.57	38.3	1639	684	AA CB
BVO95MBPD (171)		3.72	36.6	1385	598	EE CB
SMBPLNUP (183)		0.68 **	32.8 *	1340	517 *	AA CB
JYUIER (185)		3.80	37.9	1320	606	EE D
IPULAB (186)		4.50 <	40.7	1476	666	G CB
SAINTE-FOY (190)		20.00 <	43.8	1450	648	DA CB
SPAL (196)		85.10 **	349.0 **	1724 *	892 **	DA AB
LQA-ATP (198)		3.13	34.9	972 **	44 **	AA AA
FFEEBW (201)		17.84 **	39.8	1559	726 *	DG CB
LAIMBURG (202)		1454.98 **	49.0 *	5 **	717	EE/CB
SEEDLING (203)		7.52 **	44.6	1557	684	DA AA
QLDNR&M (204)		3.53	39.1	1410	599	DB CB
DANRLAB (206)		3.80	42.3	1607	656	EE CB
DATE (218)		3.91	44.4	1708 *	681	G CB
ALMP1011 (219)		3.00 <	36.9	804 **	329 **	AB CB
VILJAVUUSP (228)		3.82	41.1	1394	625	AA CB
GUYLAB (231)		31.33 **	13.3 **	79 **	43 **	G AA
KERICO (236)		4.60	41.5	1532	612	AA AA
RIOJALAB (238)		4.34	41.0	1396	603	DA CB
CHRON (239)		3.75	38.8	1465	604	AA CB
LASUTEVEA (241)		3.13	40.9	1348	608	
SMART (246)		4.87	44.5	1434	637	AB AA
MONICA (248)		3.42	39.3	1533	656	EB CB
REYEPS (249)		-	42.2	1450	633	DG CB
ABMCE (250)		3.84	41.8	1460	635	EE D
IRQ-1992-S (251)		3.35	34.6	972 **	601	EE CB
UPPSALA (252)		4.20	40.2	1446	637	DB CB
PINAGRO (256)		5.42 *	42.8	1423	548	AB AA
DAR (258)		10.93 **	53.9 **	1603	705	DD AA
RIOGLAB (264)		3.38	37.3	1336	580	EE D
ERSAFVGSCA (265)		1.79 *	24.1 **	1086 **	413 **	DC AA
LABVAL (266)		3.59	37.1	1440	650	G CB
LUARE (269)		3.99	41.5	1480	668	DB CB
TECHHK (270)		3.29	39.2	1440	642	

===== Summary Statistics =====

NDA mean	3.731	40.20	1443	629.1	
NDA st dev	0.728	3.46	107	47.4	
N	111	121	120	122	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Mn (mg/kg) (cont.)					
LAF (273)	4.33	42.0	1536	683	G CB
IUNGPUL (275)	4.00	39.1	1547	662	DB AC
VICTORY (597)	4.20	50.9 **	1836 **	823 **	HB D
FOODCHEM (847)	3.17	36.0	1502	625	DB AA
SPASL (855)	4.04	40.7	1436	638	EE CB
PASCAanalab (870)	4.63	40.1	1376	589	AA AA
IOPRI (880)	2.57	41.1	1330	610	
LSF (895)	5.21 *	44.8	1338	656	
RF-R&D (905)	3.87	40.0	1443	635	DB CB
ENVSHPNL20 (913)	4.32	43.6	1509	679	
SABIC R&T (927)	2.00 < *	37.0	1274	487 *	
RHODE (960)	6.42 **	37.0	1249	550	H CB
SAC-CAL (973)	3.30	33.0 *	1074 **	523 *	DG CB
AZBY (976)	6.00 **	43.5	1487	653	DC AA
LS-MRC (978)	6.19 **	53.2 **	1040 **	475 **	AA AA
FERTILAB (979)	2.70	41.2	1400	627	DC AD
FAST (1007)	3.93	38.6	1350	624	DA CB
ESPROT (1014)	1.99 *	40.6	1461	6 **	DB D
SMART-BGR (1016)	2.02 *	42.7	1478	701	AA CB
SUMIFRU (1026)	8.12 **	36.1	1436	632	EE CB
CGEA (1030)	2.53	27.0 **	1337	603	
ETRR (1031)	2.94	37.8	1230	532 *	L
CNES (1033)	3.69	48.5 *	380 **	635	L
CERT (1034)	3.87	43.1	1489	618	L
NECSA (1035)	2.64	39.7	1444	617	G L
LASPEE (1036)	0.83 **	8.7 **	149 **	99 **	AA AB
INSTN (1037)	8.35 **	41.9	1265	623	DG Z
KomLab (1044)	2.50	40.0	865 **	586	AA AC
MMLAB (1059)	4.50	40.5	1499	657	AA AA
WASL-DG (1082)	3.50	28.5 **	696 **	391 **	
LABTECCOL (1087)	517.29 **	38.8	1262	3 **	AA CB
NPIAS (1089)	3.80	48.8 *	1483	678	L
ARIST (1090)	-	59.0 **	1159 *	562	L
KFKI (1091)	4.15	49.3 *	1760 *	773 **	L
REAK (1092)	-	38.6	1670 *	635	- L
SYRAT (1100)	4.00	38.1	1010 **	488 *	
INDIES (1106)	3.59	42.0	1529	620	L
DESAR (1108)	3.40	40.4	1343	596	A L
YAZA (1109)	-	-	-	171 **	G L
NOUSSE (1110)	3.48	38.1	1413	601	L
LNIP (1111)	3.69	36.2	1357	604	G L

	Statistical Results			
NDA mean	3.731	40.20	1443	629.1
NDA st dev	0.728	3.46	107	47.4
N	111	121	120	122
Median	3.800	40.20	1435	620.4
MAD	0.510	2.40	75	33.1

Mo (µg/kg)					
BRAUNSCHW (3)	215	361	349	241	EE D
OOSTERBEEK (7)	229	386	286	216	G D
WAGENINGEN (32)	256	411	289	292	G D
LABTIUM (47)	260	410	370 *	240	G D
RELAB (49)	100 < **	106 **	110 **	100 < **	
0055HIK (59)	1000 <	1000 <	1000 <	1000 <	EE D
MRMEAK (65)	386 **	486 *	205	226	EE CB
HAMELN (68)	260	383	269	280	DG D
HILL (78)	236	374	280	251	EE D
HLVA (84)	207	358	268	216	G D

	Summary Statistics			
NDA mean	231.1	375.9	267.6	236.0
NDA st dev	31.7	52.6	45.8	29.0
N	29	32	31	30

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Mo (µg/kg) (cont.)					
GGM (129)	300 <	284	254	161 *	EE D
LEIPZIGMOE (132)	231	395	290	242	
CCWELE (136)	224	371	288	258	DC D
IRRI (158)	542 **	1406 **	219	-	DC CB
ANALRESLAB (159)	234	399	299	231	EE CB
SYNERS (166)	217	186 **	184	156 *	AA CB
JYUIER (185)	180	298	249	183	EE D
IPULAB (186)	2000 <	2000 <	2000 <	2000 <	G CB
FFEEBW (201)	200	326	261	233	DG CB
QLDNR&M (204)	300 *	410	290	270	DB D
ALMP1011 (219)	1 < **	1 < **	1 < **	1 < **	AB CB
CHRON (239)	110 **	330	140 *	210	AA CB
MONICA (248)	1200 <	1200 <	1200 <	1200 <	EB CB
REYEPS (249)	0 **	0 **	0 **	0 **	DB BG
ABMCE (250)	250	360	260	220	EE D
UPPSALA (252)	242	365	282	237	DB CB
RIOGLAB (264)	228	377	307	245	EE D
TECHHK (270)	209	372	268	225	EE D
LAF (273)	-	605 **	510 **	525 **	G CB
IUNGPUL (275)	225	367	250	225	AA CB
VICTORY (597)	259	489 *	328	290	HB D
FOODCHEM (847)	296 *	460	221	225	DB BB
SPASL (855)	488 **	545 **	451 **	630 **	EE CB
SAC-CAL (973)	500 <	500 <	500 <	500 <	DG CB
FAST (1007)	216	359	185	219	DA CB
NPIAS (1089)	490 <	2530 <	2640 <	1960 <	L
TEFA (1099)	208	395	229	284	L
SYRAT (1100)	241	255 *	452 <	304 *	

	Statistical Results			
NDA mean	231.1	375.9	267.6	236.0
NDA st dev	31.7	52.6	45.8	29.0
N	29	32	31	30
Median	231.0	373.0	268.0	235.0
MAD	23.0	37.0	31.0	19.2

N - Kjeldahl (as N) (g/kg)					
AGRILAB (4)	13.0	26.4	30.9	10.7	
LYMAN-AGRO (5)	13.3	26.7	30.4	10.5	DA O
OOSTERBEEK (7)	14.1	27.3	31.6	11.0	DA O
SIME DARBY (19)	13.7	25.1	31.2	11.0	DA E
MARDI (26)	12.9	20.9 **	30.8	11.0	DA Z
FELDA (30)	13.5	25.8	31.4	10.5	DA E
OVA JORK (35)	14.1	27.7	32.1	11.4	G O
MHLUME (36)	14.0	25.8	30.4	11.1	DA O
REDUIT (45)	13.8	25.7	29.0	10.6	DA E
SIRI (53)	13.3	23.8 *	28.0 *	9.8	DA O
AAAGROUP (56)	13.4	26.9	31.3	10.7	AA AA
0055HIK (59)	14.0	28.0	31.0	19.0 **	DA O
BLRSLAL (62)	15.0	28.2	31.4	12.6 *	DA O
AARESEARCH (63)	13.6	26.3	31.1	10.8	DA O
ELML (75)	14.8	28.2	32.7	11.3	G O
DFAL (76)	13.2	26.3	31.0	10.9	DA O
ELAEIS.P (85)	12.5	24.1 *	29.9	10.8	
CIAT (90)	14.3	25.3	32.4	11.6	DA E
SPSSBKCH (91)	13.6	26.5	31.6	12.1	DA O
974BRET (107)	13.7	26.3	31.1	10.9	DA O
POVLT (115)	13.0	25.1	31.1	10.0	DA O
ILRI (116)	13.8	28.3	33.1	11.2	DA O
LAPANDAY (118)	14.4	25.6	30.6	11.3	DA O

	Summary Statistics			
NDA mean	13.59	26.54	31.17	11.02
NDA st dev	0.80	1.24	1.22	0.63
N	74	74	74	74

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
N - Kjeldahl (as N) (g/kg)	(cont.)					
NEMALAB	(125)	14.1	27.6	31.7	11.2	FB E
GGM	(129)	12.8	25.3	29.9	10.4	DA E
SASEXFAS	(130)	15.2 *	33.0 **	34.1 *	14.9 **	
LUNUWILA	(135)	16.5 **	32.7 **	34.7 *	12.5 *	DA E
GPM-GROUP	(143)	13.0	26.9	31.3	10.7	
KGZMB-P	(150)	13.1	26.5	31.2	10.6	DA O
IRRI	(158)	14.3	26.6	31.4	11.4	DA E
IRNASE	(164)	12.6	26.6	31.9	9.5 *	DA E
BVO95MBPD	(171)	13.6	27.1	31.8	10.9	DA O
SMBPLNUP	(183)	13.1	24.7	28.5 *	10.7	AA CB
IPULAB	(186)	13.6	27.5	31.5	10.6	DA E
SAINTE-FOY	(190)	13.1	25.9	30.4	10.7	DA E
SPAL	(196)	17.2 **	36.2 **	35.2 **	13.9 **	
LQA-ATP	(198)	16.0 **	26.7	29.5	13.8 **	DA E
SEEDLING	(203)	15.0	29.2 *	34.2 *	11.9	DA E
QLDNR&M	(204)	13.3	27.9	32.6	10.6	DA
C.S.S.	(209)	14.6	26.4	30.7	11.5	DA E
DATE	(218)	13.2	26.3	30.6	10.8	G Z
ALMP1011	(219)	13.2	27.8	31.2	11.5	DA E
VILJAVUUSP	(228)	13.9	27.1	31.7	11.0	DA O
GUYLAB	(231)	13.9	26.9	31.9	12.7 *	G E
KERICHO	(236)	14.3	27.5	32.3	11.4	DA O
CHRON	(239)	12.7	25.7	30.1	10.2	H Z
SMART	(246)	15.1	28.3	32.7	12.0	DA E
ABMCE	(250)	13.2	26.8	30.9	10.9	G Z
PINAGRO	(256)	12.7	24.6	29.6	10.4	DA O
DAR	(258)	13.3	26.6	30.1	10.7	DD O
ERSAFVGSCA	(265)	14.2	27.7	31.7	11.7	DA O
LAF	(273)	13.5	26.8	30.8	10.8	DA O
MELIPLANT	(274)	14.5	26.3	31.5	11.7	DA O
IUNGUL	(275)	13.5	26.0	30.9	10.2	DA Z
FOODCHEM	(847)	13.5	26.4	31.9	10.9	DB O
PASCSAnalab	(870)	14.2	27.7	31.8	11.1	G O
IOPRI	(880)	13.5	25.9	30.4	13.5 **	
RF-R&D	(905)	14.7	30.0 *	34.2 *	11.5	DA E
ENVSHPNL20	(913)	14.0	28.6	33.4	11.3	
SABIC R&T	(927)	13.1	26.0	30.5	10.5	
RHODE	(960)	14.7	26.8	30.5	12.1	G O
SAC-CAL	(973)	16.2 **	25.4	36.7 **	11.8	DA O
AZBY	(976)	12.9	25.7	30.1	11.0	DA O
LS-MRC	(978)	69.1 **	26.1	32.8	11.5	DA O
FERTILAB	(979)	12.3	24.3	28.5 *	9.9	DA O
FAST	(1007)	13.8	24.8	28.5 *	11.4	DA CB
LABZIB	(1013)	15.7 *	28.1	33.5	12.0	G O
SMART-BGR	(1016)	12.5	25.9	27.2 **	8.9 **	DA Z
SUMIFRU	(1026)	14.1	28.5	32.8	11.5	DA O
LASPEE	(1036)	12.6	26.2	28.4 *	9.6 *	DA E
KomLab	(1044)	12.7	27.6	29.9	11.3	DA O
MMLAB	(1059)	13.7	26.3	31.5	11.3	DA O
WASL-DG	(1082)	11.6 *	19.5 **	28.3 *	8.1 **	
LABTECCOL	(1087)	5.5 **	25.2	36.7 **	4.6 **	DA E

	Statistical Results			
NDA mean	13.59	26.54	31.17	11.02
NDA st dev	0.80	1.24	1.22	0.63
N	74	74	74	74
Median	13.60	26.50	31.21	11.01
MAD	0.54	0.85	0.81	0.43

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
N - NH4 (as N) (mg/kg)						
HLVA	(84)	79.3	236	114.0	77.8	
DANRLAB	(206)	23.0	51	43.0	26.0	FB Z
DATE	(218)	41.1	191	80.6	75.3	G Z
UPPSALA	(252)	89.5	249	108.5	72.4	FA E
===== Statistical Results (no NDA) =====						
N		4	4	4	4	
Median		60.21	213.5	94.56	73.85	
MAD		24.19	28.9	16.69	2.70	
=====						
N - NO3 (as N) (mg/kg)						
ISKCLASKCE	(2)	2.5 <	234	61.5	-	
OOSTERBEEK	(7)	49.2 <	201	50.0	48.7	FA E
ELML	(75)	17.4	85 **	29.3	15.9	FA JB
HILL	(78)	100.0 <	218	100.0 <	100.0 <	FB E
HLVA	(84)	25.0 <	183	47.3	25.0 <	
POVLT	(115)	65.0 <	208	74.5	65.0 <	G E
ANALRESLAB	(159)	14.9	193	61.0	23.0	FA E
DANRLAB	(206)	10.0 <	202	44.0	10.0 <	FB Z
DATE	(218)	11.0	182	64.9	24.5	FA Z
UPPSALA	(252)	3.3	228	60.5	5.7	FA E
===== Statistical Results =====						
NDA mean		-	204.7	56.10	-	
NDA st dev		-	23.9	14.76	-	
N		4	10	9	5	
Median		12.93	201.4	60.50	23.00	
MAD		3.23	17.5	10.50	7.10	
=====						
Na (mg/kg)						
BRAUNTSCHW	(3)	46.5 *	225	79.5 *	366	EE CB
AGRILAB	(4)	16.0	192	33.3	312	
OOSTERBEEK	(7)	108.9 <	193	106.1 <	345	G CB
MARDI	(26)	91.8 **	279 **	207.0 **	445 *	DB CB
LRSCONTROL	(28)	2.5	183	25.9	306	EE CB
LKS	(31)	-	253 *	-	383	DG CB
WAGENINGEN	(32)	1.0	188	34.0	440 *	G CB
OVA JORK	(35)	25.0	257 *	63.0	350	AA CA
LABTIUM	(47)	20.0 <	210	31.6	360	G CB
RELAB	(49)	57.5 <	179	57.5 <	320	EE CB
AMIS-AGRO	(58)	65.0 **	203	94.5 **	403	AC CB
0055HIK	(59)	500.0 <	500 <	500.0 <	500 <	EE D
MRMEAK	(65)	0.2 <	168	18.2	304	EE CB
HAMELN	(68)	2.8	188	28.0	342	DG CB
ELML	(75)	52.1 **	183	33.8	332	G CB
DFAL	(76)	16.0	195	31.2	320	AA AA
HILL	(78)	100.0 <	164	100.0 <	318	EE CB
HLVA	(84)	25.0 <	181	25.0 <	316	G CB
ECN	(86)	0.8	172	28.2	469 *	DG CB
CIAT	(90)	4.1	189	30.6	323	DC AB
POVLT	(115)	25.0 <	171	25.6	299	EE CB
LAPANDAY	(118)	13.0	201	40.0	310	DB AA
GGM	(129)	100.0 <	154	100.0 <	323	DA D
LUNUWILA	(135)	26.3	243	77.6 *	340	AA AA
CCWELE	(136)	1.0	201	26.9	370	DC CB
GPM-GROUP	(143)	48.0 *	244	97.0 **	332	
ARCWSG	(152)	2.4	173	25.8	311	G CB
IRRI	(158)	6.5	236	46.5	322	DC CB
ANALRESLAB	(159)	10.0 <	161	16.0	308	EE CB
===== Summary Statistics =====						
NDA mean		10.36	189.8	33.79	338.4	
NDA st dev		13.81	28.9	17.07	44.2	
N		59	85	71	87	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Na (mg/kg) (cont.)					
IRNASE (164)	23.4	236	37.9	317	EE CB
SYNERS (166)	5.0	135	69.0 *	326	AA CB
IRS (173)	5.0 <	199	30.3	303	AA CA
SMBPLNUP (183)	153.0 **	333 **	205.0 **	348	AA CB
JYUIER (185)	30.0 <	177	42.5	320	EE CB
IPULAB (186)	75.0 <	189	75.0 <	349	G CB
SAINTE-FOY (190)	200.0 <	210	200.0 <	358	DA CB
SPAL (196)	100.0 **	800 **	900.0 **	400	DA CA
FFEEBW (201)	3.8	166	26.2	293	DG CB
LAIMBURG (202)	-	152	-	295	EE CB
QLDNR&M (204)	25.0	150	25.0	280	DB CB
DANRLAB (206)	3.3	190	25.6	328	EE CB
DATE (218)	18.0	384 **	51.6	437 *	G CB
ALMP1011 (219)	1.0 <	1 < **	1.0 <	1 < **	AB CB
VILJAVUUSP (228)	31.8	266 *	90.7 **	362	AA CB
KERICO (236)	4.8	214	39.1	325	AA CA
RIOJALAB (238)	8.5	202	40.4	327	DA CB
CHRON (239)	26.0	494 **	191.0 **	423	AA CB
SMART (246)	25.7	215	55.9	331	AB AA
MONICA (248)	7.2 <	187	24.2	418	EB CB
REYEPS (249)	-	202	78.1 *	364	DG CB
ABMCE (250)	200.0 <	200 <	200.0 <	300	DA CB
UPPSALA (252)	1.8	164	16.4	291	DB CB
DAR (258)	-	200	100.0 **	200 **	DD CA
RIOGLAB (264)	25.6	181	30.8	298	
ERSAFVGSCA (265)	52.5 **	242	69.1 *	361	DC CA
LABVAL (266)	6.5 <	188	23.4	324	G CB
LAF (273)	-	-	-	436 *	EE CB
IUNGPUL (275)	26.0 <	177	26.0 <	303	DA CA
VICTORY (597)	6.3	224	49.3	487 **	HB D
FOODCHEM (847)	4.0	138	34.3	269	DB AA
SPASL (855)	4.5	174	36.7	314	EE CB
LSF (895)	10.7	185	24.0	333	
RF-R&D (905)	7.0	176	27.0	293	DB CB
ENVSHPNL20 (913)	41.0 *	218	53.3	344	
RHODE (960)	17.0	180	46.0	334	H CB
SAC-CAL (973)	100.0 <	214	100.0 <	321	DG CB
AZBY (976)	17.0	195	39.0	302	DC CA
ESPROT (1014)	12.1	215	41.5	359	DB D
SMART-BGR (1016)	7.1	223	67.6	315	AA CB
ETRR (1031)	-	180	-	358	L
CNES (1033)	3.7	167	-	402	L
NECSA (1035)	4.2	166	26.8	351	G L
LASPEE (1036)	1065.0 **	1337 **	1142.0 **	1300 **	AB AB
KomLab (1044)	16.0	258 *	55.1	364	AA AC
LABTECCOL (1087)	253.0 **	210	120.0 **	27 **	AA CB
NPIAS (1089)	1.5	198	25.9	430 *	L
ARIST (1090)	-	172	83.1 *	327	L
KFKI (1091)	4.2	196	18.7	369	L
REAK (1092)	-	198	-	400	- L
SACAV (1095)	1.0	178	23.0	370	
CAMPU (1096)	29.8	184	68.3 *	488 **	A L
ATCHI (1098)	37.3	113 *	45.4	171 **	
TEFA (1099)	1.3	195	24.8	422	L
SYRAT (1100)	2.7	172	23.4	393	
TECNUC (1103)	-	153	21.6	350	L
INDIES (1106)	2.4	196	27.3	406	L
DESAR (1108)	0.6	183	22.0	389	A L
NOUSSE (1110)	19.5	240	47.9	491 **	L
LNIP (1111)	-	172	26.7	404	G L

===== Summary Statistics =====

NDA mean	10.36	189.8	33.79	338.4	
NDA st dev	13.81	28.9	17.07	44.2	
N	59	85	71	87	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Na (mg/kg) (cont.)					
	===== Statistical Results =====				
NDA mean	10.36	189.8	33.79	338.4	
NDA st dev	13.81	28.9	17.07	44.2	
N	59	85	71	87	
Median	12.09	192.0	36.70	334.2	
MAD	9.73	20.0	11.90	29.8	
=====					
Ni (µg/kg)					
BRAUNSCHW (3)	117	1014	812	1746	EE D
WAGENINGEN (32)	83	1220	788	1951	G D
LABTIUM (47)	320 **	1470	1270 *	2160	G D
0055HIK (59)	1000 <	1280	1000 <	1700	EE D
HAMELN (68)	-	948	576	1772	DG D
ELML (75)	20 <	729	467	1606	G CB
HLVA (84)	156	984	842	1699	G D
ECN (86)	500 <	1210	853	2003	DG CB
POVLT (115)	500 <	757	624	1539	EE CB
LEIPZIGMOE (132)	79	1219	773	-	
CCWELE (136)	61	1207	791	2204 *	DC D
ARCWSG (152)	145	1066	829	1897	G CB
ANALRESLAB (159)	108	1042	813	1832	
IRNASE (164)	159	1267	899	1914	EE CB
JYUIER (185)	107	1230	866	2050	EE D
FFEEBW (201)	50	713	539	1187 *	DG CB
CHRON (239)	400 **	1300	950	1900	
MONICA (248)	900 <	1226	900 <	1474	EB CB
ABMCE (250)	400 <	1100	790	1810	EE D
UPPSALA (252)	63	998	576	1753	DB CB
RIOGLAB (264)	65	1053	788	1813	EE D
LABVAL (266)	217 <	996	701	1630	G CB
TECHHK (270)	79	1000	802	1830	EE D
IUNGPUL (275)	161	1024	599	1833	DB BG
VICTORY (597)	463 **	2718 **	1685 **	2718 **	HB D
FOODCHEM (847)	87	986	1866 **	1611	DB BF
SPASL (855)	76	1119	422	1930	EE CB
ENVSHPNL20 (913)	500 <	10365 **	677	1741	
ESPROT (1014)	455 **	2897 **	7029 **	6476 **	DB D
CGEA (1030)	147	1048	456	1316 *	G D
LASPEE (1036)	1490 **	4937 **	3016 **	6468 **	AA AB
SYRAT (1100)	170	524 *	633	1648	
=====					
	===== Statistical Results =====				
NDA mean	104.7	1088	732.2	1790	
NDA st dev	57.1	193	189.2	201	
N	23	32	30	31	
Median	117.0	1083	790.5	1813	
MAD	42.0	136	135.5	138	
=====					
P (as P) (g/kg)					
ISKCLASKCE (2)	3.39	2.39	2.04	0.910	G CB
BRAUNSCHW (3)	2.98	2.25	1.94	0.864	EE CB
AGRILAB (4)	3.26	2.31	2.02	0.890	
LYMAN-AGRO (5)	3.06	2.26	1.90	0.820	AB E
OOSTERBEEK (7)	3.28	2.44	2.12	0.938	G CB
CIRADFLHOR (12)	2.90	2.10	1.60 **	0.800	AA E
SIME DARBY (19)	3.16	2.33	1.98	0.896	AB E
AECSAGRICS (21)	3.20	2.26	2.00	0.950	DA E
MARDI (26)	2.86	2.29	2.10	0.950	DB CB
KUCHING (27)	3.00	2.19	1.87	0.800	AA CB
=====					
	===== Summary Statistics =====				
NDA mean	3.203	2.361	2.022	0.9133	
NDA st dev	0.220	0.137	0.120	0.0694	
N	113	113	113	113	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
P (as P) (g/kg)	(cont.)					
LRSCONTROL	(28)	3.07	2.31	2.00	0.865	AA CB
FELDA	(30)	3.12	2.29	2.00	0.900	AB E
LKS	(31)	3.54	2.50	2.12	0.990	DG CB
WAGENINGEN	(32)	3.42	2.47	2.12	0.950	G CB
OVA JORK	(35)	3.00	2.10	1.80	0.760 *	AA E
MHLUME	(36)	2.60 *	1.80 **	1.70 *	1.000	DA E
FORTEST	(44)	3.01	2.39	2.00	0.890	EE CB
REDUIT	(45)	3.16	2.31	1.91	0.937	DB E
LABTIUM	(47)	3.24	2.48	2.07	0.937	G CB
RELAB	(49)	3.27	2.46	2.03	0.869	EE CB
SIRI	(53)	3.20	2.40	2.10	0.700 **	DA Z
AAAGROUP	(56)	3.23	2.35	1.92	0.920	AA AA
AMIS-AGRO	(58)	3.35	2.35	2.04	0.890	AC CB
0055HIK	(59)	3.53	2.72 *	2.18	1.010	B D
BLRSLAL	(62)	3.13	2.25	1.88	0.830	AA E
AARESEARCH	(63)	3.18	2.32	2.00	0.910	AB E
MRMEAK	(65)	3.13	2.24	2.06	0.830	EE CB
CORBANA	(67)	3.35	2.33	1.99	0.870	EE CB
HAMELN	(68)	3.67 *	2.64 *	2.25	1.040	DG CB
ELML	(75)	2.88	2.11	1.82	0.840	G CB
DFAL	(76)	3.29	2.33	2.00	0.915	AA CB
HILL	(78)	3.33	2.29	2.01	0.910	EE CB
METLAPARKA	(81)	3.36	2.46	2.07	0.945	G CB
HLVA	(84)	3.13	2.31	1.95	0.875	G CB
ELAEIS.P	(85)	2.89	2.16	1.93	0.940	DA E
ECN	(86)	3.18	2.52	2.11	0.930	DG CB
CIAT	(90)	3.26	2.30	2.04	0.950	DC E
SPSSBKCH	(91)	3.13	2.28	1.97	0.900	AB E
BELFAST	(97)	3.41	2.44	2.09	0.923	DG CB
974BRET	(107)	3.35	2.44	11.00 **	1.090 *	AA E
POVLT	(115)	3.27	2.30	2.00	0.900	EE CB
LAPANDAY	(118)	2.93	2.15	2.09	1.360 **	DB E
NEMALAB	(125)	3.45	2.53	2.33 *	1.080 *	FB E
GGM	(129)	3.47	2.60	2.15	0.510 **	DA E
SASEXFAS	(130)	3.10	2.20	2.00	0.800	
XGCALAFIGA	(133)	3.38	2.55	2.20	1.000	EE CB
LUNUWILA	(135)	3.25	2.53	2.08	0.968	AA E
CCWELE	(136)	3.57	2.52	2.25	1.070 *	DC CB
GPM-GROUP	(143)	3.16	2.79 **	2.73 **	0.920	
ARCWSG	(152)	3.25	2.40	2.07	0.907	G CB
IRRI	(158)	2.98	2.11	1.86	0.830	DC CB
ANALRESLAB	(159)	2.91	2.31	1.98	0.912	EE CB
IRNASE	(164)	3.27	2.51	2.16	0.930	EE CB
SYNERS	(166)	3.07	2.26	1.94	0.823	AA CB
BVO95MBPD	(171)	3.44	2.53	2.15	0.970	EE CB
IRS	(173)	3.34	2.42	2.04	0.920	AA E
SMBPLNUP	(183)	2.82	2.14	1.90	0.830	AA E
JYUIER	(185)	3.49	2.57	2.19	1.010	EE CB
IPULAB	(186)	3.40	2.50	2.20	1.010	G CB
SAINTE-FOY	(190)	3.26	2.39	2.04	0.960	DA CB
SPAL	(196)	4.10 **	3.20 **	2.60 **	1.500 **	DA E
LQA-ATP	(198)	3.09	2.36	1.98	0.880	AA E
FFEEBW	(201)	3.22	2.27	1.97	0.900	DG CB
LAIMBURG	(202)	2.01 **	2.49	3.29 **	0.920	EE CB
SEEDLING	(203)	3.31	2.38	2.01	0.902	DA E
QLDNR&M	(204)	3.16	2.29	1.97	0.870	DB CB
DANRLAB	(206)	3.43	2.42	2.07	0.910	EE CB
C.S.S.	(209)	3.29	2.41	2.16	1.117 *	DA E
DATE	(218)	3.28	2.50	2.14	0.953	G CB
ALMP1011	(219)	3.35	2.50	2.15	1.020	AB CB
VILJAVUUSP	(228)	3.32	2.42	2.02	0.907	AA CB

===== Summary Statistics =====

NDA mean	3.203	2.361	2.022	0.9133	
NDA st dev	0.220	0.137	0.120	0.0694	
N	113	113	113	113	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
P (as P) (g/kg) (cont.)					
GUYLAB (231)	3.08	3.10 **	2.03	0.980	G E
KERICO (236)	3.34	2.45	2.15	1.020	AA E
RIOJALAB (238)	3.54	2.42	2.07	0.935	DA CB
CHRON (239)	3.21	2.29	1.83	0.850	AA CB
LASUTEVEA (241)	3.05	2.35	2.05	1.020	
SMART (246)	2.83	2.30	1.98	0.931	AB E
MONICA (248)	3.20	2.35	2.11	0.930	EB CB
REYEPS (249)	3.46	2.60	2.18	0.950	DG CB
ABMCE (250)	3.20	2.40	2.00	0.900	DA CB
UPPSALA (252)	3.00	2.30	2.00	0.900	DB CB
PINAGRO (256)	2.90	2.13	1.83	0.800	AB E
DAR (258)	2.70 *	2.30	1.80	0.700 **	DD E
ERSAFVGSACA (265)	3.01	2.28	1.97	1.330 **	DC E
LABVAL (266)	3.30	2.41	2.00	0.904	G CB
LUARE (269)	3.64	2.51	1.85	0.970	G KB
LAF (273)	3.30	2.40	2.00	0.900	G CB
MELIPLANT (274)	2.88	2.37	2.07	0.950	EE CB
IUNGPUL (275)	3.14	2.21	1.85	0.810	DA Z
VICTORY (597)	3.19	2.26	1.74 *	0.820	HB D
FOODCHEM (847)	3.23	2.33	2.01	1.030	DB E
AFBI (851)	4.54 **	2.58	2.06	0.940	G KB
SPASL (855)	3.22	2.38	2.02	0.906	EE CB
PASCAanalab (870)	2.77	2.28	2.15	0.910	AA E
IOPRI (880)	0.84 **	2.19	1.79	0.720 *	
LSF (895)	3.15	2.55	1.90	0.830	
RF-R&D (905)	3.12	2.35	2.07	0.836	DB CB
ENVSHPNL20 (913)	3.38	2.46	2.12	0.970	
SABIC R&T (927)	1.67 **	1.19 **	1.33 **	0.540 **	
RHODE (960)	2.61 *	2.02 *	1.68 *	0.750 *	H CB
SAC-CAL (973)	3.04	2.35	1.88	0.860	DG CB
AZBY (976)	3.20	2.30	2.00	0.900	DC E
LS-MRC (978)	3.91 **	2.39	2.08	0.900	AB AA
FERTILAB (979)	3.02	2.29	1.98	1.040	DC E
FAST (1007)	3.14	2.24	1.98	0.891	DA CB
LABZIB (1013)	3.12	2.23	1.91	0.791	EE E
SMART-BGR (1016)	3.76 *	2.48	2.55 **	1.150 **	AA CB
SUMIFRU (1026)	2.85	2.19	1.82	0.800	EE CB
LASPEE (1036)	2.32 **	1.60 **	1.52 **	0.650 **	DA E
KomLab (1044)	2.52 **	2.49	2.17	1.040	AA E
MMLAB (1059)	3.35	2.47	2.06	0.950	AA E
WASL-DG (1082)	4.20 **	2.80 **	2.50 **	0.970	
LABTECCOL (1087)	1.55 **	3.75 **	3.28 **	4.480 **	AA CB

	Statistical Results			
NDA mean	3.203	2.361	2.022	0.9133
NDA st dev	0.220	0.137	0.120	0.0694
N	113	113	113	113
Median	3.200	2.350	2.019	0.9100
MAD	0.150	0.092	0.082	0.0460

Pb (µg/kg)					
ISKCLASKCE (2)	50.0 <	901	77.9	6583	
BRAUNSCHW (3)	73.1	830	121.0 *	5798	EE D
IACM LTD (15)	50.0 <	832	60.6	5883	EE D
HKPC-EMD (16)	1000.0 <	1000 <	1000.0 <	6140	G D
WAGENINGEN (32)	14.0	710	64.0	6500	G D
LABTIUM (47)	50.0	990	130.0 *	6430	G D
0055HIK (59)	1000.0 <	1090 *	1000.0 <	7030	EE D
HAMELN (68)	-	725	58.0	6467	DG D
ELML (75)	197.0	737	361.0 **	5959	G CB

	Summary Statistics			
NDA mean	60.38	837.1	71.55	6070
NDA st dev	82.79	104.7	23.84	545
N	21	36	29	40

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Pb (µg/kg) (cont.)					
HLVA (84)	12.5	876	70.6	6221	G D
ECN (86)	500.0 <	1173 **	500.0 <	6558	DG CB
POVLT (115)	20.0 <	861	72.3	6149	EE CB
LEIPZIGMOE (132)	15.6	916	68.3	6442	
CCWELE (136)	10.3	852	67.0	8420 **	EE D
ARCWSG (152)	-	425 **	220.0 **	7904 **	G CB
ANALRESLAB (159)	6.7	859	65.0	6180	DC AA
IRNASE (164)	200.0 <	710	200.0 <	7370 *	EE CB
JYUIER (185)	50.0 <	810	66.3	5790	EE D
FFEEBW (201)	200.0 <	629	251.0 **	5420	DG CB
QLDNR&M (204)	10.0	870	70.0	5910	DB D
CHRON (239)	100.0	900	350.0 **	5300	
MONICA (248)	3000.0 <	3000 <	3000.0 <	3000 < **	EB CB
REYEPS (249)	100.0 <	800	100.0 <	5597	DG BG
ABMCE (250)	100.0 <	830	100.0 <	6040	EE D
IRQ-1992-S (251)	94.8	532 *	75.9	5756	EE BC
UPPSALA (252)	20.3	854	73.8	6156	DB CB
RIOGLAB (264)	22.9	911	74.4	5480	EE D
LABVAL (266)	1080.0 <	1060 <	1050.0 <	5750	
LUARE (269)	700.0 <	1000	700.0 <	6400	G KB
TECHHK (270)	12.6	803	68.0	6050	EE D
IUNGPUL (275)	105.0	782	146.0 **	6476	DB BG
VICTORY (597)	231.0 *	440 **	419.0 **	1304 **	HB D
WELLAB (714)	50.0 <	881	52.9	5498	
FOODCHEM (847)	135.6	661	334.5 **	5213	DB BF
SPASL (855)	1053.1 **	1945 **	812.2 **	6488	EE CB
PHARM (969)	3400.0 <	3400 <	3400.0 <	6120	DG CB
SAC-CAL (973)	1000.0 <	1000 <	1000.0 <	1000 < **	DG CB
ESPROT (1014)	93.1	854	107.4	5730	DB D
CGEA (1030)	157.6	435 **	156.2 **	2298 **	G D
LASPEE (1036)	1214.0 **	1405 **	1193.0 **	1353 **	AA AB
INSTN (1037)	-	-	-	12628 **	DG Z
DESAR (1108)	-	220 **	-	700 **	JB AF

	Statistical Results			
NDA mean	60.38	837.1	71.55	6070
NDA st dev	82.79	104.7	23.84	545
N	21	36	29	40
Median	73.07	842.0	75.90	6085
MAD	60.47	71.5	17.90	387

Pd (µg/kg)					
NPIAS (1089)	590 <	2170 <	3750 <	2930 <	L

===== No Statistical Results =====

Rb (µg/kg)					
LABTIUM (47)	1570	1940	9130	4950	G D
CCWELE (136)	1499	1873	7507	5534	
RIOGLAB (264)	1357	1722	6999	4099	EE D
LUARE (269)	5000 <	5000 <	8000	5600	G KB
VICTORY (597)	1711	2271	7646	6235	HB D
MASHA (1029)	1510	2210	7330	5400	G L
CGEA (1030)	1651	2019	7067	4564	G D
ETRR (1031)	1630	-	7060	4900	L
CNES (1033)	-	-	7 **	-	L
NECSA (1035)	1245	1842	5726 *	4210	
NPIAS (1089)	1480	2100	8120	6170	L
KFKI (1091)	1266	2158	8308	5776	L
SACAV (1095)	2730 **	4280 **	6780	5210	

	Summary Statistics			
NDA mean	1486	2018	7685	5458
NDA st dev	203	211	849	770
N	18	18	21	20

(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Rb (µg/kg) (cont.)						
ATCHI (1098)		-	740 **	6300	3200 *	
TEFA (1099)		1530	2070	8096	5599	L
SYRAT (1100)		1473	2034	9545 *	7267 *	
TECNUC (1103)		1260	2150	8060	5830	L
INDIES (1106)		2214 **	2985 **	8631	6436	L
DESAR (1108)		1500	1900	7800	5650	A L
NOUSSE (1110)		1286	1908	7404	5116	L
LNIP (1111)		1680	2850 **	8030	5610	G L
===== Statistical Results =====						
NDA mean		1486	2018	7685	5458	
NDA st dev		203	211	849	770	
N		18	18	21	20	
Median		1505	2052	7646	5567	
MAD		147	155	579	527	
=====						
S (as S) (g/kg)						
ISKCLASKCE (2)		0.930	2.85	2.38	1.05	
BRAUNSWH (3)		0.852	3.11	2.36	1.29	EE CB
AGRILAB (4)		1.020	2.86	2.34	1.08	
OOSTERBEEK (7)		0.991	3.14	2.61	1.13	G CB
MARDI (26)		0.850	2.80	2.56	1.12	DB CB
LRSCONTROL (28)		0.995	2.75	2.48	1.09	H Z
LKS (31)		0.930	2.99	2.41	1.09	DG CB
WAGENINGEN (32)		1.140	3.28	2.79	1.21	G CB
FORTEST (44)		0.830	2.92	2.35	1.01	EE CB
LABTIUM (47)		0.942	3.08	2.45	1.08	G CB
RELAB (49)		0.820	3.07	2.23	1.22	EE CB
AMIS-AGRO (58)		0.920	2.89	2.36	1.05	AA Q
MRMEAK (65)		0.870	2.80	2.43	0.98	EE CB
CORBANA (67)		0.920	3.01	2.45	1.06	EE CB
HAMELN (68)		1.060	3.26	2.64	1.26	DG CB
ELML (75)		0.820	2.55 *	2.10	0.92	G CB
HILL (78)		1.030	2.91	2.45	1.10	EE CB
METLAPARKA (81)		0.973	2.98	2.45	1.09	G CB
HLVA (84)		0.885	2.86	2.31	1.05	G CB
ELAEIS.P (85)		0.780	2.07 **	1.81 **	1.03	
ECN (86)		0.935	3.16	2.57	1.10	DG CB
CIAT (90)		0.960	2.96	2.41	1.05	DC Q
BELFAST (97)		0.989	3.17	2.64	1.15	DG CB
LAPANDAY (118)		1.330 **	3.17	1.81 **	1.61 **	DB E
MSIRI (121)		1.402 **	4.36 **	3.67 **	1.64 **	DC Q
NEMALAB (125)		1.170	3.40	3.03 **	1.50 **	FB E
GGM (129)		1.216 *	2.64	2.44	1.13	EE D
SASEXFAS (130)		0.100 **	3.00	2.20	0.50 **	
XGCALAFIGA (133)		0.960	3.15	2.55	1.13	EE CB
LUNUWILA (135)		0.320 **	2.96	2.40	0.57 **	
CCWELE (136)		1.075	3.04	2.57	1.21	G CB
ARCWSG (152)		0.935	3.02	2.38	1.07	G CB
IRRI (158)		0.820	2.86	2.34	0.99	DC CB
ANALRESLAB (159)		0.730	2.57	2.14	0.97	EE CB
IRNASE (164)		0.990	3.23	2.66	1.11	EE CB
SYNERS (166)		0.790	2.08 **	1.76 **	0.80 **	AA CB
JYUIER (185)		1.070	3.31	2.62	1.17	EE CB
IPULAB (186)		0.960	3.03	2.53	1.12	G CB
FFEEBW (201)		1.000	2.94	2.47	1.11	DG CB
LAIMBURG (202)		2.520 **	3.25	0.98 **	1.10	EE/CB
QLDNR&M (204)		0.890	2.78	2.33	0.98	DB CB
DANRLAB (206)		0.948	2.89	2.37	1.03	EE CB
DATE (218)		1.050	3.05	2.64	1.06	G CB
===== Summary Statistics =====						
NDA mean		0.9463	3.003	2.419	1.099	
NDA st dev		0.1126	0.217	0.202	0.100	
N		69	69	69	69	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
S (as S) (g/kg)	(cont.)					
ALMP1011	(219)	1.030	2.78	2.30	1.12	EK CB
VILJAVUUSP	(228)	0.965	2.99	2.42	1.07	DA CB
GUYLAB	(231)	0.100 **	4.21 **	2.03	0.90	DB E
CHRON	(239)	0.040 **	2.77	1.58 **	0.89 *	AA CB
MONICA	(248)	0.990	3.11	2.61	1.13	EB CB
REYEPS	(249)	1.000	3.31	2.60	1.13	DG CB
ABMCE	(250)	1.020	3.01	2.37	1.02	EE CB
UPPSALA	(252)	1.000	2.90	2.40	1.10	DB CB
RIOGLAB	(264)	0.800	2.83	2.19	1.10	EE D
LABVAL	(266)	0.942	2.94	2.34	1.05	G CB
LUARE	(269)	0.940	3.35	2.43	1.21	G KB
LAF	(273)	1.000	3.07	2.53	1.17	G CB
MELIPLANT	(274)	0.960	3.06	2.35	1.28	EE CB
IUNGPUL	(275)	0.885	3.27	2.70	1.05	DB CB
AFBI	(851)	1.040	3.41	2.54	1.18	G KB
SPASL	(855)	0.931	3.00	2.44	1.07	EE CB
PASCAAnalab	(870)	0.616 *	3.07	2.32	1.16	AA Q
LSF	(895)	0.850	3.43	2.25	1.28	
RF-R&D	(905)	0.936	3.00	2.45	1.15	DB CB
ENVSHPNL20	(913)	0.760	2.03 **	1.90 *	0.54 **	
SAC-CAL	(973)	0.760	2.35 **	1.98 *	0.75 **	DG CB
OPBLab	(975)	0.630 *	0.96 **	1.03 **	0.68 **	H Z
AZBY	(976)	1.200 *	3.00	2.30	1.30 *	DC Q
FERTILAB	(979)	1.090	2.90	1.95 *	1.28	DC Q
SUMIFRU	(1026)	0.940	4.39 **	2.92 *	1.70 **	EE CB
LABTECCOL	(1087)	0.900	2.63	1.99 *	0.05 **	AA CB
NPIAS	(1089)	0.090 < **	3.70 <	0.40 < **	0.20 < **	L
SYRAT	(1100)	21.500 <	26.30 <	61.00 <	61.00 <	

	Statistical Results			
NDA mean	0.9463	3.003	2.419	1.099
NDA st dev	0.1126	0.217	0.202	0.100
N	69	69	69	69
Median	0.9420	3.000	2.400	1.100
MAD	0.0780	0.150	0.140	0.070

Sb (µg/kg)						
BRAUNSCHW	(3)	4.53	30.1	6.45	228	EE D
0055HIK	(59)	100.00 <	100.0 <	100.00 <	200	EE D
HAMELN	(68)	-	29.9	-	337	DG D
JYUIER	(185)	50.00 <	50.0 <	50.00 <	170	EE D
RIOGLAB	(264)	3.00 <	28.4	10.10	218	
TECHHK	(270)	3.03	34.9	7.44	452	EE D
VICTORY	(597)	6.50	10.3 *	5.50	203	HB D
FOODCHEM	(847)	57.06 **	147.2 **	96.80 **	337	DB F
MASHA	(1029)	-	46.9	-	47	G L
ETRR	(1031)	-	-	-	517	L
CNES	(1033)	-	0.1 **	-	0	L
NPIAS	(1089)	5.00 <	39.0	10.00 <	480 <	L
KFKI	(1091)	-	37.1	-	462	L
REAK	(1092)	-	-	-	500	- L
SACAV	(1095)	-	39.0	-	369	
ATCHI	(1098)	24.90 **	65.6 **	35.80 **	289	
TEFA	(1099)	4.20 <	37.4	14.00 <	483	L
SYRAT	(1100)	4.40	34.5	8.50	772 *	
TECNUC	(1103)	-	41.4	-	507	L
INDIES	(1106)	15.00 <	48.0	20.00 <	460	L
DESAR	(1108)	1.00	30.0	-	440	A L
NOUSSE	(1110)	4.92	30.9	5.14	395	L
LNIP	(1111)	58.60 **	68.1 **	59.50 **	49	G L

	Summary Statistics				
NDA mean	4.183	35.83	7.144	344.0	
NDA st dev	2.490	9.92	3.711	193.2	
N	9	19	9	22	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Sb (µg/kg) (cont.)					
	===== Statistical Results =====				
NDA mean	4.183	35.83	7.144	344.0	
NDA st dev	2.490	9.92	3.711	193.2	
N	9	19	9	22	
Median	4.920	37.10	8.500	353.0	
MAD	1.890	7.10	3.000	132.5	
=====					
Se (µg/kg)					
BRAUNSCHW (3)	4.50	110	23.9	73.5	EE D
OOSTERBEEK (7)	64.84	178 *	50.8 *	110.3	G D
WAGENINGEN (32)	9.00	133	20.0	102.0	G D
LABTIUM (47)	500.00 <	500 <	500.0 <	500.0 <	
0055HIK (59)	100.00 <	150	100.0 <	100.0 <	EE D
HILL (78)	10.00 <	123	24.6	86.5	EE D
HLVA (84)	1.21	107	21.4	77.8	G BG
GGM (129)	20.00 <	101	20.0 <	106.0	EE D
ANALRESLAB (159)	5.00 <	162	26.0	115.0	DC F
JYUIER (185)	50.00 <	131	50.0 <	96.6	EE D
CHRON (239)	21.00	27 **	25.0	22.0 *	EE F
RIOGLAB (264)	2.87	104	21.6	72.5	EE D
IUNG PUL (275)	550.00 <	550 <	710.0 **	550.0 <	AA CB
SPASL (855)	-	105	1720.3 **	-	EE CB
ENVSHPNL20 (913)	500.00 <	500 <	500.0 <	500.0 <	
SAC-CAL (973)	300.00 <	85	300.0 <	64.2	DG F
CERT (1034)	31.20	36 **	31.5	33.0 *	L
NPIAS (1089)	120.00 <	131	110.0 <	250.0 <	L
SACAV (1095)	-	360 **	320.0 **	540.0 **	
TEFA (1099)	118.00 <	123 <	100.0 <	95.3	L
SYRAT (1100)	66.80 <	109	70.0 <	136.0	
TECNUC (1103)	-	143	47.2	129.0	L
INDIES (1106)	150.00 <	150 <	150.0 <	150.0 <	L
DESAR (1108)	-	120	-	90.0	A L
NOUSSE (1110)	-	121	29.3	84.1	L
LNIP (1111)	-	-	1150.0 **	152.0 *	G L
=====					
	===== Statistical Results =====				
NDA mean	-	120.3	26.30	93.70	
NDA st dev	-	23.7	10.54	29.08	
N	7	20	15	19	
Median	9.000	120.5	29.30	95.30	
MAD	7.790	16.2	7.90	19.70	
=====					
Sn (µg/kg)					
BRAUNSCHW (3)	333.0	101.0	399.0	232	EE D
WAGENINGEN (32)	21.0	67.0	7.0	360	G D
JYUIER (185)	100.0 <	100.0 <	100.0 <	239	EE D
RIOGLAB (264)	5.5	57.0	10.8	214	
TECHHK (270)	18.2	85.4	26.8	344	EE D
VICTORY (597)	15.4	106.0	39.6	307	HB D
=====					
	===== Statistical Results (no NDA) =====				
N	5	5	5	6	
Median	18.20	85.40	26.80	273.0	
MAD	2.80	18.40	16.00	50.0	
=====					
SO4 (as SO4) (g/kg)					
FORTEST (44)	0.010	1.11	0.160	0.060	FB JB
HILL (78)	0.200 <	1.23	0.200 <	0.200 <	FB CB
=====					
	===== Summary Statistics (No NDA) =====				
Median	0.1380	1.170	0.1920	0.2730	
MAD	0.1280	0.255	0.0320	0.2130	
N	3	4	3	3	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
SO4 (as SO4) (g/kg) (cont.)						
HLVA	(84)	0.138	1.62	0.443	0.273	
WASL-DG	(1082)	0.577	0.19	0.192	3.660	
===== Statistical Results (no NDA) =====						
N		3	4	3	3	
Median		0.1380	1.170	0.1920	0.2730	
MAD		0.1280	0.255	0.0320	0.2130	
=====						
Sr (mg/kg)						
BRAUNSCHW	(3)	2.180 **	51.3	24.2	40.2	EE D
LABTIUM	(47)	1.000 <	67.5	28.3	51.2	G CB
0055HIK	(59)	1.000 <	60.9	27.0	46.0	EE D
HAMELN	(68)	-	56.1	25.0	45.8	DG CB
HLVA	(84)	0.040	55.3	24.1	43.4	G D
ECN	(86)	0.200 <	56.7	23.5	44.4	DG CB
CCWELE	(136)	0.034	58.3	26.5	53.1	EE D
IRNASE	(164)	0.090	53.5	24.3	42.7	EE CB
JYUIER	(185)	1.000 <	52.9	23.7	42.9	EE CB
DATE	(218)	0.821	57.2	26.9	42.6	G CB
IRQ-1992-S	(251)	0.120	49.1	20.9	36.2	EE CB
RIOGLAB	(264)	0.045	53.8	23.5	40.4	EE D
LUARE	(269)	4.000 <	60.8	25.0	46.7	G KB
VICTORY	(597)	0.080	70.5 *	27.5	49.6	HB D
SPASL	(855)	23.887 **	293.3 **	612.9 **	2529.2 **	EE CB
MASHA	(1029)	-	62.0	24.0	48.0	
CGEA	(1030)	0.854	52.6	24.4	42.0	
ETRR	(1031)	-	64.7	-	-	L
NECSA	(1035)	-	41.0 *	28.7	40.7	
INSTN	(1037)	-	49.4	21.7	35.6	DG Z
NPIAS	(1089)	3.500 <	61.9	3.7 **	55.6 *	L
KFKI	(1091)	-	72.4 *	31.9 *	-	L
TEFA	(1099)	4.200 <	62.9	29.3	49.3	L
SYRAT	(1100)	1.550 *	60.2	31.7 *	60.4 *	
INDIES	(1106)	4.300 <	56.2	26.3	42.7	L
DESAR	(1108)	-	59.4	27.2	51.0	A L
NOUSSE	(1110)	3.560 **	56.9	24.5	43.4	L
LNIP	(1111)	-	42.5 *	25.4	46.2	G L
===== Statistical Results =====						
NDA mean		0.3031	57.39	25.33	44.82	
NDA st dev		0.6105	6.38	2.29	5.36	
N		12	28	27	26	
Median		0.4705	57.06	25.00	45.10	
MAD		0.4279	4.29	1.50	3.66	
=====						
Ti (mg/kg)						
BRAUNSCHW	(3)	0.20 <	8.1	0.20 <	8.2	EE CB
LABTIUM	(47)	0.50 <	10.0	0.66	7.9	G CB
HILL	(78)	10.00 <	12.0	10.00 <	10.0 <	
ECN	(86)	0.73	28.9	1.63	26.0	DG CB
CCWELE	(136)	0.12	10.5	0.98	7.5	
JYUIER	(185)	2.10	11.5	2.50	10.4	EE D
VICTORY	(597)	2.15	46.9	2.37	58.4	HB D
ETRR	(1031)	-	-	-	61.8	L
CNES	(1033)	-	33.7	-	-	L
NPIAS	(1089)	5.40 <	42.8	129.00	62.0	L
KFKI	(1091)	-	39.4	-	40.1	L
SYRAT	(1100)	30.20 <	47.0	205.00 <	154.0 <	
INDIES	(1106)	15.00 <	40.0 <	50.00 <	65.0 <	L
===== Summary Statistics =====						
NDA mean		-	26.26	-	29.20	
NDA st dev		-	23.33	-	27.43	
N		5	11	6	9	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Ti (mg/kg) (cont.)						
LNIP (1111)		68.70	-	-	-	G L
===== Statistical Results =====						
NDA mean		-	26.26	-	29.20	
NDA st dev		-	23.33	-	27.43	
N		5	11	6	9	
Median		2.100	28.90	2.000	26.00	
MAD		1.370	17.40	0.760	18.08	
=====						
V (µg/kg)						
BRAUNSCHW (3)		8.5	724	45.5	947	EE D
LABTIUM (47)		100.0 <	810	100.0 <	100 < **	G D
0055HIK (59)		1000.0 <	1000 <	1000.0 <	1310	EE D
ELML (75)		43.7	651	84.9	970	G CB
HLVA (84)		6.1	825	42.2	1009	G D
ECN (86)		250.0 <	1021	250.0 <	1220	DG CB
CCWELE (136)		25.0	963	-	1237	DC CB
JYUIER (185)		50.0 <	703	52.2	1030	EE D
DATE (218)		70.0	902	50.0 <	1054	G CB
ABMCE (250)		10.0 <	820	60.0	1070	EE D
RIOGLAB (264)		5.0 <	806	82.1	1084	EE D
TECHHK (270)		113.0	769	125.0	1060	EE D
VICTORY (597)		253.0 *	2220 **	879.0 **	1990 **	HB D
TLR (900)		1000.0 <	1000 <	1000.0 <	1100	
ETRR (1031)		-	1220	-	1160	L
CNES (1033)		-	1 **	-	1 **	L
CERT (1034)		-	1322	-	-	L
NPIAS (1089)		51.0 <	1147	900.0 <	1340	L
KFKI (1091)		-	1197	-	1487	L
SYRAT (1100)		187.0	1099	347.0 **	995	
INDIES (1106)		91.8	1229	120.0 <	1377	L
DESAR (1108)		-	1130	-	1250	A L
LNIP (1111)		-	555	-	810	G L
===== Statistical Results =====						
NDA mean		61.53	933.7	67.99	1119	
NDA st dev		67.08	283.5	46.64	193	
N		9	21	9	21	
Median		70.00	902.0	82.10	1084	
MAD		45.00	199.0	36.65	136	
=====						
Zn (mg/kg)						
BRAUNSCHW (3)		24.3	19.4	20.0	83.7	EE CB
AGRILAB (4)		22.4	20.2	20.9	86.7	
LYMAN-AGRO (5)		23.5	36.5 **	18.6	66.9 *	AA AA
OOSTERBEEK (7)		27.6	20.3	21.7	95.8	G CB
CIRADFLHOR (12)		24.0	19.3	19.8	96.2	AA AA
MARDI (26)		18.0 **	8.3 **	16.4 *	89.1	DB CB
KUCHING (27)		28.0	25.0 **	23.0	86.0	AA CB
LRSCONTROL (28)		25.3	18.9	20.2	83.3	AA CB
FELDA (30)		24.7	19.4	20.6	75.8	AA AA
LKS (31)		26.8	19.9	19.8	92.7	DG CB
WAGENINGEN (32)		25.7	19.1	19.6	90.2	G CB
OVA JORK (35)		21.9	17.2	17.5	81.9	AA AD
FORTEST (44)		25.4	18.9	19.7	86.9	EE CB
LABTIUM (47)		27.2	22.1	22.8	97.3	G CB
RELAB (49)		26.0	20.3	20.9	95.0	EE CB
AAAGROUP (56)		21.5	24.2 **	22.2	82.1	AA AA
AMIS-AGRO (58)		26.5	19.7	19.9	88.6	AC CB
===== Summary Statistics =====						
NDA mean		25.63	19.66	20.25	88.56	
NDA st dev		2.38	1.49	1.90	8.25	
N		122	121	122	122	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample		197	124	189	157	MIC
Zn (mg/kg)	(cont.)					
0055HIK	(59)	28.8	22.6	22.2	93.9	EE D
BLRSLAL	(62)	27.1	22.2	21.8	86.7	AA AA
AARESEARCH	(63)	25.1	19.4	20.6	85.1	AA AA
MRMEAK	(65)	25.3	19.5	20.5	90.9	EE CB
CORBANA	(67)	29.2	19.4	22.3	91.7	EE CB
HAMELN	(68)	29.9	22.9 *	22.1	106.0 *	DG CB
ELML	(75)	21.0	15.3 *	16.0 *	78.9	G CB
DFAL	(76)	22.8	19.8	20.0	86.9	AA CB
HILL	(78)	29.0	19.1	20.5	93.8	EE CB
METLAPARKA	(81)	25.4	18.6	19.1	87.3	G CB
HLVA	(84)	25.9	18.5	19.3	88.0	G CB
ELAEIS.P	(85)	30.7 *	26.2 **	26.0 **	89.8	DA AA
ECN	(86)	25.3	20.9	21.0	95.5	DG CB
CIAT	(90)	27.5	18.8	22.5	96.6	DC AB
SPSSBKCH	(91)	24.2	18.7	19.3	75.9	AB AA
974BRET	(107)	25.9	19.5	20.3	88.9	AA AB
POVLT	(115)	23.7	16.5 *	17.9	78.7	EE CB
LAPANDAY	(118)	27.0	24.0 *	30.0 **	78.0	DG AA
NEMALAB	(125)	23.1	19.2	18.6	84.3	FB AA
GGM	(129)	26.2	16.7	21.0	87.9	EE D
SASEXFAS	(130)	22.0	18.0	18.8	96.0	
LEIPZIGMOE	(132)	27.0	19.3	19.3	87.6	
XGCALAFIGA	(133)	25.6	18.9	19.7	90.2	EE CB
LUNUWILA	(135)	23.5	19.7	19.8	88.8	AA AA
CCWELE	(136)	28.0	21.3	22.1	98.4	EE D
GPM-GROUP	(143)	28.4	19.6	37.3 **	87.5	
ARCWSG	(152)	27.7	20.6	21.0	91.1	G CB
IRRI	(158)	23.8	17.6	19.3	82.9	DC CB
ANALRESLAB	(159)	25.0	17.7	18.1	75.6	EE CB
IRNASE	(164)	24.3	19.3	20.0	87.0	EE CB
SYNERS	(166)	24.3	18.2	19.7	80.9	AA CB
BVO95MBPD	(171)	24.8	17.4	18.2	79.9	EE CB
SMBPLNUP	(183)	21.3	20.0	36.1 **	66.1 *	AA CB
JYUIER	(185)	26.5	19.8	20.7	94.1	EE CB
IPULAB	(186)	27.2	21.7	22.7	97.7	G CB
SAINTE-FOY	(190)	27.5	25.6 **	24.2 *	100.3	DA CB
SPAL	(196)	54.7 **	46.3 **	39.3 **	120.0 **	
LQA-ATP	(198)	25.0	19.8	18.9	84.8	AA AA
FFEEBW	(201)	25.4	18.3	19.1	84.5	DG CB
LAIMBURG	(202)	15.7 **	16.6 *	23.9	90.7	EE CB
QLDNR&M	(204)	24.4	18.9	19.6	86.2	DB CB
DANRLAB	(206)	26.0	18.6	19.3	86.9	EE CB
DATE	(218)	27.6	19.9	22.7	93.5	G CB
ALMP1011	(219)	23.6	17.1	12.5 **	78.2	AB CB
VILJAVUUSP	(228)	29.6	24.9 **	24.9 *	91.6	AA CB
GUYLAB	(231)	24.5	80.3 **	32.6 **	19.2 **	G AA
KERICHO	(236)	24.5	20.5	20.3	80.7	AA AA
RIOJALAB	(238)	27.9	19.3	19.9	93.4	DA CB
CHRON	(239)	27.2	17.9	17.9	89.0	AA CB
LASUTEVEA	(241)	26.5	24.9 **	21.3	89.3	
SMART	(246)	23.4	18.6	18.3	83.7	AB AA
MONICA	(248)	26.9	18.8	21.8	96.4	EB CB
REYEPS	(249)	26.9	20.8	21.1	97.4	DG CB
ABMCE	(250)	27.6	20.4	20.0	89.0	EE D
IRQ-1992-S	(251)	26.6	20.8	21.8	91.4	EE AB
UPPSALA	(252)	25.9	20.7	20.6	91.4	DB CB
PINAGRO	(256)	27.3	23.2 *	4.3 **	79.9	AB AA
DAR	(258)	27.3	19.4	23.5	104.1	DD AA
RIOGLAB	(264)	23.1	19.7	19.7	80.3	EE D
ERSAFVGSCA	(265)	29.2	18.9	20.2	95.0	DC AA
LABVAL	(266)	25.5	19.0	19.2	88.0	G CB

===== Summary Statistics =====

NDA mean	25.63	19.66	20.25	88.56	
NDA st dev	2.38	1.49	1.90	8.25	
N	122	121	122	122	(cont.)

IPE 2012.1 - Inorganic Chemical Composition

Sample	197	124	189	157	MIC
Zn (mg/kg) (cont.)					
LUARE (269)	24.8	18.1	17.7	86.0	G KB
TECHHK (270)	25.5	19.1	20.0	88.7	
LAF (273)	29.3	21.3	22.0	101.3	G CB
IUNGPUL (275)	27.1	20.2	21.0	94.8	DB AC
VICTORY (597)	24.0	20.8	19.4	90.1	HB D
FOODCHEM (847)	26.1	21.6	22.2	94.3	DB AA
SPASL (855)	0.1 **	55.9 **	24.5 *	43.8 **	EE CB
PASCAAnalab (870)	23.2	19.1	18.1	78.4	AA AA
IOPRI (880)	30.4 *	20.1	10.9 **	49.7 **	
LSF (895)	25.4	21.8	19.0	89.8	
ENVSHPNL20 (913)	26.5	17.4	16.3 *	89.9	
SABIC R&T (927)	26.0	20.0	21.0	83.0	
RHODE (960)	26.1	23.0 *	23.5	77.4	H CB
SAC-CAL (973)	24.5	16.7	17.0	76.2	DG CB
AZBY (976)	27.3	21.6	23.1	87.8	DC AA
LS-MRC (978)	31.6 *	18.1	19.1	86.3	AA AA
FERTILAB (979)	25.2	20.5	20.0	88.0	DC AD
FAST (1007)	27.2	20.8	25.9 *	89.8	DA CB
ESPROT (1014)	24.7	19.3	19.9	81.9	DB D
SMART-BGR (1016)	36.1 **	20.1	23.9	102.0	AA CB
NISLT (1017)	22.4	22.1	20.1	61.6 **	
MASHA (1029)	24.7	20.0	20.0	92.0	G L
CGEA (1030)	18.0 **	14.7 **	18.3	70.0 *	G D
ETRR (1031)	20.9	-	19.0	80.1	L
CNES (1033)	23.5	18.8	17.6	80.2	L
CERT (1034)	32.2 *	32.3 **	25.6 *	104.5	L
NECSA (1035)	25.4	18.2	21.2	93.1	G L
LASPEE (1036)	66.8 **	69.8 **	80.3 **	160.6 **	AA AB
INSTN (1037)	31.5 *	31.8 **	28.1 **	92.9	DG Z
KomLab (1044)	27.5	20.5	19.4	135.0 **	AA AC
MMLAB (1059)	23.6	20.1	19.8	85.9	AA AA
WASL-DG (1082)	156.0 **	35.0 **	64.0 **	165.0 **	
LABTECCOL (1087)	66.0 **	12.7 **	9.7 **	16.5 **	AA CB
NPIAS (1089)	25.5	20.6	21.0	97.6	L
KFKI (1091)	21.4	20.4	20.1	91.2	L
REAK (1092)	23.7	20.4	21.0	63.8 **	- L
SACAV (1095)	25.0	20.0	17.0	75.0	
ATCHI (1098)	38.8 **	27.4 **	15.2 *	68.8 *	
TEFA (1099)	25.5	19.7	20.1	92.8	L
SYRAT (1100)	25.6	20.5	23.9	110.0 *	
TECNUC (1103)	24.3	21.6	21.9	102.8	L
INDIES (1106)	27.4	21.7	23.2	94.5	L
DESAR (1108)	25.0	20.0	20.2	95.4	A L
NOUSSE (1110)	22.9	19.8	19.6	80.2	L

	Statistical Results			
NDA mean	25.63	19.66	20.25	88.56
NDA st dev	2.38	1.49	1.90	8.25
N	122	121	122	122
Median	25.55	19.80	20.15	88.65
MAD	1.65	1.02	1.29	5.70

IPE 2012.1 - Real totals

Sample		197	124	189	157	MIC
AI (mg/kg)						
WAGENINGEN	(32)	4.00	541	25.0	746	G CB
AMIS-AGRO	(58)	11.10	433	34.5	650	
ELML	(75)	4.04	213	25.1	289	G CB
HLVA	(84)	3.20	483	22.9	426	
ECN	(86)	3.35	543	28.0	705	DG CB
CCWELE	(136)	3.35	465	-	579	
SAINTE-FOY	(190)	100.00 <	436	100.0 <	464	
FFEEBW	(201)	11.39	357	33.4	412	DG CB
VILJAVUJUSP	(228)	5.29	319	43.4	299	AA CB
RIOGLAB	(264)	2.97	417	22.9	529	
LUARE	(269)	150.00 <	686	150.0 <	652	DB CB
VICTORY	(597)	130.00 **	688	43.6	845	HB D
LSF	(895)	10.80	289	28.8	359	
ESPROT	(1014)	7.84	275	28.7	318	DB D
ETRR	(1031)	-	562	18.9	627	L
CNES	(1033)	11.45	455	-	672	L
CERT	(1034)	11.67	571	-	671	L
NECSA	(1035)	51.40 **	-	186.0 **	195	G L
INDIES	(1106)	21.12	534	51.7	684	L
NOUSSE	(1110)	22.60	587	44.7	663	L
LNIP	(1111)	9.39	246	35.5	444	G L

	=====	Statistical Results				=====
NDA mean	8.134	460.7	31.09	550.7		
NDA st dev	8.005	151.2	10.42	190.8		
N	18	20	16	21		
Median	10.095	460.1	31.10	579.0		
MAD	6.075	102.7	7.15	126.0		

C - elementary (g/kg)						
WAGENINGEN	(32)	453	447	460	491	H Z
FORTEST	(44)	432	431 *	456	489	H M
LABTIUM	(47)	461	454	466	501	H Z
RELAB	(49)	462	444	450	483	
PIEST-RIPP	(51)	457	452	465	498	H Z
AMIS-AGRO	(58)	460	455	470	504	
HILL	(78)	463	452	466	499	
METLAPARKA	(81)	463	460	470	504	H Z
HLVA	(84)	459	457	453	479	
CIAT	(90)	516 **	501 **	520 **	534 *	DA E
974BRET	(107)	458	461	461	472	H Z
ARCWSG	(152)	456	452	466	500	H Z
IRRI	(158)	444	446	455	484	H Z
ANALRESLAB	(159)	429 *	428 *	450	473	H Z
SAINTE-FOY	(190)	461	454	466	501	H
QLDNR&M	(204)	439	440	454	432 **	H Z
DANRLAB	(206)	455	450	472	495	H Z
MERLEWOOD	(217)	460	453	466	501	G Z
LABORECOF	(221)	452	447	460	495	H Z
LASUTEVEA	(241)	442	447	460	484	
UPPSALA	(252)	449	447	444	451 *	
RIOGLAB	(264)	445	446	462	489	
ERSAFVGSCA	(265)	423 *	424 *	440 *	466	
LABVAL	(266)	460	453	468	502	H Z
IUNGPUL	(275)	453	444	457	490	H Z
SeqBioMpl	(837)	443	442	455	486	
SPASL	(855)	443	438	450	482	H
LSF	(895)	435	430 *	443	471	
RHODE	(960)	529 **	483 **	487 *	506	
OPBLab	(975)	460	462	474	507	H Z

	=====	Summary Statistics				=====
NDA mean	453.5	449.5	460.8	492.4		
NDA st dev	11.0	8.7	10.3	15.3		
N	32	32	32	32	(cont.)	

IPE 2012.1 - Real totals

Sample		197	124	189	157	MIC
C - elementary (g/kg) (cont.)						
FARE	(1028)	470	466	478	510	H Z
LASPEE	(1036)	436	371 **	377 **	395 **	Z E

	Statistical Results			
NDA mean	453.5	449.5	460.8	492.4
NDA st dev	11.0	8.7	10.3	15.3
N	32	32	32	32
Median	455.3	448.8	460.5	490.3
MAD	7.2	5.8	7.0	10.7

N - elementary (g/kg)						
ISKCLASKCE	(2)	14.2	29.2	34.3	12.1	H Z
OOSTERBEEK	(7)	14.3	28.7	33.1	11.5	G
SIME DARBY	(19)	13.3	26.7 *	31.3	10.9	
KUCHING	(27)	11.5 **	26.5 *	31.3	9.5 *	
LRSCONTROL	(28)	14.2	28.4	32.9	11.2	H Z
LKS	(31)	14.5	28.4	33.2	11.6	H Z
WAGENINGEN	(32)	13.7	28.3	32.7	12.2	H Z
FORTEST	(44)	13.2	28.2	32.0	11.3	H M
LABTIUM	(47)	14.8	29.0	33.5	12.0	H Z
ESCH	(48)	14.3	28.6	33.4	11.4	H Z
RELAB	(49)	11.1 **	28.4	32.6	10.9	
PIEST-RIPP	(51)	13.9	27.2	32.3	11.1	H Z
SIRI	(53)	12.6 *	24.8 **	30.6 *	10.6	DA Z
AMIS-AGRO	(58)	14.4	29.0	33.0	12.4	H Z
MRMEAK	(65)	15.5 *	30.9 *	35.6 *	12.8	H JA
CORBANA	(67)	14.1	28.8	33.2	12.1	H JA
HILL	(78)	15.4 *	29.5	34.0	12.6	H Z
METLAPARKA	(81)	14.0	29.4	33.3	11.6	H Z
HLVA	(84)	13.1	28.9	34.5	10.3	
BELFAST	(97)	14.3	28.3	33.1	11.5	H Z
974BRET	(107)	14.7	28.8	33.4	11.9	H Z
POVLT	(115)	1.3 **	2.8 **	3.2 **	1.1 **	H Z
XGCALAFIGA	(133)	14.0	28.9	33.1	12.1	H Z
ARCWSG	(152)	14.2	28.8	33.3	11.4	H Z
IRRI	(158)	14.5	30.9 *	34.6	12.3	H Z
ANALRESLAB	(159)	13.0	26.5 *	31.4	10.6	H Z
SYNERS	(166)	13.9	26.9	32.8	11.8	H Z
IRS	(173)	13.4	26.6 *	31.5	10.8	DA O
SAINTE-FOY	(190)	14.1	28.1	32.9	11.3	
LAIMBURG	(202)	33.5 **	29.3	14.3 **	12.1	H Z
QLDNR&M	(204)	14.3	28.9	32.8	9.9 *	H Z
DANRLAB	(206)	13.5	27.4	33.1	11.6	H Z
MERLEWOOD	(217)	14.3	29.7	33.6	11.7	H Z
LABORECOF	(221)	13.7	29.2	33.2	11.6	H Z
VILJAVUUSP	(228)	12.5 *	25.6 **	31.0	10.4	Z
RIOJALAB	(238)	8.7 **	33.9 **	17.5 **	28.7 **	H Z
LASUTEVEA	(241)	13.0	25.8 **	30.4 *	11.0	
UPPSALA	(252)	14.0	28.0	34.0	11.0	H Z
RIOGLAB	(264)	13.2	27.1	32.2	11.5	
ERSAFVGSACA	(265)	14.1	27.9	32.2	11.7	H JA
LABVAL	(266)	13.9	28.6	34.0	12.2	H Z
LAF	(273)	14.4	29.1	34.6	12.3	H Z
IUNGPUL	(275)	14.3	29.3	33.1	12.0	H Z
SeqBioMpl	(837)	14.9	28.8	31.7	12.5	
SPASL	(855)	13.9	28.3	32.6	10.9	H
LSF	(895)	14.4	28.7	33.1	12.5	
OPBLab	(975)	14.7	31.5 **	36.1 *	11.8	H Z
FARE	(1028)	16.0 **	34.6 **	35.8 *	12.8	H Z

	Summary Statistics			
NDA mean	14.09	28.60	33.00	11.63
NDA st dev	0.60	0.89	1.20	0.80
N	48	48	48	48

(cont.)

IPE 2012.1 - Real totals

Sample	197	124	189	157	MIC
N - elementary (g/kg) (cont.)					
	===== Statistical Results =====				
NDA mean	14.09	28.60	33.00	11.63	
NDA st dev	0.60	0.89	1.20	0.80	
N	48	48	48	48	
Median	14.10	28.64	33.08	11.60	
MAD	0.40	0.60	0.83	0.56	
=====					
Si (mg/kg)					
AMIS-AGRO (58)	500 <	500 <	4400	29000	
ECN (86)	28	966	3668	10110	
VICTORY (597)	255	2280	4632	17720	HB/D
	===== Statistical Results (no NDA) =====				
N	2	2	3	3	
Median	141.4	1623	4400	17720	
MAD	113.7	657	232	7613	
=====					

IPE 2012.1 - Acid extractable (So-called totals)

Sample		197	124	189	157	MIC
Al (mg/kg)						
BRAUNSCHW	(3)	0.10 <	247	20.0	301	EE CB
LRSCONTROL	(28)	2.09	385	21.4	367	EE CB
LKS	(31)	-	272	26.0	324	DG CB
FORTEST	(44)	4.20	282	22.4	317	EE CB
LABTIUM	(47)	5.28	364	49.6 **	318	G CB
MRMEAK	(65)	0.20	216	21.9	230 *	EE D
CORBANA	(67)	3.01	294	26.7	311	
HAMELN	(68)	1.98	314	28.3	371	DG CB
HILL	(78)	10.00 <	263	37.6	358	EE CB
CCWELE	(136)	2.62	387	34.0	477 **	DC CB
ARCWSG	(152)	9.82	274	35.4	337	G CB
IRRI	(158)	2.69	288	24.3	318	DC CB
ANALRESLAB	(159)	6.40	291	25.3	360	EE CB
IRNASE	(164)	4.90	270	26.8	341	EE CB
JYUIER	(185)	5.00 <	260	26.0	364	EE CB
IPULAB	(186)	23.00 <	353	23.5	384	G CB
SAINTE-FOY	(190)	100.00 <	436 *	100.0 <	464 **	DA CB
QLDNR&M	(204)	1.77	342	27.0	370	DB CB
KERICHO	(236)	6.97	337	49.3 **	314	G CA
CHRON	(239)	5.00	307	37.0	246 *	AA CB
REYEPS	(249)	8.00	456 *	34.2	467 **	DG CB
UPPSALA	(252)	1.90	250	22.2	336	
LABVAL	(266)	4.55	294	22.6	324	G CB
SPASL	(855)	4.00	249	23.8	286	EE CB
RF-R&D	(905)	10.49 *	211	32.1	263	DB CB

	Statistical Results			
NDA mean	4.080	292.5	26.19	332.7
NDA st dev	2.994	59.5	5.90	41.1
N	19	25	24	25
Median	4.200	291.0	26.35	336.3
MAD	2.110	40.8	4.04	27.7

Si (mg/kg)						
CCWELE	(136)	19.1	111	466	-	G CB

=====
 No Statistical Results
 =====

IPE 2012.1 - Other determinations

Sample		197	124	189	157	MIC
delta 13C (‰ V-PDB)						
MERLEWOOD	(217)	-11.4	-28.0	-25.8	-29.4	
FARE	(1028)	-11.8	-28.7	-26.5	-30.0	H Z
===== Statistical Results (no NDA) =====						
N		2	2	2	2	
Median		-11.60	-28.36	-26.16	-29.70	
MAD		0.20	0.34	0.34	0.30	
=====						
delta 15N (‰ Air)						
MERLEWOOD	(217)	6.09	-0.800	4.56	-2.85	
FARE	(1028)	5.80	-0.600	4.70	-2.50	H Z
===== Statistical Results (no NDA) =====						
N		2	2	2	2	
Median		5.945	-0.7000	4.630	-2.675	
MAD		0.145	0.1000	0.070	0.175	
=====						

IPE 2012.1 - Nutritional values

Sample		197	124	189	157	MIC
ADF-ash-free (g/kg)						
OOSTERBEEK	(7)	25.4	289	233	569	ZZZA
REDUIT	(45)	32.7	320	323	649	
974BRET	(107)	28.0	283	259	509	-ZZA
ILRI	(116)	29.0	328	347	662	-ZZA
DAR	(258)	32.8	311	306	418	
SAC-CAL	(973)	36.9	314	288	651	-ZAA
NISLT	(1017)	26.2	309	299	610	
===== Statistical Results (no NDA) =====						
N		7	7	7	7	
Median		28.99	310.6	299.0	610.2	
MAD		3.59	9.4	24.0	41.6	
=====						
Crude fibre (g/kg)						
OOSTERBEEK	(7)	21.1	255	193 *	263	ZZZA
MARDI	(26)	24.1	256	258	274	
KUCHING	(27)	26.0	241	243	246	
REDUIT	(45)	17.3	255	232	302	-Z--
ESCH	(48)	20.7	271	262	287	
DAR	(258)	25.9	320 **	289	285	
SAC-CAL	(973)	19.1	239	215	253	GZ-A
NISLT	(1017)	32.8 *	282	258	273	
===== Statistical Results =====						
NDA mean		22.60	256.9	248.2	272.8	
NDA st dev		4.85	20.5	24.4	18.9	
N		8	8	8	8	
Median		22.58	255.5	250.5	273.5	
MAD		3.37	14.7	15.2	12.5	
=====						
NDF-ash-containing (g/kg)						
MARDI	(26)	161	533	807	752	
REDUIT	(45)	306	448	635	625	
NISLT	(1017)	36	442	584	584	
===== Statistical Results (no NDA) =====						
N		3	3	3	3	
Median		161.1	448.0	635.0	625.0	
MAD		124.6	5.7	51.1	40.6	
=====						
NDF-ash-free (g/kg)						
OOSTERBEEK	(7)	89	437	541	621	ZZZA
REDUIT	(45)	289	436	608	577	
974BRET	(107)	98	400	486	678	-ZZA
ILRI	(116)	485	464	632	683	-ZZA
DAR	(258)	103	431	601	557	
SAC-CAL	(973)	86	405	457	602	C--A
===== Statistical Results (no NDA) =====						
N		6	6	6	6	
Median		100.5	433.5	571.0	611.6	
MAD		13.2	16.0	48.9	44.5	
=====						
Total ash (g/kg)						
MARDI	(26)	13.9	111	100.2	78.1	
KUCHING	(27)	15.7	114	104.1	76.5	
REDUIT	(45)	13.0	106	94.1 *	75.9	-Z--
===== Summary Statistics =====						
NDA mean		14.97	112.7	99.87	79.06	
NDA st dev		1.25	6.2	2.46	4.73	
N		16	16	16	16	(cont.)

IPE 2012.1 - Nutritional values

Sample		197	124	189	157	MIC
Total ash (g/kg)	(cont.)					
ESCH	(48)	15.3	116	99.5	83.1	
ELML	(75)	14.6	117	102.0	82.0	Z--A
HILL	(78)	15.9	111	100.0	84.6	
974BRET	(107)	15.8	116	106.0 *	80.8	-Z-A
ILRI	(116)	11.3 *	114	100.5	82.0	--ZA
LPPAM	(124)	14.4	104	97.3	76.1	----
IRS	(173)	14.3	117	99.7	85.5	---A
DAR	(258)	14.5	110	99.0	80.0	
WELLAB	(714)	15.9	107	98.8	72.5	
FOODCHEM	(847)	14.4	119	112.6 **	76.7	AB P
SAC-CAL	(973)	17.2	100 *	99.9	74.0	---A
LS-MRC	(978)	18.9 **	120	105.1 *	86.3	H P
SUMIFRU	(1026)	15.2	110	94.8 *	73.0	

	Statistical Results			
NDA mean	14.97	112.7	99.87	79.06
NDA st dev	1.25	6.2	2.46	4.73
N	16	16	16	16
Median	14.88	112.4	99.95	79.05
MAD	0.87	4.3	1.60	3.05

Total fat (g/kg)					
MARDI	(26)	26.4	13.3	15.9	16.8
KUCHING	(27)	34.8	19.7	19.7	15.7
REDUIT	(45)	43.5	27.8	25.6	27.2
DAR	(258)	47.0	21.6	21.2	26.9
FOODCHEM	(847)	43.8	32.8	28.6	38.0
SAC-CAL	(973)	43.1	22.3	18.1	17.9

	Statistical Results (no NDA)			
N	6	6	6	6
Median	43.30	21.95	20.45	22.40
MAD	2.10	4.05	3.44	5.20

IPE 2012.1 Z - Scores

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
ISKCLASKCE (2)				
As (IN)	<	-0.69	<	-0.23
Ca (IN)	<	0.00	-0.10	-0.09
Cd (IN)	<	<	<	-1.34
Cu (IN)	0.14	-0.56	-0.18	-0.06
K (IN)	0.60	<	-4.98 < **	0.50
Mg (IN)	0.17	-0.35	-0.02	-0.24
N - NO3 (as N) (IN)	< #	1.22	0.37	-
P (as P) (IN)	0.85	0.21	0.15	-0.05
Pb (IN)	<	0.61	0.27	0.94
S (as S) (IN)	-0.14	-0.70	-0.19	-0.49
N - elementary (RT)	0.24	0.67	1.06	0.61
BRAUNSCHW (3)				
As (IN)	-0.45	-0.70	-0.64	-0.70
B (IN)	-2.15 < *	-0.68	-0.59	-0.35
Be (IN)	#	#	#	-1.02
Bi (IN)	#	#	#	#
Ca (IN)	1.43	-0.84	-0.80	-0.64
Cd (IN)	0.56	-0.39	0.13	-0.62
Co (IN)	-0.38	-0.78	-0.36	-0.43
Cr (IN)	-0.52	-0.86	-0.33	-0.44
Cu (IN)	5.44 **	2.25 *	1.56	1.56
Fe (IN)	-0.24	-0.13	-0.41	0.13
K (IN)	-0.30	-0.25	0.09	0.43
Li (IN)	#	#	#	#
Mg (IN)	-0.46	-0.91	-0.73	-0.59
Mn (IN)	-4.99 < **	-0.63	-0.93	-0.42
Mo (IN)	-0.51	-0.28	1.78	0.17
Na (IN)	2.61 *	1.22	2.68 *	0.62
Ni (IN)	0.22	-0.38	0.42	-0.22
P (as P) (IN)	-1.01	-0.81	-0.69	-0.71
Pb (IN)	0.15	-0.07	2.07 *	-0.50
S (as S) (IN)	-0.84	0.49	-0.29	1.91
Sb (IN)	0.14	-0.58	-0.19	-0.60
Se (IN)	#	-0.43	-0.23	-0.70
Sn (IN)	#	#	#	#
Sr (IN)	3.07 **	-0.96	-0.50	-0.86
Ti (IN)	< #	-0.78	< #	-0.76
V (IN)	-0.79	-0.74	-0.48	-0.89
Zn (IN)	-0.56	-0.19	-0.13	-0.59
Al (AE)	<	-0.77	-1.05	-0.77
AGRILAB (4)				
B (IN)	0.15	-0.34	-0.15	-0.30
Ca (IN)	-0.31	-0.42	-0.08	-0.22
Cu (IN)	0.81	-0.22	-0.33	-0.10
Fe (IN)	-1.42	-0.31	-0.31	-0.46
K (IN)	-1.85	-0.06	0.09	0.04
Mg (IN)	1.66	-0.27	-0.18	-0.24
Mn (IN)	2.98 *	0.03	-0.08	-0.38
N - Kjeldahl (as N) (IN)	-0.74	-0.11	-0.22	-0.51
Na (IN)	0.41	0.08	-0.03	-0.60
P (as P) (IN)	0.26	-0.37	-0.02	-0.34
S (as S) (IN)	0.65	-0.66	-0.39	-0.19
Zn (IN)	-1.36	0.36	0.34	-0.23
LYMAN-AGRO (5)				
B (IN)	-1.11	-1.97	-2.17 *	-1.85
Ca (IN)	-	-0.10	-0.10	-0.56
Cu (IN)	-2.53 *	-0.45	-1.58	-2.18 *
Fe (IN)	-0.65	-5.93 **	-3.27 **	-2.58 *
K (IN)	3.36 **	3.28 **	0.89	1.89
Mg (IN)	1.56	2.45 *	2.21 *	1.82
N - Kjeldahl (as N) (IN)	-0.39	0.09	-0.65	-0.85
P (as P) (IN)	-0.65	-0.74	-1.02	-1.35
Zn (IN)	-0.90	11.27 **	-0.88	-2.63 *

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
OOSTERBEEK (7)				
B (IN)	<	1.23	1.27	0.99
Ca (IN)	<	0.37	0.63	0.66
Cl (as Cl) (IN)	<	0.67	0.89	0.67
Co (IN)	<	-0.26	0.37	-0.03
Cu (IN)	0.15	0.25	1.25	1.25
Fe (IN)	1.19	-0.04	0.93	0.67
I (IN)	< #	#	#	#
K (IN)	1.31	1.26	0.85	1.55
Mg (IN)	1.32	1.16	1.32	1.55
Mn (IN)	0.78	0.85	0.58	1.02
Mo (IN)	-0.08	0.19	0.40	-0.70
N - Kjeldahl (as N) (IN)	0.60	0.58	0.36	0.03
N - NO3 (as N) (IN)	< #	-0.16	-0.41	#
Na (IN)	<	0.11	<	0.15
P (as P) (IN)	0.37	0.59	0.82	0.36
S (as S) (IN)	0.40	0.62	0.95	0.34
Se (IN)	#	2.42 *	2.32 *	0.57
Zn (IN)	0.81	0.40	0.76	0.87
N - elementary (RT)	0.38	0.07	0.11	-0.12
ADF-ash-free (NUT)	#	#	#	#
Crude fibre (NUT)	-0.31	-0.07	-2.27 *	-0.55
NDF-ash-free (NUT)	#	#	#	#
CIRADFLHOR (12)				
Ca (IN)	13.14 **	2.11 *	1.33	2.65 *
Cl (as Cl) (IN)	-0.19	-0.41	-0.63	-1.47
Fe (IN)	-0.52	-0.72	0.33	-1.26
K (IN)	-0.22	-2.31 *	-1.64	-0.96
Mg (IN)	-0.78	-0.35	-0.24	-0.93
P (as P) (IN)	-1.38	-1.91	-3.53 **	-1.63
Zn (IN)	-0.71	-0.23	-0.25	0.93
IACM LTD (15)				
As (IN)	<	-0.34	<	-0.76
Cd (IN)	<	-0.44	<	-0.41
Hg (IN)	< #	<	<	-0.37
Pb (IN)	<	-0.05	-0.46	-0.34
HKPC-EMD (16)				
As (IN)	<	<	<	<
Cd (IN)	<	<	<	<
Hg (IN)	< #	<	<	<
Pb (IN)	<	<	<	0.13
SIME DARBY (19)				
B (IN)	0.88	-0.34	-0.53	-0.23
Ca (IN)	0.52	0.74	-0.37	-0.54
K (IN)	0.60	0.70	0.64	0.64
Mg (IN)	-0.36	0.05	0.20	0.21
Mn (IN)	0.30	0.74	1.10	-0.35
N - Kjeldahl (as N) (IN)	0.11	-1.16	0.03	-0.03
P (as P) (IN)	-0.20	-0.20	-0.39	-0.25
N - elementary (RT)	-1.33	-2.15 *	-1.42	-0.95
AECSAGRICS (21)				
P (as P) (IN)	-0.01	-0.74	-0.18	0.53
MARDI (26)				
B (IN)	0.48	-4.75 **	-3.45 **	-4.19 **
Ca (IN)	0.17	-3.86 **	-1.10	-0.88
Cu (IN)	0.69	-0.36	-0.33	0.33
Fe (IN)	-0.86	-0.37	-0.14	0.91
K (IN)	-3.50 **	0.67	-0.19	-1.94
Mg (IN)	-0.99	0.29	0.31	0.56
Mn (IN)	-0.92	25.69 **	0.40	1.09
N - Kjeldahl (as N) (IN)	-0.93	-4.52 **	-0.34	0.00

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
MARDI (26) (cont.)				
Na (IN)	5.90 **	3.09 **	10.15 **	2.42 *
P (as P) (IN)	-1.56	-0.52	0.65	0.53
S (as S) (IN)	-0.86	-0.93	0.70	0.21
Zn (IN)	-3.19 **	-7.60 **	-2.03 *	0.07
Crude fibre (NUT)	0.31	-0.06	0.40	0.04
NDF-ash-containing (NUT)	#	#	#	#
Total ash (NUT)	-0.84	-0.27	0.12	-0.20
Total fat (NUT)	#	#	#	#
KUCHING (27)				
B (IN)	-0.33	-1.73	-1.54	-1.20
Ca (IN)	-	-0.98	-1.01	-0.68
Cu (IN)	3.63 **	1.30	1.74	-1.48
Fe (IN)	0.97	-0.06	0.86	-0.38
K (IN)	-0.65	-0.81	-0.49	-1.38
Mg (IN)	-4.71 **	-1.39	-0.78	-1.28
Mn (IN)	-	-1.50	-0.19	-0.34
P (as P) (IN)	-0.92	-1.25	-1.27	-1.63
Zn (IN)	0.99	3.58 **	1.44	-0.31
N - elementary (RT)	-4.36 **	-2.35 *	-1.42	-2.66 *
Crude fibre (NUT)	0.70	-0.77	-0.21	-1.43
Total ash (NUT)	0.59	0.17	1.72	-0.54
Total fat (NUT)	#	#	#	#
LRSCONTROL (28)				
B (IN)	-1.07	-0.43	-0.38	-0.53
Ca (IN)	<	-0.21	0.33	-0.31
Cl (as Cl) (IN)	8.58 **	0.67	0.41	0.09
Cu (IN)	-0.90	-0.71	-0.99	-0.13
Fe (IN)	-0.16	0.21	-0.71	0.22
Hg (IN)	#	0.41	0.04	0.37
K (IN)	-1.07	-0.20	-0.27	-1.53
Mg (IN)	-0.72	-0.27	0.42	-0.77
Mn (IN)	-0.20	0.79	-0.45	-0.54
Na (IN)	-0.57	-0.23	-0.46	-0.73
P (as P) (IN)	-0.63	-0.34	-0.17	-0.70
S (as S) (IN)	0.43	-1.16	0.28	-0.06
Zn (IN)	-0.13	-0.53	-0.04	-0.63
N - elementary (RT)	0.16	-0.28	-0.09	-0.59
Al (AE)	-0.66	1.55	-0.82	0.83
FELDA (30)				
B (IN)	0.16	-0.89	-0.24	-0.35
Ca (IN)	5.59 **	-1.18	1.19	-0.05
Cu (IN)	0.63	-0.03	-0.04	-1.05
Fe (IN)	13.60 **	0.27	8.04 **	-0.37
K (IN)	-0.20	-0.33	-0.16	-0.72
Mg (IN)	-0.67	-0.03	0.14	-0.36
Mn (IN)	0.99	0.30	-0.12	-0.50
N - Kjeldahl (as N) (IN)	-0.07	-0.58	0.18	-0.88
P (as P) (IN)	-0.38	-0.52	-0.18	-0.19
Zn (IN)	-0.40	-0.18	0.16	-1.54
LKS (31)				
B (IN)	0.44	1.19	-5.50 **	-1.02
Ca (IN)	-	1.27	-0.89	1.17
Cu (IN)	1.15	1.34	-0.44	1.09
Fe (IN)	-0.25	-1.43	-1.43	-0.81
K (IN)	0.23	1.21	0.01	0.13
Mg (IN)	0.49	0.53	0.14	0.67
Mn (IN)	0.05	-0.75	-1.40	-0.13
Na (IN)	-	2.19 *	-	1.01
P (as P) (IN)	1.54	1.02	0.82	1.11
S (as S) (IN)	-0.14	-0.06	-0.05	-0.09
Zn (IN)	0.49	0.16	-0.24	0.50
N - elementary (RT)	0.68	-0.22	0.17	-0.04

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
LKS (31) (cont.)				
Al (AE)	-	-0.34	-0.03	-0.21
WAGENINGEN (32)				
As (IN)	0.16	1.45	0.75	1.17
Ca (IN)	-0.54	-0.19	0.31	0.26
Cd (IN)	0.36	0.74	1.02	2.05 *
Co (IN)	-0.46	0.26	-0.34	-0.09
Cr (IN)	-0.61	-0.04	-0.35	1.73
Cu (IN)	-0.29	-0.59	0.25	0.48
F (IN)	< #	#	#	#
Fe (IN)	0.01	1.35	-0.11	0.88
K (IN)	0.53	1.03	0.52	0.74
Mg (IN)	0.71	-0.03	-0.29	0.56
Mn (IN)	0.23	0.15	0.53	0.85
Mo (IN)	0.78	0.67	0.47	1.93
Na (IN)	-0.68	-0.06	0.01	2.30 *
Ni (IN)	-0.38	0.68	0.29	0.80
P (as P) (IN)	0.99	0.80	0.82	0.53
Pb (IN)	-0.56	-1.21	-0.32	0.79
S (as S) (IN)	1.72	1.28	1.84	1.11
Se (IN)	#	0.54	-0.60	0.29
Sn (IN)	#	#	#	#
Zn (IN)	0.03	-0.37	-0.34	0.20
Al (RT)	-0.52	0.53	-0.58	1.02
C - elementary (RT)	-0.08	-0.28	-0.10	-0.12
N - elementary (RT)	-0.66	-0.34	-0.25	0.71
OVA JORK (35)				
B (IN)	0.03	0.79	0.06	1.91
Ca (IN)	-0.60	-1.39	-0.94	0.34
Cu (IN)	0.57	1.13	0.48	-1.57
Fe (IN)	-1.42	-0.71	-1.28	-1.93
K (IN)	-0.35	-0.61	-0.42	-0.96
Mg (IN)	0.28	0.45	-0.24	0.21
Mn (IN)	-3.34 **	-2.89 *	0.61	-1.90
N - Kjeldahl (as N) (IN)	0.64	0.93	0.76	0.60
Na (IN)	1.06	2.33 *	1.71	0.26
P (as P) (IN)	-0.92	-1.91	-1.86	-2.21 *
Zn (IN)	-1.57	-1.64	-1.45	-0.81
MHLUME (36)				
Ca (IN)	3.70 **	6.13 **	4.27 **	1.54
K (IN)	-1.22	-0.61	-0.50	-1.45
Mg (IN)	0.28	1.25	0.31	4.81 **
N - Kjeldahl (as N) (IN)	0.52	-0.59	-0.63	0.13
P (as P) (IN)	-2.74 *	-4.11 **	-2.69 *	1.25
FORTEST (44)				
B (IN)	-1.42	-0.56	-0.70	-0.91
Ca (IN)	0.05	0.00	-0.51	-0.48
Cu (IN)	-0.96	-0.45	0.36	-0.14
Fe (IN)	-0.38	-0.64	-0.65	-0.25
K (IN)	-0.37	-0.89	-0.38	-0.26
Mg (IN)	-1.21	-0.75	-0.89	-1.28
Mn (IN)	-1.00	-0.98	0.40	-0.52
P (as P) (IN)	-0.88	0.21	-0.18	-0.34
S (as S) (IN)	-1.03	-0.38	-0.34	-0.89
SO4 (as SO4) (IN)	#	#	#	#
Zn (IN)	-0.10	-0.51	-0.29	-0.20
C - elementary (RT)	-1.95	-2.12 *	-0.46	-0.24
N - elementary (RT)	-1.45	-0.46	-0.88	-0.40
Al (AE)	0.04	-0.18	-0.64	-0.38

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
REDUIT (45)				
K (IN)	-0.22	-0.25	-0.77	-0.45
N - Kjeldahl (as N) (IN)	0.27	-0.67	-1.78	-0.67
P (as P) (IN)	-0.19	-0.37	-0.94	0.34
ADF-ash-free (NUT)	#	#	#	#
Crude fibre (NUT)	-1.09	-0.09	-0.66	1.55
NDF-ash-containing (NUT)	#	#	#	#
NDF-ash-free (NUT)	#	#	#	#
Total ash (NUT)	-1.57	-1.09	-2.34 *	-0.67
Total fat (NUT)	#	#	#	#
LABTIUM (47)				
Ag (IN)	< #	#	< #	#
As (IN)	<	0.39	<	-0.04
B (IN)	0.93	0.21	1.58	-0.34
Ba (IN)	<	0.37	1.09	0.71
Be (IN)	< #	< #	< #	<
Bi (IN)	< #	< #	< #	< #
Ca (IN)	-0.51	1.07	0.35	0.71
Cd (IN)	2.57 *	0.98	1.25	0.85
Co (IN)	11.57 **	0.23	1.45	1.01
Cr (IN)	<	-0.31	1.04	0.53
Cu (IN)	0.38	0.95	2.89 *	0.74
Fe (IN)	0.15	0.23	0.77	0.32
Hg (IN)	#	-1.81	-3.39 < **	-2.09 *
K (IN)	0.90	2.06 *	1.23	1.11
Li (IN)	< #	#	#	#
Mg (IN)	-0.14	1.97	1.01	1.02
Mn (IN)	-0.02	1.24	0.26	0.53
Mo (IN)	0.91	0.65	2.24 *	0.14
Na (IN)	<	0.70	-0.13	0.49
Ni (IN)	3.77 **	1.98	2.84 *	1.84
P (as P) (IN)	0.17	0.87	0.40	0.34
Pb (IN)	-0.13	1.46	2.45 *	0.66
Rb (IN)	0.41	-0.37	1.70	-0.66
S (as S) (IN)	-0.04	0.36	0.15	-0.19
Se (IN)	< #	<	<	<
Sr (IN)	<	1.58	1.30	1.19
Ti (IN)	< #	-0.70	#	-0.78
V (IN)	<	-0.44	<	-5.28 < **
Zn (IN)	0.66	1.64	1.34	1.06
C - elementary (RT)	0.68	0.51	0.50	0.56
N - elementary (RT)	1.19	0.45	0.42	0.46
Al (AE)	0.40	1.20	3.97 **	-0.36
ESCH (48)				
N - elementary (RT)	0.38	0.02	0.29	-0.30
Crude fibre (NUT)	-0.38	0.66	0.58	0.75
Total ash (NUT)	0.25	0.60	-0.16	0.84
RELAB (49)				
B (IN)	<	0.83	0.32	0.69
Ca (IN)	<	0.16	-0.21	-0.03
Cl (as Cl) (IN)	9.23 **	0.95	1.42	0.62
Cu (IN)	-0.69	-0.54	0.02	-0.14
Fe (IN)	-0.22	-0.13	-0.31	-0.70
K (IN)	0.58	0.42	0.29	0.28
Mg (IN)	0.07	0.21	0.14	-0.02
Mn (IN)	<	0.49	0.22	0.46
Mo (IN)	-4.13 < **	-5.14 **	-3.44 **	-4.69 < **
Na (IN)	<	-0.37	<	-0.42
P (as P) (IN)	0.31	0.73	0.07	-0.64
S (as S) (IN)	-1.12	0.31	-0.94	1.21
Zn (IN)	0.15	0.43	0.34	0.78
C - elementary (RT)	0.77	-0.64	-1.04	-0.61
N - elementary (RT)	-5.03 **	-0.22	-0.33	-0.91

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
PIEST-RIPP (51)				
C - elementary (RT)	0.32	0.28	0.41	0.36
N - elementary (RT)	-0.33	-1.57	-0.58	-0.66
SIRI (53)				
B (IN)	12.40 **	1.01	1.10	0.59
Ca (IN)	1.46	-0.24	0.08	-0.73
Cu (IN)	1.76	1.29	-0.57	-3.64 **
Fe (IN)	-0.48	-2.01 *	-0.60	-4.19 **
K (IN)	0.18	-0.79	-0.45	0.16
Mg (IN)	-0.04	0.29	0.69	-1.39
Mn (IN)	1.74	1.97	0.52	-3.67 **
N - Kjeldahl (as N) (IN)	-0.36	-2.20 *	-2.60 *	-1.95
P (as P) (IN)	-0.01	0.29	0.65	-3.08 **
N - elementary (RT)	-2.51 *	-4.26 **	-2.00 *	-1.28
AAAGROUP (56)				
B (IN)	-0.57	0.68	-0.38	0.66
Ca (IN)	-0.62	-0.65	-1.53	-0.80
Cu (IN)	-1.09	0.62	-1.38	-0.91
Fe (IN)	-0.77	-0.35	-0.70	-0.63
K (IN)	0.40	0.12	-0.22	-0.18
Mg (IN)	-0.14	0.13	-0.46	-0.24
Mn (IN)	-0.25	0.74	0.02	0.50
N - Kjeldahl (as N) (IN)	-0.21	0.31	0.09	-0.45
P (as P) (IN)	0.12	-0.08	-0.85	0.10
Zn (IN)	-1.75	3.05 **	1.01	-0.79
AMIS-AGRO (58)				
B (IN)	0.88	-0.34	-0.06	-0.88
Ca (IN)	0.05	-0.26	-0.26	-0.04
Cl (as Cl) (IN)	0.15	0.08	0.49	-0.10
Cu (IN)	-0.35	-0.63	-0.44	-0.14
Fe (IN)	0.85	0.23	0.18	0.57
K (IN)	-0.10	0.06	-0.30	1.72
Mg (IN)	0.39	-0.03	0.31	0.44
Mn (IN)	0.92	0.12	1.42	0.86
Na (IN)	3.96 **	0.46	3.56 **	1.46
P (as P) (IN)	0.67	-0.08	0.15	-0.34
S (as S) (IN)	-0.23	-0.52	-0.29	-0.49
Zn (IN)	0.36	0.03	-0.19	0.00
Al (RT)	0.37	-0.18	0.33	0.52
C - elementary (RT)	0.59	0.63	0.89	0.76
N - elementary (RT)	0.51	0.45	0.00	0.96
Si (RT)	< #	< #	#	#
0055HIK (59)				
Ag (IN)	< #	< #	< #	< #
As (IN)	<	0.16	<	-0.45
B (IN)	-0.15	-0.49	-0.26	-0.06
Ca (IN)	<	0.73	1.10	0.55
Cd (IN)	<	<	<	-4.02 **
Co (IN)	<	<	<	<
Cr (IN)	<	0.30	0.86	0.32
Cu (IN)	0.02	0.06	1.17	0.49
Fe (IN)	-0.23	0.75	0.47	0.86
Hg (IN)	< #	1.59	1.18	-0.89
K (IN)	0.00	1.58	1.13	-0.31
Mg (IN)	1.13	0.69	1.34	0.79
Mn (IN)	0.40	1.51	0.28	-13.13 **
Mo (IN)	<	<	<	<
N - Kjeldahl (as N) (IN)	0.52	1.17	-0.14	12.73 **
Na (IN)	<	<	<	<
Ni (IN)	<	0.99	<	-0.45
P (as P) (IN)	1.49	2.63 *	1.32	1.39
Pb (IN)	<	2.42 *	<	1.76
Sb (IN)	<	<	<	-0.75

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
0055HIK (59) (cont.)				
Se (IN)	< #	1.25	<	<
Sr (IN)	<	0.55	0.72	0.22
V (IN)	<	<	<	0.99
Zn (IN)	1.31	1.97	1.02	0.65
BLRSLAL (62)				
B (IN)	15.35 **	-0.38	0.38	0.44
Ca (IN)	4.88 **	-0.10	-1.30	-1.05
Cl (as Cl) (IN)	278.99 **	23.12 **	-15.34 **	11.55 **
Cu (IN)	0.32	1.87	0.67	-1.78
Fe (IN)	5.75 **	-0.09	2.53 *	-1.23
K (IN)	6.51 **	-0.73	-5.30 **	-0.38
Mg (IN)	-1.10	-0.67	-0.24	-1.16
Mn (IN)	0.97	-1.91	-6.49 **	-1.27
N - Kjeldahl (as N) (IN)	1.77	1.33	0.19	2.52 *
P (as P) (IN)	-0.33	-0.81	-1.19	-1.20
Zn (IN)	0.62	1.70	0.81	-0.23
AARESEARCH (63)				
B (IN)	-1.10	-0.78	-0.02	-0.37
Ca (IN)	-0.19	-0.45	-0.08	-0.25
Cl (as Cl) (IN)	2.92 *	0.16	0.17	-0.56
Cu (IN)	-0.45	0.13	-0.18	0.01
Fe (IN)	-0.18	0.01	-0.16	-0.44
K (IN)	0.03	0.00	0.34	-0.72
Mg (IN)	-0.04	0.09	0.03	-0.24
Mn (IN)	0.03	0.30	0.32	-0.21
N - Kjeldahl (as N) (IN)	0.01	-0.19	-0.03	-0.35
P (as P) (IN)	-0.10	-0.30	-0.18	-0.05
Zn (IN)	-0.24	-0.15	0.18	-0.42
MRMEAK (65)				
B (IN)	-1.06	-0.19	0.44	0.02
Ca (IN)	<	0.23	-0.48	-0.40
Cu (IN)	-1.03	-0.98	-0.36	-0.29
Fe (IN)	-1.58	-0.97	-0.20	-0.46
K (IN)	0.03	0.12	0.25	0.01
Mg (IN)	0.28	0.45	0.85	0.21
Mn (IN)	0.30	-0.38	-0.83	-0.02
Mo (IN)	4.88 **	2.10 *	-1.37	-0.35
Na (IN)	<	-0.75	-0.91	-0.78
P (as P) (IN)	-0.33	-0.88	0.32	-1.20
S (as S) (IN)	-0.68	-0.93	0.05	-1.19
Zn (IN)	-0.14	-0.10	0.13	0.28
N - elementary (RT)	2.36 *	2.57 *	2.18 *	1.46
Al (AE)	-1.30	-1.29	-0.73	-2.50 *
CORBANA (67)				
B (IN)	-0.25	-0.34	0.19	0.02
Ca (IN)	-	0.36	-0.24	-0.12
Cu (IN)	0.17	-0.89	0.94	0.03
Fe (IN)	-0.61	-0.60	-0.70	-0.67
K (IN)	0.45	0.06	0.33	-0.11
Mg (IN)	-0.14	-0.27	0.03	-0.47
Mn (IN)	0.11	-0.17	1.09	0.46
P (as P) (IN)	0.67	-0.23	-0.27	-0.62
S (as S) (IN)	-0.23	0.03	0.15	-0.39
Zn (IN)	1.50	-0.17	1.08	0.38
N - elementary (RT)	0.01	0.22	0.17	0.59
Al (AE)	-0.36	0.03	0.09	-0.53
HAMELN (68)				
As (IN)	-0.19	1.43	<	2.83 *
B (IN)	0.32	1.74	1.62	2.48 *
Ba (IN)	<	-0.35	0.42	0.35
Ca (IN)	-0.54	1.27	1.37	2.05 *

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
HAMELN (68) (cont.)				
Cd (IN)	-0.01	-0.72	<	1.01
Co (IN)	-	-0.69	-0.58	0.11
Cr (IN)	-	-0.66	-	-0.43
Cu (IN)	0.63	0.62	0.99	1.04
Fe (IN)	0.39	0.41	0.47	0.51
Hg (IN)	< #	-0.54	-0.19	-1.17
K (IN)	0.70	0.73	0.73	0.67
Mg (IN)	0.71	0.21	0.74	0.67
Mn (IN)	0.75	0.93	0.86	1.39
Mo (IN)	0.91	0.14	0.03	1.52
Na (IN)	-0.55	-0.06	-0.34	0.08
Ni (IN)	-	-0.73	-0.83	-0.09
P (as P) (IN)	2.13 *	2.04 *	1.91	1.83
Pb (IN)	-	-1.07	-0.57	0.73
S (as S) (IN)	1.01	1.18	1.10	1.61
Sb (IN)	-	-0.60	-	-0.04
Sr (IN)	-	-0.20	-0.15	0.18
Zn (IN)	1.79	2.17 *	0.97	2.11 *
Al (AE)	-0.70	0.36	0.36	0.93
ELML (75)				
As (IN)	12.85 **	6.95 **	<	4.66 **
B (IN)	3.38 **	-1.51	-1.41	-0.77
Ca (IN)	-0.53	-0.23	-0.37	-0.12
Cd (IN)	11.39 **	10.69 **	23.67 **	3.99 **
Co (IN)	7.35 **	-2.10 *	-4.70 **	-2.68 *
Cr (IN)	2.20 *	-0.63	-1.29	-0.79
Cu (IN)	-1.33	-0.45	0.82	0.91
Fe (IN)	-0.31	-0.64	0.57	-0.09
Hg (IN)	#	95.66 **	31.04 **	-4.23 **
K (IN)	0.40	0.12	0.36	-0.04
Mg (IN)	0.39	0.37	0.58	0.33
Mn (IN)	-0.04	-8.47 **	1.15	0.44
N - Kjeldahl (as N) (IN)	1.52	1.33	1.25	0.44
N - NO3 (as N) (IN)	#	-5.02 **	-1.82	#
Na (IN)	3.02 **	-0.24	0.00	-0.14
Ni (IN)	<	-1.86	-1.40	-0.91
P (as P) (IN)	-1.47	-1.84	-1.69	-1.06
Pb (IN)	1.65	-0.96	12.14 **	-0.20
S (as S) (IN)	-1.12	-2.09 *	-1.58	-1.79
V (IN)	-0.27	-1.00	0.36	-0.77
Zn (IN)	-1.95	-2.92 *	-2.23 *	-1.17
Al (RT)	-0.51	-1.64	-0.58	-1.37
Total ash (NUT)	-0.29	0.69	0.86	0.62
DFAL (76)				
B (IN)	0.25	-0.05	-0.23	-0.16
Ca (IN)	-0.21	-0.23	-0.21	-0.31
Cu (IN)	0.84	0.15	-0.10	-0.14
Fe (IN)	-1.39	0.23	-0.21	-0.30
K (IN)	-1.95	-0.06	-0.19	-0.06
Mg (IN)	1.87	-0.03	0.03	-0.24
Mn (IN)	3.09 **	-0.03	-0.02	-0.15
N - Kjeldahl (as N) (IN)	-0.49	-0.19	-0.14	-0.19
Na (IN)	0.41	0.18	-0.15	-0.42
P (as P) (IN)	0.40	-0.23	-0.18	0.02
Zn (IN)	-1.19	0.10	-0.13	-0.20
HILL (78)				
B (IN)	-0.22	-0.01	0.19	0.48
Ca (IN)	<	0.03	-0.14	0.80
Cl (as Cl) (IN)	<	-0.04	0.30	-0.69
Co (IN)	<	-1.03	-0.69	-0.43
Cu (IN)	-0.41	-1.77	-0.56	0.04
Fe (IN)	-0.46	-1.04	-0.70	-0.28
I (IN)	< #	#	#	#

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
HILL (78) (cont.)				
K (IN)	0.35	-0.25	0.21	0.45
Mg (IN)	0.17	-1.15	-0.29	-0.13
Mn (IN)	4.63 **	-0.26	-13.51 **	0.93
Mo (IN)	0.15	-0.04	0.27	0.52
N - NO3 (as N) (IN)	< #	0.56	<	< #
Na (IN)	<	-0.89	<	-0.46
P (as P) (IN)	0.58	-0.52	-0.10	-0.05
S (as S) (IN)	0.74	-0.43	0.15	0.01
Se (IN)	< #	0.12	-0.16	-0.25
SO4 (as SO4) (IN)	< #	#	< #	< #
Ti (IN)	< #	-0.61	< #	<
Zn (IN)	1.41	-0.37	0.13	0.64
C - elementary (RT)	0.86	0.28	0.50	0.43
N - elementary (RT)	2.19 *	1.01	0.84	1.21
Al (AE)	<	-0.50	1.94	0.62
Total ash (NUT)	0.75	-0.28	0.05	1.17
METLAPARKA (81)				
B (IN)	0.46	-0.16	-0.36	0.02
Ca (IN)	-0.54	0.42	-0.80	0.89
Cu (IN)	-0.04	-0.68	-0.79	-0.12
Fe (IN)	-0.60	-1.61	-1.74	-0.91
K (IN)	0.28	0.06	-0.30	-0.11
Mg (IN)	-0.25	0.05	-0.02	0.10
Mn (IN)	-0.44	-1.47	-0.78	-0.44
P (as P) (IN)	0.72	0.73	0.40	0.46
S (as S) (IN)	0.24	-0.11	0.15	-0.09
Zn (IN)	-0.10	-0.71	-0.61	-0.15
C - elementary (RT)	0.86	1.21	0.89	0.76
N - elementary (RT)	-0.16	0.90	0.25	-0.04
HLVA (84)				
As (IN)	-0.64	0.27	1.66	-0.25
B (IN)	0.06	0.24	-0.02	0.02
Be (IN)	< #	#	#	-0.36
Ca (IN)	<	0.10	0.01	0.15
Cd (IN)	-0.05	-0.13	-0.54	-0.04
Cl (as Cl) (IN)	0.85	-0.04	0.30	0.23
Co (IN)	<	0.18	-0.22	-0.40
Cr (IN)	-0.05	0.07	0.24	0.18
Cu (IN)	-0.50	-0.29	-0.10	-0.14
Fe (IN)	0.07	0.70	-0.41	1.13
Hg (IN)	#	-0.24	-0.60	0.00
K (IN)	0.50	0.30	0.48	0.38
Mg (IN)	0.71	-0.03	0.85	0.21
Mn (IN)	-0.69	-0.55	0.50	0.29
Mo (IN)	-0.76	-0.34	0.01	-0.69
N - NH4 (as N) (IN)	#	#	#	#
N - NO3 (as N) (IN)	< #	-0.91	-0.60	< #
Na (IN)	<	-0.31	<	-0.51
Ni (IN)	0.90	-0.54	0.58	-0.45
P (as P) (IN)	-0.33	-0.37	-0.60	-0.55
Pb (IN)	-0.58	0.37	-0.04	0.28
S (as S) (IN)	-0.54	-0.66	-0.54	-0.49
Se (IN)	#	-0.56	-0.46	-0.55
SO4 (as SO4) (IN)	#	#	#	#
Sr (IN)	-0.43	-0.33	-0.54	-0.27
V (IN)	-0.83	-0.38	-0.55	-0.57
Zn (IN)	0.11	-0.77	-0.50	-0.07
Al (RT)	-0.62	0.15	-0.79	-0.65
C - elementary (RT)	0.50	0.86	-0.75	-0.88
N - elementary (RT)	-1.67	0.34	1.26	-1.66

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
ELAEIS.P (85)				
B (IN)	0.65	-1.02	-1.14	-1.23
Ca (IN)	1.70	-0.21	-0.82	-1.56
Cl (as Cl) (IN)	8.44 **	-0.16	0.02	-0.49
Cu (IN)	1.30	0.74	-0.56	-0.22
Fe (IN)	0.04	-2.93 *	-0.96	-3.42 **
K (IN)	-0.47	-1.10	-1.11	-1.09
Mg (IN)	-0.46	-1.39	-1.05	-0.93
Mn (IN)	1.29	-0.10	-0.42	-0.75
N - Kjeldahl (as N) (IN)	-1.43	-2.00 *	-1.08	-0.43
P (as P) (IN)	-1.42	-1.47	-0.77	0.38
S (as S) (IN)	-1.48	-4.30 **	-3.02 **	-0.69
Zn (IN)	2.13 *	4.38 **	3.02 **	0.15
ECN (86)				
B (IN)	-0.08	1.45	1.41	1.02
Ba (IN)	-0.46	0.73	-0.45	0.74
Ca (IN)	-0.51	0.55	-0.12	0.52
Cd (IN)	<	<	<	1.16
Co (IN)	<	-0.01	<	<
Cr (IN)	<	0.55	1.60	0.96
Cu (IN)	-0.50	1.15	-0.10	0.83
Fe (IN)	0.52	2.00 *	0.57	1.13
Hg (IN)	< #	3.98 **	0.42	0.68
K (IN)	0.33	-0.55	-1.21	1.30
Li (IN)	< #	#	< #	#
Mg (IN)	-0.04	0.13	0.03	0.44
Mn (IN)	-0.02	0.75	-0.32	0.88
Na (IN)	-0.69	-0.62	-0.33	2.95 *
Ni (IN)	<	0.63	0.64	1.06
P (as P) (IN)	-0.10	1.16	0.74	0.24
Pb (IN)	<	3.21 **	<	0.90
S (as S) (IN)	-0.10	0.72	0.75	0.01
Sr (IN)	<	-0.11	-0.80	-0.08
Ti (IN)	#	0.11	#	-0.12
V (IN)	<	0.31	<	0.52
Zn (IN)	-0.14	0.83	0.39	0.84
Al (RT)	-0.60	0.54	-0.30	0.81
Si (RT)	#	#	#	#
CIAT (90)				
B (IN)	-0.64	0.55	0.94	0.26
Ca (IN)	3.94 **	2.66 *	0.53	1.06
Cu (IN)	0.69	-0.66	0.24	-0.31
Fe (IN)	-0.57	-0.50	0.07	0.20
K (IN)	-1.22	1.43	1.48	-1.60
Mg (IN)	-0.78	-0.99	-0.51	-0.47
Mn (IN)	-1.72	-0.32	0.54	0.90
N - Kjeldahl (as N) (IN)	0.88	-0.96	0.98	0.88
Na (IN)	-0.45	-0.03	-0.19	-0.35
P (as P) (IN)	0.26	-0.45	0.15	0.53
S (as S) (IN)	0.12	-0.20	-0.05	-0.49
Zn (IN)	0.77	-0.61	1.20	0.97
C - elementary (RT)	5.65 **	5.92 **	5.72 **	2.74 *
SPSSBKCH (91)				
B (IN)	0.43	0.28	0.78	0.19
Ca (IN)	0.64	0.36	0.24	0.71
Cu (IN)	5.78 **	2.57 *	1.05	-0.75
Fe (IN)	0.78	-1.04	-1.49	-1.21
K (IN)	-0.32	-0.25	-0.11	-0.79
Mg (IN)	-1.74	-1.39	-1.38	-1.74
Mn (IN)	-1.10	-1.33	-1.06	-1.63
N - Kjeldahl (as N) (IN)	0.01	-0.03	0.35	1.72
P (as P) (IN)	-0.33	-0.59	-0.43	-0.19
Zn (IN)	-0.60	-0.64	-0.50	-1.53

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
BELFAST (97)				
Ca (IN)	-0.96	1.33	0.85	1.72
K (IN)	1.18	1.21	1.27	0.74
Mg (IN)	1.13	0.53	0.74	0.79
P (as P) (IN)	0.94	0.58	0.57	0.14
S (as S) (IN)	0.38	0.77	1.10	0.51
N - elementary (RT)	0.35	-0.34	0.09	-0.16
974BRET (107)				
Ca (IN)	1.58	1.91	3.30 **	2.09 *
Cu (IN)	21.32 **	3.11 **	1.97	-1.61
Fe (IN)	0.45	0.92	0.57	-0.65
K (IN)	0.98	1.15	0.99	-0.45
Mg (IN)	0.60	1.33	0.96	0.21
Mn (IN)	-0.03	0.23	0.54	0.21
N - Kjeldahl (as N) (IN)	0.14	-0.19	-0.06	-0.19
P (as P) (IN)	0.67	0.58	75.07 **	2.55 *
Zn (IN)	0.11	-0.10	0.02	0.04
C - elementary (RT)	0.41	1.32	0.02	-1.33
N - elementary (RT)	1.02	0.22	0.34	0.34
ADF-ash-free (NUT)	#	#	#	#
NDF-ash-free (NUT)	#	#	#	#
Total ash (NUT)	0.67	0.53	2.49 *	0.37
POVLT (115)				
As (IN)	0.16	2.02 *	-0.61	1.29
B (IN)	-0.47	0.10	-0.02	-0.13
Ca (IN)	<	-0.52	-0.71	-1.23
Cd (IN)	-0.13	-0.16	<	0.38
Cl (as Cl) (IN)	13.96 **	-12.07 **	-9.67 **	-1.14
Cu (IN)	-0.66	1.06	1.40	0.39
Fe (IN)	-0.49	-0.66	0.18	-0.32
Hg (IN)	< #	<	1.18	-0.48
K (IN)	0.13	0.05	0.09	-0.23
Mg (IN)	-0.36	-0.67	-0.24	-0.93
Mn (IN)	-0.45	0.35	-0.63	-0.47
N - Kjeldahl (as N) (IN)	-0.74	-1.18	-0.03	-1.58
N - NO3 (as N) (IN)	< #	0.14	1.24	< #
Na (IN)	<	-0.65	-0.48	-0.90
Ni (IN)	<	-1.71	-0.57	-1.25
P (as P) (IN)	0.31	-0.46	-0.18	-0.19
Pb (IN)	<	0.23	0.03	0.15
Zn (IN)	-0.81	-2.11 *	-1.24	-1.20
N - elementary (RT)	-21.45 **	-28.94 **	-24.88 **	-13.20 **
ILRI (116)				
N - Kjeldahl (as N) (IN)	0.23	1.43	1.59	0.24
ADF-ash-free (NUT)	#	#	#	#
NDF-ash-free (NUT)	#	#	#	#
Total ash (NUT)	-2.94 *	0.22	0.24	0.61
LAPANDAY (118)				
B (IN)	2.44 *	0.79	0.95	1.16
Ca (IN)	1.46	2.30 *	1.46	0.85
Cu (IN)	0.57	1.30	0.59	-0.59
Fe (IN)	-0.36	0.81	5.07 **	-1.65
K (IN)	-0.22	-1.32	-0.91	-0.57
Mg (IN)	-1.10	-1.23	-0.46	-1.39
Mn (IN)	0.37	1.39	2.51 *	-1.25
N - Kjeldahl (as N) (IN)	1.02	-0.75	-0.47	0.44
Na (IN)	0.19	0.39	0.36	-0.64
P (as P) (IN)	-1.24	-1.54	0.57	6.44 **
S (as S) (IN)	3.41 **	0.77	-3.02 **	5.11 **
Zn (IN)	0.57	2.91 *	5.12 **	-1.28

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
MSIRI (121)				
Ca (IN)	2.72 *	0.96	0.35	0.04
Mg (IN)	-0.38	-0.34	0.27	-0.52
S (as S) (IN)	4.05 **	6.25 **	6.20 **	5.45 **
LPPAM (124)				
Total ash (NUT)	-0.45	-1.40	-1.04	-0.63
NEMALAB (125)				
Ca (IN)	3.70 **	-7.86 **	-8.86 **	-8.77 **
Cu (IN)	-0.96	-0.80	0.59	-0.41
Fe (IN)	0.85	0.52	2.15 *	0.90
K (IN)	-1.97	-3.46 **	-3.05 **	-2.67 *
Mg (IN)	-5.56 **	-5.15 **	-2.25 *	-3.80 **
Mn (IN)	-3.02 **	2.72 *	0.74	2.21 *
N - Kjeldahl (as N) (IN)	0.64	0.88	0.43	0.21
P (as P) (IN)	1.13	1.24	2.58 *	2.40 *
S (as S) (IN)	1.99	1.83	3.03 **	4.01 **
Zn (IN)	-1.07	-0.30	-0.87	-0.52
GGM (129)				
B (IN)	<	-2.27 *	-0.82	-0.79
Ca (IN)	-0.09	-1.80	-1.46	0.64
Co (IN)	<	-1.37	1.37	-0.76
Cu (IN)	1.24	-1.36	0.15	0.19
Fe (IN)	1.29	-2.22 *	0.25	-0.47
K (IN)	3.85 **	-0.45	0.70	0.45
Mg (IN)	4.77 **	-1.89	-0.46	0.15
Mn (IN)	1.72	-0.39	0.47	1.13
Mo (IN)	<	-1.75	-0.30	-2.59 *
N - Kjeldahl (as N) (IN)	-0.99	-1.00	-1.04	-0.99
Na (IN)	<	-1.24	<	-0.35
P (as P) (IN)	1.22	1.75	1.07	-5.81 **
S (as S) (IN)	2.40 *	-1.69	0.09	0.33
Se (IN)	< #	-0.81	<	0.42
Zn (IN)	0.25	-1.97	0.38	-0.08
SASEXFAS (130)				
Ca (IN)	10.78 **	-7.55 **	1.55	-4.19 **
Cu (IN)	0.57	-0.40	-0.56	-0.14
Fe (IN)	3.98 **	-0.71	0.77	-1.35
K (IN)	1.28	-0.12	0.33	1.23
Mg (IN)	-0.78	-1.15	-0.78	-0.93
Mn (IN)	1.59	-0.06	-12.25 **	-0.19
N - Kjeldahl (as N) (IN)	2.02 *	5.19 **	2.40 *	6.19 **
P (as P) (IN)	-0.47	-1.18	-0.18	-1.63
S (as S) (IN)	-7.52 **	-0.01	-1.09	-5.99 **
Zn (IN)	-1.53	-1.11	-0.76	0.90
LEIPZIGMOE (132)				
As (IN)	0.26	0.34	-0.30	-0.27
Ca (IN)	-0.42	2.40 *	2.14 *	2.56 *
Cd (IN)	0.54	0.10	-0.10	0.22
Co (IN)	-0.34	0.91	0.05	0.61
Cr (IN)	-0.53	0.42	0.08	0.35
Cu (IN)	0.14	-0.07	0.13	0.39
Fe (IN)	0.76	3.31 **	1.45	1.89
Hg (IN)	#	0.05	-0.77	-0.24
Mg (IN)	2.83 *	3.57 **	3.90 **	4.00 **
Mn (IN)	0.92	2.57 *	-	2.38 *
Mo (IN)	0.00	0.36	0.49	0.21
Ni (IN)	-0.46	0.68	0.22	-
Pb (IN)	-0.54	0.75	-0.14	0.68
Zn (IN)	0.57	-0.24	-0.50	-0.12

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
XGCALAFIGA (133)				
B (IN)	-0.24	0.61	0.14	0.47
Ca (IN)	-0.42	0.92	1.24	1.91
Cu (IN)	-2.53 *	-1.59	-0.47	1.43
Fe (IN)	-0.34	0.12	0.06	0.47
K (IN)	0.58	0.62	0.59	0.55
Mg (IN)	0.60	0.61	0.85	1.02
Mn (IN)	-0.17	0.44	0.19	0.67
P (as P) (IN)	0.81	1.38	1.49	1.25
S (as S) (IN)	0.12	0.68	0.65	0.31
Zn (IN)	0.00	-0.50	-0.29	0.20
N - elementary (RT)	-0.12	0.30	0.11	0.54
LUNUWILA (135)				
Ca (IN)	0.21	2.26 *	-0.48	-0.83
Cu (IN)	-0.50	-0.24	-0.70	-0.03
Fe (IN)	-0.91	-0.16	-0.30	0.79
K (IN)	-0.02	0.17	0.64	-0.09
Mg (IN)	-0.88	-0.35	-0.67	-0.02
Mn (IN)	-0.88	-0.32	-0.23	-0.22
N - Kjeldahl (as N) (IN)	3.71 **	4.94 **	2.88 *	2.33 *
Na (IN)	1.16	1.84	2.57 *	0.04
P (as P) (IN)	0.22	1.22	0.45	0.79
S (as S) (IN)	-5.56 **	-0.20	-0.10	-5.29 **
Zn (IN)	-0.89	0.00	-0.22	0.03
CCWELE (136)				
B (IN)	0.12	0.10	1.20	1.27
Ba (IN)	-0.66	-0.63	0.83	0.01
Be (IN)	< #	#	#	3.80 **
Bi (IN)	#	#	#	#
Ca (IN)	-0.51	-0.98	0.97	-0.12
Cd (IN)	0.17	0.02	-0.64	0.38
Co (IN)	-0.34	0.70	0.65	0.46
Cr (IN)	-0.13	-0.38	0.70	0.26
Cs (IN)	#	0.01	55.73 **	0.19
Cu (IN)	-0.44	0.16	0.27	0.73
Fe (IN)	-0.55	-0.28	-0.77	0.51
Li (IN)	#	#	#	#
Mg (IN)	-1.34	-1.58	-1.63	-1.51
Mn (IN)	-0.51	-0.64	-0.72	-0.49
Mo (IN)	-0.23	-0.09	0.44	0.76
Na (IN)	-0.68	0.39	-0.40	0.71
Ni (IN)	-0.77	0.61	0.31	2.06 *
P (as P) (IN)	1.69	1.19	1.90	2.26 *
Pb (IN)	-0.60	0.14	-0.19	4.31 **
Rb (IN)	0.06	-0.69	-0.21	0.10
S (as S) (IN)	1.14	0.16	0.74	1.12
Sr (IN)	-0.44	0.14	0.51	1.54
Ti (IN)	#	-0.68	#	-0.79
V (IN)	-0.54	0.10	-	0.61
Zn (IN)	0.99	1.10	0.97	1.19
Al (RT)	-0.60	0.03	-	0.15
Al (AE)	-0.49	1.59	1.33	3.51 **
Si (AE)	#	#	#	-
GPM-GROUP (143)				
Ca (IN)	0.99	-0.10	2.85 *	0.34
Cu (IN)	-0.04	0.30	3.35 **	-2.37 *
Fe (IN)	0.49	2.76 *	8.39 **	-1.60
K (IN)	-3.20 **	0.24	0.21	0.84
Mg (IN)	-0.04	-0.27	0.96	-0.24
Mn (IN)	-1.00	2.92 *	-0.52	-0.21
N - Kjeldahl (as N) (IN)	-0.74	0.29	0.11	-0.51
Na (IN)	2.73 *	1.88	3.70 **	-0.14
P (as P) (IN)	-0.19	3.14 **	5.92 **	0.10
Zn (IN)	1.16	-0.04	8.96 **	-0.13

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
KGZMB-P (150)				
Cd (IN)	<	-0.35	<	0.22
N - Kjeldahl (as N) (IN)	-0.61	-0.03	0.02	-0.67
ARCWSG (152)				
Ca (IN)	-0.54	0.22	-0.42	0.12
Cr (IN)	2.82 *	-0.42	-0.38	-0.25
Cu (IN)	-0.48	-0.71	-0.02	0.46
Fe (IN)	0.20	1.09	-0.16	0.14
K (IN)	0.79	0.56	0.51	0.43
Mg (IN)	-0.23	-0.95	-0.47	-0.77
Mn (IN)	-0.08	-0.08	-0.18	-0.18
Na (IN)	-0.58	-0.59	-0.47	-0.62
Ni (IN)	0.71	-0.11	0.51	0.53
P (as P) (IN)	0.21	0.31	0.38	-0.09
Pb (IN)	-	-3.94 **	6.23 **	3.37 **
S (as S) (IN)	-0.10	0.08	-0.21	-0.26
Zn (IN)	0.89	0.62	0.39	0.31
C - elementary (RT)	0.19	0.26	0.55	0.49
N - elementary (RT)	0.16	0.25	0.28	-0.25
Al (AE)	1.92	-0.30	1.56	0.12
IRRI (158)				
B (IN)	-2.71 *	4.22 **	1.65	0.72
Ca (IN)	-0.54	-0.71	-1.48	-1.22
Cu (IN)	-0.20	-1.77	-0.56	-0.86
Fe (IN)	0.74	-0.56	-0.48	-0.71
K (IN)	-0.40	-0.74	-0.77	-0.43
Mg (IN)	-0.78	-0.91	-0.84	-1.28
Mn (IN)	-0.26	-0.76	-0.73	-0.92
Mo (IN)	9.79 **	19.61 **	-1.07	-
N - Kjeldahl (as N) (IN)	0.93	0.02	0.17	0.54
Na (IN)	-0.28	1.61	0.74	-0.37
P (as P) (IN)	-1.01	-1.84	-1.35	-1.20
S (as S) (IN)	-1.12	-0.66	-0.39	-1.09
Zn (IN)	-0.79	-1.36	-0.53	-0.68
C - elementary (RT)	-0.82	-0.37	-0.52	-0.57
N - elementary (RT)	0.73	2.54 *	1.34	0.86
Al (AE)	-0.46	-0.08	-0.32	-0.37
ANALRESLAB (159)				
As (IN)	-0.30	0.25	-0.28	-0.15
B (IN)	-0.10	-0.93	-0.65	-0.59
Ca (IN)	-0.61	-0.67	-0.42	-0.79
Cd (IN)	-1.15	0.25	-0.13	-0.09
Cl (as Cl) (IN)	-0.19	-0.91	-0.72	-0.82
Co (IN)	-0.21	0.13	0.28	-0.14
Cr (IN)	-0.10	-0.39	-0.61	-0.07
Cu (IN)	0.02	-0.22	-1.24	-0.34
Fe (IN)	1.16	-0.45	-1.27	-0.87
I (IN)	#	#	#	#
K (IN)	-1.30	-1.64	-0.97	-0.45
Mg (IN)	-0.78	-1.07	-0.84	-0.59
Mn (IN)	-0.41	-0.32	-1.38	-1.31
Mo (IN)	0.09	0.44	0.69	-0.17
N - NO3 (as N) (IN)	#	-0.49	0.33	#
Na (IN)	<	-1.00	-1.04	-0.69
Ni (IN)	0.06	-0.24	0.43	0.21
P (as P) (IN)	-1.33	-0.37	-0.35	-0.02
Pb (IN)	-0.65	0.21	-0.27	0.20
S (as S) (IN)	-1.92	-1.99	-1.39	-1.29
Se (IN)	< #	1.76	-0.03	0.73
Zn (IN)	-0.27	-1.31	-1.13	-1.57
C - elementary (RT)	-2.27 *	-2.50 *	-1.04	-1.30
N - elementary (RT)	-1.84	-2.35 *	-1.34	-1.28
Al (AE)	0.77	-0.03	-0.15	0.67

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
IRNASE (164)				
B (IN)	-0.83	-0.56	-0.65	-0.84
Ba (IN)	<	-0.56	-0.54	-0.87
Ca (IN)	<	-1.00	-0.62	-0.96
Cd (IN)	4.48 **	1.77	2.23 *	2.05 *
Co (IN)	<	-1.18	-0.97	-1.00
Cr (IN)	-0.24	-0.58	0.18	-0.18
Cu (IN)	-0.63	-0.61	-0.10	0.00
Fe (IN)	3.79 **	-0.02	-0.11	-0.09
K (IN)	-0.17	-0.55	-1.95	1.30
Mg (IN)	0.07	-0.11	0.14	0.10
Mn (IN)	-0.04	-0.06	-0.68	-0.51
N - Kjeldahl (as N) (IN)	-1.24	0.05	0.60	-2.36 *
Na (IN)	0.94	1.60	0.24	-0.48
Ni (IN)	0.95	0.93	0.88	0.62
P (as P) (IN)	0.31	1.09	1.15	0.24
Pb (IN)	<	-1.21	<	2.39 *
S (as S) (IN)	0.39	1.05	1.19	0.11
Sr (IN)	-0.35	-0.61	-0.45	-0.40
Zn (IN)	-0.56	-0.24	-0.13	-0.19
Al (AE)	0.27	-0.38	0.10	0.20
SYNERS (166)				
B (IN)	1.12	-0.27	-0.06	-0.49
Ca (IN)	1.23	0.11	0.24	-0.14
Cl (as Cl) (IN)	3.26 **	-11.82 **	-5.65 **	-3.43 **
Cu (IN)	0.21	-1.23	-1.25	-2.00 *
Fe (IN)	-0.17	-1.10	-1.32	-1.75
K (IN)	-0.39	1.82	-2.27 *	-0.45
Mg (IN)	-2.66 *	-2.30 *	-1.27	-3.19 **
Mn (IN)	-0.23	-0.55	1.84	1.16
Mo (IN)	-0.45	-3.61 **	-1.83	-2.77 *
Na (IN)	-0.39	-1.91	2.06 *	-0.28
P (as P) (IN)	-0.63	-0.72	-0.71	-1.30
S (as S) (IN)	-1.39	-4.25 **	-3.25 **	-3.00 **
Zn (IN)	-0.58	-0.98	-0.31	-0.93
N - elementary (RT)	-0.38	-1.94	-0.14	0.19
BVO95MBPD (171)				
B (IN)	5.48 **	1.23	1.29	1.34
Ca (IN)	<	0.75	0.56	1.54
Cu (IN)	2.13 *	0.55	0.71	0.88
Fe (IN)	0.03	-1.40	-0.70	-1.07
K (IN)	0.58	0.36	0.29	0.67
Mg (IN)	1.02	0.29	0.74	0.67
Mn (IN)	-0.02	-1.04	-0.54	-0.66
N - Kjeldahl (as N) (IN)	0.01	0.45	0.52	-0.19
P (as P) (IN)	1.08	1.24	1.07	0.82
Zn (IN)	-0.35	-1.51	-1.08	-1.05
IRS (173)				
K (IN)	0.10	-0.25	0.01	-0.60
Na (IN)	<	0.32	-0.20	-0.80
P (as P) (IN)	0.62	0.43	0.15	0.10
N - elementary (RT)	-1.17	-2.24 *	-1.25	-1.03
Total ash (NUT)	-0.53	0.69	-0.07	1.36
SMBPLNUP (183)				
B (IN)	0.07	-0.12	-0.40	-0.55
Ca (IN)	1.82	-1.39	-0.71	-0.77
Cu (IN)	0.08	0.07	-0.90	-2.65 *
Fe (IN)	-1.07	-1.40	-1.40	-1.88
K (IN)	-1.12	-1.34	1.23	-1.26
Mg (IN)	-1.10	-1.07	-0.89	-1.28
Mn (IN)	-4.19 **	-2.14 *	-0.96	-2.36 *
N - Kjeldahl (as N) (IN)	-0.61	-1.48	-2.19 *	-0.51
Na (IN)	10.33 **	4.96 **	10.03 **	0.22

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
SMBPLNUP (183) (cont.)				
P (as P) (IN)	-1.74	-1.62	-1.02	-1.20
Zn (IN)	-1.82	0.23	8.33 **	-2.72 *
JYUIER (185)				
As (IN)	<	0.77	<	0.49
B (IN)	0.20	0.35	0.45	0.78
Ba (IN)	<	-0.72	-0.20	-0.57
Be (IN)	< #	< #	< #	-0.16
Ca (IN)	-0.51	0.81	1.06	1.45
Cd (IN)	<	<	<	-0.25
Co (IN)	<	-0.60	0.55	0.26
Cr (IN)	0.78	0.06	0.52	-0.40
Cu (IN)	-1.67	-0.94	-0.44	-0.12
Fe (IN)	0.44	-0.38	0.28	0.35
Hg (IN)	#	5.04 **	2.36 *	0.26
K (IN)	0.55	-0.06	-0.15	-0.06
Mg (IN)	1.45	1.49	1.67	2.05 *
Mn (IN)	0.09	-0.66	-1.15	-0.49
Mo (IN)	-1.61	-1.48	-0.41	-1.83
Na (IN)	<	-0.44	0.51	-0.42
Ni (IN)	0.04	0.73	0.71	1.30
P (as P) (IN)	1.31	1.53	1.40	1.39
Pb (IN)	<	-0.26	-0.22	-0.51
S (as S) (IN)	1.10	1.42	1.00	0.71
Sb (IN)	<	<	<	-0.90
Se (IN)	< #	0.45	<	0.10
Sn (IN)	< #	< #	< #	#
Sr (IN)	<	-0.70	-0.71	-0.36
Ti (IN)	#	-0.63	#	-0.69
V (IN)	<	-0.81	-0.34	-0.46
Zn (IN)	0.36	0.10	0.24	0.67
Al (AE)	<	-0.55	-0.03	0.76
IPULAB (186)				
B (IN)	<	0.97	1.35	1.79
Ca (IN)	<	0.31	0.40	0.82
Cu (IN)	-0.50	-0.10	0.83	0.44
Fe (IN)	0.16	0.58	0.43	0.54
K (IN)	0.43	0.40	0.78	0.74
Mg (IN)	0.17	0.13	0.69	0.79
Mn (IN)	<	0.14	0.31	0.77
Mo (IN)	<	<	<	<
N - Kjeldahl (as N) (IN)	0.01	0.77	0.24	-0.62
Na (IN)	<	-0.01	<	0.25
P (as P) (IN)	0.90	1.02	1.49	1.39
S (as S) (IN)	0.12	0.13	0.55	0.21
Zn (IN)	0.64	1.34	1.26	1.11
Al (AE)	<	1.02	-0.45	1.24
SAINTE-FOY (190)				
B (IN)	<	<	<	<
Ca (IN)	<	0.01	-0.05	0.27
Cu (IN)	<	<	<	<
Fe (IN)	<	0.91	1.71	1.32
K (IN)	0.20	-0.14	0.07	0.30
Mg (IN)	-0.25	0.29	0.25	0.79
Mn (IN)	<	1.04	0.07	0.39
N - Kjeldahl (as N) (IN)	-0.64	-0.49	-0.64	-0.56
Na (IN)	<	0.68	<	0.44
P (as P) (IN)	0.26	0.21	0.15	0.67
Zn (IN)	0.78	3.98 **	2.07 *	1.42
Al (RT)	<	-0.16	<	-0.45
C - elementary (RT)	0.67	0.50	0.45	0.55
N - elementary (RT)	0.06	-0.52	-0.07	-0.40
Al (AE)	<	2.41 *	<	3.20 **

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
SPAL (196)				
Ca (IN)	14.32 **	-2.56 *	8.35 **	-2.34 *
Fe (IN)	16.15 **	-3.10 **	4.09 **	-5.47 **
K (IN)	0.53	2.00 *	-1.36	0.99
Mg (IN)	-2.90 *	-2.75 *	-5.14 **	-3.23 **
Mn (IN)	111.72 **	89.32 **	2.64 *	5.54 **
N - Kjeldahl (as N) (IN)	4.54 **	7.76 **	3.31 **	4.59 **
Na (IN)	6.49 **	21.14 **	50.74 **	1.39
P (as P) (IN)	4.09 **	6.14 **	4.83 **	8.46 **
Zn (IN)	12.21 **	17.84 **	10.01 **	3.81 **
LQA-ATP (198)				
B (IN)	-0.08	-0.97	-2.01 *	-1.59
Ca (IN)	3.82 **	0.36	0.24	0.66
Cu (IN)	-1.12	0.18	-0.96	-1.68
Fe (IN)	1.91	-0.20	-0.10	0.07
K (IN)	-1.10	-1.33	-0.99	-1.57
Mg (IN)	-1.74	-1.47	-1.11	-1.28
Mn (IN)	-0.83	-1.54	-4.41 **	-12.33 **
N - Kjeldahl (as N) (IN)	3.08 **	0.15	-1.36	4.48 **
P (as P) (IN)	-0.51	-0.01	-0.35	-0.48
Zn (IN)	-0.28	0.09	-0.71	-0.46
FFEEBW (201)				
As (IN)	<	-0.52	<	0.47
B (IN)	0.52	-0.74	-0.46	-0.05
Ca (IN)	0.52	-1.37	0.63	-0.59
Cd (IN)	9.19 **	0.98	<	1.22
Co (IN)	<	-0.27	-1.44	-0.45
Cr (IN)	0.04	-0.03	-0.11	0.05
Cu (IN)	1.23	0.01	-0.32	0.03
Fe (IN)	0.86	0.43	0.64	0.37
K (IN)	1.18	-2.26 *	-2.99 *	2.11 *
Mg (IN)	1.45	0.13	0.63	1.02
Mn (IN)	19.38 **	-0.12	1.09	2.05 *
Mo (IN)	-0.98	-0.95	-0.15	-0.10
Na (IN)	-0.47	-0.83	-0.44	-1.02
Ni (IN)	-0.96	-1.94	-1.02	-3.00 *
P (as P) (IN)	0.08	-0.67	-0.43	-0.19
Pb (IN)	<	-1.99	7.53 **	-1.19
S (as S) (IN)	0.48	-0.29	0.25	0.11
Zn (IN)	-0.10	-0.93	-0.63	-0.49
Al (RT)	0.41	-0.69	0.22	-0.72
LAIMBURG (202)				
B (IN)	32.16 **	1.38	-8.54 **	1.73
Ca (IN)	85.80 **	2.08 *	-15.25 **	2.08 *
Cu (IN)	34.22 **	0.83	-8.80 **	2.59 *
Fe (IN)	8.67 **	1.49	-7.21 **	1.10
K (IN)	82.41 **	0.88	-13.03 **	0.30
Mg (IN)	18.44 **	1.49	-7.58 **	1.82
Mn (IN)	1992.53 **	2.54 *	-13.48 **	1.85
Na (IN)	-	-1.30	-	-0.98
P (as P) (IN)	-5.43 **	0.95	10.60 **	0.10
S (as S) (IN)	13.98 **	1.14	-7.14 **	0.01
Zn (IN)	-4.16 **	-2.05 *	1.91	0.25
N - elementary (RT)	32.61 **	0.76	-15.67 **	0.60
SEEDLING (203)				
Ca (IN)	9.47 **	-0.47	0.28	-0.15
K (IN)	0.84	0.40	0.51	0.88
Mg (IN)	0.02	0.38	1.02	0.71
Mn (IN)	5.19 **	1.27	1.07	1.17
N - Kjeldahl (as N) (IN)	1.78	2.11 *	2.47 *	1.46
P (as P) (IN)	0.48	0.15	-0.10	-0.16

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
QLDNR&M (204)				
B (IN)	-0.48	-0.38	-0.27	-0.30
Ca (IN)	0.17	-0.23	-0.12	-0.68
Cd (IN)	0.36	-0.35	0.08	0.64
Cl (as Cl) (IN)	-0.19	-2.15 *	-0.81	-3.43 **
Co (IN)	-0.09	-0.05	-0.27	-0.31
Cu (IN)	-0.23	-0.10	1.17	0.66
Fe (IN)	-0.83	-0.35	-0.11	-0.67
K (IN)	0.78	1.03	0.80	0.57
Mg (IN)	-0.67	-0.43	-0.13	-0.70
Mn (IN)	-0.28	-0.32	-0.31	-0.63
Mo (IN)	2.17 *	0.65	0.49	1.17
N - Kjeldahl (as N) (IN)	-0.36	1.09	1.17	-0.67
Na (IN)	1.06	-1.38	-0.51	-1.32
P (as P) (IN)	-0.19	-0.52	-0.43	-0.62
Pb (IN)	-0.61	0.31	-0.07	-0.29
S (as S) (IN)	-0.50	-1.03	-0.44	-1.19
Zn (IN)	-0.52	-0.51	-0.34	-0.29
C - elementary (RT)	-1.31	-1.10	-0.66	-3.94 **
N - elementary (RT)	0.35	0.34	-0.17	-2.16 *
Al (AE)	-0.77	0.83	0.14	0.91
DANRLAB (206)				
B (IN)	1.97	-0.38	-0.32	-0.02
Ca (IN)	<	0.38	0.60	0.43
Cl (as Cl) (IN)	-0.54	-0.71	-0.05	0.16
Cu (IN)	-0.08	0.71	0.75	0.40
Fe (IN)	-0.68	-0.95	-0.15	-0.51
K (IN)	1.03	1.09	0.84	0.50
Mg (IN)	0.60	-0.03	0.20	-0.13
Mn (IN)	0.09	0.61	1.54	0.58
N - NH4 (as N) (IN)	#	#	#	#
N - NO3 (as N) (IN)	< #	-0.11	-0.82	< #
Na (IN)	-0.51	-0.01	-0.48	-0.23
P (as P) (IN)	1.03	0.43	0.40	-0.05
S (as S) (IN)	0.02	-0.53	-0.23	-0.71
Zn (IN)	0.15	-0.71	-0.50	-0.20
C - elementary (RT)	0.15	0.10	1.08	0.17
N - elementary (RT)	-1.03	-1.32	0.05	0.01
C.S.S. (209)				
K (IN)	0.15	0.55	-0.78	0.46
N - Kjeldahl (as N) (IN)	1.23	-0.10	-0.37	0.70
P (as P) (IN)	0.38	0.32	1.14	2.94 *
MERLEWOOD (217)				
C - elementary (RT)	0.59	0.40	0.50	0.56
N - elementary (RT)	0.35	1.23	0.50	0.09
delta 13C (OD)	#	#	#	#
delta 15N (OD)	#	#	#	#
DATE (218)				
B (IN)	-0.24	-0.68	-0.73	-0.40
Ba (IN)	0.45	-0.01	2.05 *	1.92
Ca (IN)	0.20	-0.18	0.53	0.59
Cd (IN)	-0.74	6.93 **	8.49 **	-2.71 *
Co (IN)	1.63	-1.33	5.44 **	-1.75
Cr (IN)	-0.63	-1.44	-1.36	-0.16
Cu (IN)	1.21	0.74	-0.47	0.29
Fe (IN)	1.13	-0.02	0.86	0.06
K (IN)	-0.55	0.39	-0.27	0.52
Mg (IN)	-0.25	0.53	0.96	0.56
Mn (IN)	0.25	1.20	2.49 *	1.09
N - Kjeldahl (as N) (IN)	-0.54	-0.19	-0.47	-0.35
N - NH4 (as N) (IN)	#	#	#	#
N - NO3 (as N) (IN)	#	-0.95	0.59	#
Na (IN)	0.55	6.73 **	1.04	2.23 *

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
DATE (218) (cont.)				
P (as P) (IN)	0.35	1.02	0.99	0.57
S (as S) (IN)	0.92	0.22	1.10	-0.39
Sr (IN)	0.85	-0.03	0.70	-0.41
V (IN)	0.13	-0.11	<	-0.34
Zn (IN)	0.83	0.15	1.27	0.59
ALMP1011 (219)				
B (IN)	<	1.26	1.23	1.13
Ca (IN)	<	0.13	0.81	0.67
Cu (IN)	<	-3.56 **	-3.78 **	-4.32 **
Fe (IN)	-2.15 *	-3.06 **	-3.92 **	-4.52 **
K (IN)	-1.07	-0.63	-0.72	-1.65
Mg (IN)	-0.57	-0.67	-1.00	-1.05
Mn (IN)	<	-0.95	-5.99 **	-6.33 **
Mo (IN)	-7.26 < **	-7.13 < **	-5.83 < **	-8.10 < **
N - Kjeldahl (as N) (IN)	-0.47	0.98	0.03	0.68
Na (IN)	<	-6.54 < **	<	-7.63 < **
P (as P) (IN)	0.67	1.02	1.07	1.54
S (as S) (IN)	0.74	-1.03	-0.59	0.21
Zn (IN)	-0.87	-1.70	-4.09 **	-1.26
LABORECOF (221)				
C - elementary (RT)	-0.13	-0.29	-0.08	0.17
N - elementary (RT)	-0.66	0.67	0.17	-0.04
VILJAVUUSP (228)				
B (IN)	0.50	-0.73	-1.15	-0.82
Ca (IN)	-0.22	-0.89	0.02	0.18
Cu (IN)	-1.92	1.64	-1.97	-2.49 *
Fe (IN)	1.46	1.01	-0.50	0.17
K (IN)	0.39	0.04	0.23	0.17
Mg (IN)	-0.07	-0.10	-0.37	-0.23
Mn (IN)	0.13	0.26	-0.46	-0.09
N - Kjeldahl (as N) (IN)	0.35	0.47	0.47	-0.04
Na (IN)	1.55	2.65 *	3.33 **	0.54
P (as P) (IN)	0.53	0.45	-0.03	-0.09
S (as S) (IN)	0.17	-0.08	0.00	-0.29
Zn (IN)	1.66	3.49 **	2.43 *	0.37
Al (RT)	-0.36	-0.94	1.18	-1.32
N - elementary (RT)	-2.69 *	-3.31 **	-1.67	-1.55
GUYLAB (231)				
B (IN)	-0.71	-0.98	-0.34	-0.83
Ca (IN)	77.42 **	-6.54 **	-4.97 **	1.74
K (IN)	2.15 *	-1.92	-3.09 **	3.79 **
Mg (IN)	16.21 **	-2.19 *	-3.39 **	7.33 **
Mn (IN)	37.89 **	-7.79 **	-12.79 **	-12.37 **
N - Kjeldahl (as N) (IN)	0.38	0.27	0.62	2.65 *
P (as P) (IN)	-0.56	5.41 **	0.07	0.96
S (as S) (IN)	-7.52 **	5.56 **	-1.93	-1.99
Zn (IN)	-0.49	40.58 **	6.46 **	-8.41 **
KERICHO (236)				
Ca (IN)	-0.19	0.16	1.03	0.25
Cu (IN)	1.27	-0.01	-1.13	-1.98
Fe (IN)	0.43	-0.17	-0.41	0.30
K (IN)	-0.25	0.67	0.36	-0.50
Mg (IN)	-0.57	-0.27	-0.56	-0.70
Mn (IN)	1.19	0.38	0.84	-0.36
N - Kjeldahl (as N) (IN)	0.89	0.77	0.93	0.60
Na (IN)	-0.41	0.84	0.31	-0.30
P (as P) (IN)	0.62	0.65	1.07	1.54
Zn (IN)	-0.48	0.57	0.02	-0.95
Al (AE)	0.97	0.75	3.92 **	-0.45

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
RIOJALAB (238)				
B (IN)	2.43 *	1.33	1.09	1.19
Ca (IN)	-0.39	-0.32	-0.52	-0.07
Cu (IN)	-0.12	0.52	0.50	0.89
Fe (IN)	-0.24	0.32	0.70	-0.07
K (IN)	0.34	0.68	0.65	0.48
Mg (IN)	0.51	0.10	0.09	-0.43
Mn (IN)	0.83	0.24	-0.44	-0.55
Na (IN)	-0.14	0.43	0.39	-0.26
P (as P) (IN)	1.55	0.43	0.43	0.31
Zn (IN)	0.95	-0.25	-0.19	0.59
N - elementary (RT)	-9.11 **	5.91 **	-12.94 **	21.29 **
CHRON (239)				
B (IN)	-0.64	-0.05	-0.68	-0.25
Ca (IN)	0.60	0.17	-1.78	-0.06
Cd (IN)	2.57 *	-0.84	1.25	-1.24
Co (IN)	2.98 *	-0.87	-0.11	-0.31
Cr (IN)	-0.50	-0.83	-0.57	-1.26
Cu (IN)	2.07 *	1.30	-0.50	-2.71 *
Fe (IN)	0.49	0.85	1.65	-0.28
K (IN)	-1.35	0.79	-0.66	-1.57
Mg (IN)	-0.46	-1.23	-1.92	-1.39
Mn (IN)	0.03	-0.40	0.20	-0.54
Mo (IN)	-3.82 **	-0.87	-2.79 *	-0.90
N - Kjeldahl (as N) (IN)	-1.17	-0.67	-0.90	-1.26
Na (IN)	1.13	10.54 **	9.21 **	1.91
Ni (IN)	5.18 **	1.10	1.15	0.55
P (as P) (IN)	0.03	-0.52	-1.61	-0.91
Pb (IN)	0.48	0.60	11.68 **	-1.41
S (as S) (IN)	-8.05 **	-1.07	-4.16 **	-2.09 *
Se (IN)	#	-3.95 **	-0.12	-2.47 *
Zn (IN)	0.64	-1.18	-1.24	0.05
Al (AE)	0.31	0.24	1.83	-2.11 *
LASUTEVEA (241)				
B (IN)	-0.45	0.87	-0.88	-0.39
Ca (IN)	-0.71	-0.12	-0.37	-0.48
Cu (IN)	1.18	3.29 **	-0.16	1.41
Fe (IN)	-0.77	-0.09	-0.41	-0.17
K (IN)	-0.27	0.02	0.21	-0.28
Mg (IN)	-0.89	-0.59	-0.84	-0.93
Mn (IN)	-0.83	0.19	-0.89	-0.44
P (as P) (IN)	-0.70	-0.08	0.23	1.54
Zn (IN)	0.38	3.51 **	0.55	0.09
C - elementary (RT)	-1.04	-0.29	-0.08	-0.55
N - elementary (RT)	-1.79	-3.16 **	-2.15 *	-0.83
SMART (246)				
B (IN)	-1.46	-1.99	-0.56	-0.20
Ca (IN)	1.17	-0.07	0.86	-0.09
Cl (as Cl) (IN)	7.54 **	0.67	0.34	1.42
Cu (IN)	-0.84	0.56	0.23	-1.33
Fe (IN)	-0.95	0.14	0.11	-6.83 **
K (IN)	-0.96	0.59	3.84 **	-1.61
Mg (IN)	1.24	1.32	0.76	1.22
Mn (IN)	1.57	1.24	-0.08	0.17
N - Kjeldahl (as N) (IN)	1.93	1.40	1.27	1.52
Na (IN)	1.11	0.88	1.29	-0.17
P (as P) (IN)	-1.72	-0.47	-0.39	0.25
Zn (IN)	-0.92	-0.68	-1.03	-0.59
MONICA (248)				
B (IN)	<	0.48	0.64	0.42
Ca (IN)	-0.54	-0.15	0.29	0.28
Cd (IN)	<	<	<	<
Co (IN)	<	<	<	<

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
MONICA (248) (cont.)				
Cr (IN)	<	0.38	1.29	0.07
Cu (IN)	<	-0.42	0.41	-0.01
Fe (IN)	-0.73	1.06	0.07	0.90
K (IN)	0.20	0.30	0.53	0.62
Mg (IN)	-0.46	0.37	1.01	-0.47
Mn (IN)	-0.43	-0.26	0.85	0.56
Mo (IN)	<	<	<	<
Na (IN)	<	-0.08	-0.56	1.81
Ni (IN)	<	0.71	<	-1.57
P (as P) (IN)	-0.01	-0.08	0.74	0.24
Pb (IN)	<	<	<	-5.64 < **
S (as S) (IN)	0.39	0.49	0.95	0.31
Zn (IN)	0.53	-0.60	0.83	0.95
REYEPS (249)				
B (IN)	0.02	1.60	0.99	0.94
Ca (IN)	-0.54	-13.38 **	0.33	-13.68 **
Cu (IN)	-0.14	-1.52	-2.81 *	-1.45
Fe (IN)	-	1.42	0.86	1.22
K (IN)	1.05	-14.23 **	-13.24 **	0.81
Mg (IN)	0.71	1.17	0.96	0.67
Mn (IN)	-	0.58	0.07	0.08
Mo (IN)	-7.28 **	-7.14 **	-5.84 **	-8.13 **
Na (IN)	-	0.42	2.60 *	0.58
P (as P) (IN)	1.17	1.75	1.32	0.53
Pb (IN)	<	-0.35	<	-0.87
S (as S) (IN)	0.48	1.42	0.90	0.31
Zn (IN)	0.53	0.77	0.45	1.07
Al (AE)	1.31	2.75 *	1.36	3.27 **
ABMCE (250)				
As (IN)	<	0.39	<	-0.04
B (IN)	<	-0.01	-0.06	0.09
Be (IN)	< #	#	< #	1.76
Ca (IN)	<	-0.16	-0.26	-0.12
Cd (IN)	2.57 *	0.98	<	0.33
Co (IN)	1.75	-0.38	0.67	0.13
Cr (IN)	<	-0.51	-0.05	-0.40
Cu (IN)	-0.23	0.07	0.48	0.19
Fe (IN)	-0.04	0.16	-0.41	-0.03
Hg (IN)	< #	0.08	0.13	0.22
K (IN)	-0.72	-0.25	-0.30	-0.35
Mg (IN)	-0.78	-1.15	-0.24	-0.93
Mn (IN)	0.15	0.46	0.16	0.12
Mo (IN)	0.59	-0.30	-0.17	-0.55
N - Kjeldahl (as N) (IN)	-0.49	0.21	-0.22	-0.19
Na (IN)	<	<	<	-0.87
Ni (IN)	<	0.06	0.31	0.10
P (as P) (IN)	-0.01	0.29	-0.18	-0.19
Pb (IN)	<	-0.07	<	-0.05
S (as S) (IN)	0.65	0.03	-0.24	-0.79
V (IN)	<	-0.40	-0.17	-0.26
Zn (IN)	0.83	0.50	-0.13	0.05
IRQ-1992-S (251)				
As (IN)	1.58	0.63	-0.07	0.56
Ba (IN)	0.27	-0.54	-0.32	-2.27 *
Cd (IN)	<	-0.92	<	-0.41
Cr (IN)	0.63	0.59	-0.73	-0.15
Cu (IN)	2.93 *	-0.17	-2.26 *	-0.98
Fe (IN)	0.35	-0.04	-1.41	0.03
K (IN)	-1.00	0.36	0.44	-0.72
Mn (IN)	-0.52	-1.61	-4.41 **	-0.59
Pb (IN)	0.42	-2.91 *	0.18	-0.58
Sr (IN)	-0.30	-1.30	-1.94	-1.61
Zn (IN)	0.41	0.78	0.81	0.35

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
UPPSALA (252)				
As (IN)	<	-1.44	<	-0.76
B (IN)	45.14 **	4.08 **	6.60 **	6.52 **
Ca (IN)	-0.54	-0.48	-0.48	-0.22
Cd (IN)	-0.74	-0.33	<	0.12
Co (IN)	<	-1.17	-0.63	-0.54
Cr (IN)	<	-1.00	-1.50	-0.93
Cu (IN)	-0.04	-1.33	0.25	-0.05
Fe (IN)	2.11 *	-0.30	0.34	-0.04
K (IN)	0.28	0.06	-0.07	-0.48
Mg (IN)	0.28	0.45	-0.24	0.21
Mn (IN)	0.64	0.00	0.03	0.18
Mo (IN)	0.34	-0.21	0.31	0.03
N - NH4 (as N) (IN)	#	#	#	#
N - NO3 (as N) (IN)	#	0.99	0.30	#
Na (IN)	-0.62	-0.89	-1.02	-1.06
Ni (IN)	-0.73	-0.47	-0.83	-0.18
P (as P) (IN)	-0.92	-0.45	-0.18	-0.19
Pb (IN)	-0.48	0.16	0.09	0.16
S (as S) (IN)	0.48	-0.47	-0.10	0.01
Zn (IN)	0.11	0.70	0.18	0.34
C - elementary (RT)	-0.41	-0.29	-1.62	-2.70 *
N - elementary (RT)	-0.16	-0.67	0.84	-0.78
Al (AE)	-0.73	-0.71	-0.68	0.09
PINAGRO (256)				
B (IN)	0.03	0.43	1.88	0.41
Ca (IN)	-0.42	-1.65	-1.57	-2.16 *
Cu (IN)	1.21	1.73	-11.14 **	-3.61 **
Fe (IN)	-0.15	-0.82	-9.68 **	-1.86
K (IN)	-4.30 **	-1.95	-1.13	-5.30 **
Mg (IN)	-0.36	0.37	0.31	-0.02
Mn (IN)	2.32 *	0.75	-0.18	-1.71
N - Kjeldahl (as N) (IN)	-1.12	-1.56	-1.29	-0.99
P (as P) (IN)	-1.38	-1.69	-1.61	-1.63
Zn (IN)	0.70	2.37 *	-8.41 **	-1.05
DAR (258)				
Ca (IN)	0.17	-2.75 *	-3.20 **	-4.75 **
Cu (IN)	6.09 **	10.43 **	2.20 *	2.44 *
Fe (IN)	2.06 *	-0.37	41.49 **	4.67 **
K (IN)	-2.00	-0.43	-0.50	-1.69
Mg (IN)	-2.90 *	-3.55 **	-3.50 **	-3.23 **
Mn (IN)	9.88 **	3.96 **	1.50	1.59
N - Kjeldahl (as N) (IN)	-0.36	0.05	-0.88	-0.51
Na (IN)	-	0.35	3.88 **	-3.13 **
P (as P) (IN)	-2.29 *	-0.45	-1.86	-3.08 **
Zn (IN)	0.71	-0.17	1.71	1.88
ADF-ash-free (NUT)	#	#	#	#
Crude fibre (NUT)	0.68	3.10 **	1.67	0.64
NDF-ash-free (NUT)	#	#	#	#
Total ash (NUT)	-0.37	-0.46	-0.35	0.20
Total fat (NUT)	#	#	#	#
RIOGLAB (264)				
Ag (IN)	< #	#	< #	#
As (IN)	-0.94	-0.45	-0.10	-0.35
Ba (IN)	-0.36	-0.42	-0.55	-1.25
Be (IN)	< #	#	< #	-0.03
Bi (IN)	< #	#	< #	#
Ca (IN)	-0.47	-0.81	-0.78	-0.40
Cd (IN)	-0.34	0.16	-0.20	-0.67
Co (IN)	-0.32	-0.11	0.61	-0.09
Cr (IN)	-0.48	-0.64	0.64	0.31
Cs (IN)	#	-2.20 *	-0.17	-2.09 *
Cu (IN)	-0.53	0.41	-1.02	-0.64
Fe (IN)	0.01	-0.17	-0.21	0.20

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
RIOGLAB (264) (cont.)				
Hg (IN)	< #	0.06	-0.17	0.52
K (IN)	-1.80	-0.18	0.05	0.91
Li (IN)	#	#	#	#
Mg (IN)	-0.36	-0.59	-0.40	-0.24
Mn (IN)	-0.48	-0.84	-1.00	-1.04
Mo (IN)	-0.10	0.02	0.86	0.31
Na (IN)	1.10	-0.31	-0.18	-0.91
Ni (IN)	-0.69	-0.18	0.29	0.12
Pb (IN)	-0.45	0.71	0.12	-1.08
Rb (IN)	-0.63	-1.40	-0.81	-1.77
S (as S) (IN)	-1.30	-0.80	-1.14	0.01
Sb (IN)	<	-0.75	0.80	-0.65
Se (IN)	#	-0.69	-0.45	-0.73
Sn (IN)	#	#	#	#
Sr (IN)	-0.42	-0.56	-0.80	-0.83
V (IN)	<	-0.45	0.30	-0.18
Zn (IN)	-1.06	0.03	-0.29	-1.00
Al (RT)	-0.65	-0.29	-0.79	-0.11
C - elementary (RT)	-0.77	-0.41	0.12	-0.22
N - elementary (RT)	-1.50	-1.68	-0.67	-0.16
ERSAFVGSCA (265)				
B (IN)	5.25 **	-2.09 *	-1.71	-1.02
Ca (IN)	-0.97	-0.87	-4.00 **	-0.59
Cu (IN)	-3.12 **	-1.91	-1.59	-1.44
Fe (IN)	0.14	0.86	0.16	0.20
K (IN)	1.35	-1.03	-1.09	4.40 **
Mg (IN)	0.39	0.21	-0.02	0.67
Mn (IN)	-2.67 *	-4.66 **	-3.34 **	-4.56 **
N - Kjeldahl (as N) (IN)	0.77	0.93	0.43	1.08
Na (IN)	3.05 **	1.82	2.07 *	0.51
P (as P) (IN)	-0.88	-0.59	-0.43	6.01 **
Zn (IN)	1.50	-0.51	-0.03	0.78
C - elementary (RT)	-2.76 *	-2.95 *	-2.01 *	-1.72
N - elementary (RT)	0.01	-0.78	-0.67	0.09
LABVAL (266)				
B (IN)	0.24	0.39	-0.11	0.27
Ca (IN)	-0.51	0.36	-0.96	0.25
Cd (IN)	<	2.70 *	<	-0.04
Cr (IN)	<	-0.67	-0.45	-0.64
Cu (IN)	-0.29	-0.31	-0.67	-0.07
Fe (IN)	-0.33	-0.60	-0.89	-0.05
K (IN)	0.85	0.97	0.95	0.57
Mg (IN)	0.17	0.13	0.03	-0.02
Mn (IN)	-0.19	-0.90	-0.02	0.44
Na (IN)	<	-0.06	-0.61	-0.33
Ni (IN)	<	-0.48	-0.16	-0.79
P (as P) (IN)	0.44	0.36	-0.18	-0.13
Pb (IN)	<	<	<	-0.59
S (as S) (IN)	-0.04	-0.29	-0.39	-0.49
Zn (IN)	-0.06	-0.44	-0.55	-0.07
C - elementary (RT)	0.59	0.40	0.70	0.63
N - elementary (RT)	-0.33	0.00	0.84	0.71
Al (AE)	0.16	0.03	-0.61	-0.21
LUARE (269)				
Ca (IN)	<	1.01	0.26	0.71
Cd (IN)	<	<	<	-0.72
Cl (as Cl) (IN)	-0.19	-0.02	0.12	0.95
Cu (IN)	0.17	0.23	0.82	0.83
Fe (IN)	0.14	-0.02	0.57	0.20
K (IN)	-0.57	0.36	0.05	0.67
Mg (IN)	0.49	0.29	0.36	0.44
Mn (IN)	0.36	0.38	0.35	0.82
P (as P) (IN)	1.99	1.09	-1.44	0.82

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
LUARE (269) (cont.)				
Pb (IN)	<	1.56	<	0.61
Rb (IN)	<	<	0.37	0.18
S (as S) (IN)	-0.06	1.60	0.05	1.11
Sr (IN)	<	0.53	-0.15	0.35
Zn (IN)	-0.35	-1.04	-1.34	-0.31
Al (RT)	<	1.49	<	0.53
TECHHK (270)				
Ag (IN)	#	#	#	#
As (IN)	3.25 **	0.30	0.09	-0.21
Ba (IN)	-0.57	-0.57	0.30	-0.03
Be (IN)	#	#	#	-0.07
Cd (IN)	0.14	0.04	-0.41	0.38
Co (IN)	-0.43	-0.53	0.05	-0.07
Cr (IN)	-0.67	-0.58	0.21	-0.33
Cu (IN)	-0.26	-0.14	0.48	0.24
Hg (IN)	#	-0.13	-0.46	-0.64
Mn (IN)	-0.61	-0.29	-0.02	0.27
Mo (IN)	-0.70	-0.07	0.01	-0.38
Ni (IN)	-0.45	-0.46	0.37	0.20
Pb (IN)	-0.58	-0.33	-0.15	-0.04
Sb (IN)	-0.46	-0.09	0.08	0.56
Sn (IN)	#	#	#	#
V (IN)	0.77	-0.58	1.22	-0.31
Zn (IN)	-0.06	-0.37	-0.13	0.02
LAF (273)				
B (IN)	3.71 **	0.58	0.85	0.94
Ca (IN)	0.99	0.31	0.87	0.86
Cl (as Cl) (IN)	0.81	0.25	-20.85 **	-2.77 *
Cu (IN)	2.61 *	0.13	0.98	0.60
Fe (IN)	-0.15	-0.78	0.18	-0.21
K (IN)	-0.22	-1.60	-1.19	-0.31
Mg (IN)	1.02	0.45	0.31	1.02
Mn (IN)	0.83	0.52	0.88	1.14
Mo (IN)	-	4.36 **	5.30 **	9.96 **
N - Kjeldahl (as N) (IN)	-0.07	0.19	-0.28	-0.35
Na (IN)	-	-	-	2.20 *
P (as P) (IN)	0.44	0.29	-0.18	-0.19
S (as S) (IN)	0.48	0.31	0.55	0.71
Zn (IN)	1.55	1.12	0.92	1.54
N - elementary (RT)	0.51	0.59	1.31	0.84
MELIPLANT (274)				
Ca (IN)	-0.19	-0.23	-0.28	-0.40
Cu (IN)	0.88	-0.24	-0.56	-0.01
Mg (IN)	-0.46	0.13	0.14	0.79
N - Kjeldahl (as N) (IN)	1.11	-0.21	0.26	1.04
P (as P) (IN)	-1.47	0.07	0.40	0.53
S (as S) (IN)	0.12	0.26	-0.34	1.81
IUNGPUL (275)				
As (IN)	1.10	-1.38	-0.85	-0.50
Ca (IN)	0.13	-0.23	-0.89	-0.86
Cd (IN)	0.17	-0.50	<	-0.72
Cr (IN)	1.41	-0.25	-1.19	-0.44
Cu (IN)	0.48	0.39	0.59	0.23
Fe (IN)	1.22	0.30	-0.80	0.30
Hg (IN)	< #	-0.74	-1.09	1.46
K (IN)	0.53	-0.06	0.05	0.28
Mg (IN)	0.39	1.01	1.72	0.79
Mn (IN)	0.37	-0.32	0.98	0.69
Mo (IN)	-0.19	-0.17	-0.39	-0.38
N - Kjeldahl (as N) (IN)	-0.11	-0.43	-0.22	-1.25
Na (IN)	<	-0.44	<	-0.80
Ni (IN)	0.99	-0.33	-0.70	0.22

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
IUNGPUL (275) (cont.)				
P (as P) (IN)	-0.29	-1.10	-1.44	-1.49
Pb (IN)	0.54	-0.53	3.12 **	0.75
S (as S) (IN)	-0.54	1.23	1.39	-0.49
Se (IN)	< #	<	64.85 **	<
Zn (IN)	0.62	0.36	0.39	0.76
C - elementary (RT)	-0.04	-0.64	-0.37	-0.16
N - elementary (RT)	0.35	0.78	0.09	0.46
VICTORY (597)				
As (IN)	2.24 *	-7.55 **	2.65 *	-4.42 **
Ba (IN)	0.43	2.04 *	1.66	2.57 *
Be (IN)	#	#	#	1.88
Ca (IN)	2.05 *	0.75	1.15	-0.68
Co (IN)	1.26	2.72 *	4.42 **	2.32 *
Cr (IN)	4.35 **	3.37 **	2.72 *	1.10
Cs (IN)	#	-1.07	-1.23	0.80
Cu (IN)	-0.63	0.62	-1.59	0.28
Fe (IN)	9.52 **	14.96 **	27.93 **	5.42 **
Ga (IN)	#	#	#	#
K (IN)	1.23	2.00 *	0.36	1.40
Mg (IN)	1.98	3.01 **	1.99	2.74 *
Mn (IN)	0.64	3.10 **	3.69 **	4.09 **
Mo (IN)	0.88	2.15 *	1.32	1.86
Na (IN)	-0.29	1.18	0.91	3.36 **
Ni (IN)	6.28 **	8.43 **	5.04 **	4.62 **
P (as P) (IN)	-0.06	-0.74	-2.36 *	-1.35
Pb (IN)	2.06 *	-3.79 **	14.57 **	-8.75 **
Rb (IN)	1.11	1.20	-0.05	1.01
Sb (IN)	0.93	-2.57 *	-0.44	-0.73
Sn (IN)	#	#	#	#
Sr (IN)	-0.37	2.05 *	0.95	0.89
Ti (IN)	#	0.88	#	1.06
V (IN)	2.85 *	4.54 **	17.39 **	4.51 **
Zn (IN)	-0.69	0.77	-0.45	0.19
Al (RT)	15.22 **	1.50	1.20	1.54
Si (RT)	#	#	#	#
WELLAB (714)				
As (IN)	<	-0.20	<	-0.67
Cu (IN)	-1.35	-1.39	-1.81	-0.22
Hg (IN)	< #	<	<	-3.24 **
Pb (IN)	<	0.42	-0.78	-1.05
Total ash (NUT)	0.75	-0.93	-0.44	-1.39
SeqBioMpl (837)				
C - elementary (RT)	-0.95	-0.85	-0.51	-0.45
N - elementary (RT)	1.35	0.25	-1.13	1.04
FOODCHEM (847)				
As (IN)	2.99 *	-1.25	23.05 **	-3.84 **
Ca (IN)	-0.57	3.41 **	1.85	3.10 **
Cd (IN)	-2.99 *	-5.21 **	-0.74	-7.42 **
Co (IN)	-0.05	-0.49	-0.98	-0.29
Cr (IN)	-0.16	-0.46	-0.38	-0.80
Cu (IN)	-0.63	-0.01	-0.33	-0.13
Fe (IN)	-0.26	0.10	0.32	0.77
K (IN)	-1.27	-1.18	-0.42	-1.23
Li (IN)	-	#	#	#
Mg (IN)	0.60	0.13	0.42	-0.02
Mn (IN)	-0.77	-1.21	0.55	-0.09
Mo (IN)	2.06 *	1.61	-1.02	-0.38
N - Kjeldahl (as N) (IN)	-0.17	-0.15	0.56	-0.19
Na (IN)	-0.46	-1.79	0.03	-1.58
Ni (IN)	-0.31	-0.53	5.99 **	-0.89
P (as P) (IN)	0.12	-0.23	-0.10	1.68
Pb (IN)	0.91	-1.68	11.03 **	-1.57

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
FOODCHEM (847) (cont.)				
Sb (IN)	21.24 **	11.23 **	24.16 **	-0.04
Zn (IN)	0.20	1.29	1.03	0.70
Total ash (NUT)	-0.45	1.07	5.17 **	-0.50
Total fat (NUT)	#	#	#	#
AFBI (851)				
Ca (IN)	-	1.40	0.35	1.45
K (IN)	2.51 *	2.37 *	1.11	1.69
Mg (IN)	7.18 **	0.85	-0.56	1.71
P (as P) (IN)	6.09 **	1.60	0.32	0.38
S (as S) (IN)	0.83	1.88	0.60	0.81
SPASL (855)				
As (IN)	-	3.64 **	30.27 **	-
B (IN)	1.29	0.58	0.64	0.65
Ca (IN)	0.00	-0.16	-0.52	0.22
Cd (IN)	-	1.58	10.11 **	-1.21
Co (IN)	35.91 **	2.68 *	-4.72 **	13.35 **
Cr (IN)	0.16	-0.69	-1.58	-0.78
Cu (IN)	10.60 **	8.63 **	4.22 **	1.94
Fe (IN)	6.17 **	-0.13	-0.03	-1.19
K (IN)	-0.11	-0.21	-0.58	-0.06
Mg (IN)	-0.37	-0.26	-0.44	-0.07
Mn (IN)	0.42	0.15	-0.06	0.19
Mo (IN)	8.09 **	3.22 **	4.00 **	13.58 **
Na (IN)	-0.42	-0.55	0.17	-0.56
Ni (IN)	-0.50	0.16	-1.64	0.70
P (as P) (IN)	0.06	0.14	0.01	-0.11
Pb (IN)	11.99 **	10.59 **	31.07 **	0.77
S (as S) (IN)	-0.14	-0.04	0.12	-0.32
Se (IN)	-	-0.66	160.68 **	-
Sr (IN)	38.63 **	36.97 **	256.59 **	463.57 **
Zn (IN)	-10.72 **	24.24 **	2.23 *	-5.42 **
C - elementary (RT)	-0.93	-1.32	-1.00	-0.65
N - elementary (RT)	-0.31	-0.31	-0.35	-0.86
Al (AE)	-0.03	-0.73	-0.40	-1.13
PASCAAnalab (870)				
B (IN)	1.01	-0.02	-0.35	0.23
Ca (IN)	0.72	-0.29	0.05	-0.10
Cu (IN)	6.82 **	1.02	0.69	-0.10
Fe (IN)	0.19	0.19	0.68	-0.47
K (IN)	-0.58	-1.03	-0.70	-0.01
Mg (IN)	-1.92	0.06	-0.06	-0.38
Mn (IN)	1.24	-0.04	-0.62	-0.85
N - Kjeldahl (as N) (IN)	0.71	0.95	0.54	0.06
P (as P) (IN)	-1.96	-0.59	1.07	-0.05
S (as S) (IN)	-2.93 *	0.29	-0.48	0.58
Zn (IN)	-1.04	-0.39	-1.11	-1.24
IOPRI (880)				
B (IN)	3.47 **	0.09	-5.20 **	-2.98 *
Ca (IN)	3.00 *	1.91	1.42	6.67 **
Cu (IN)	10.59 **	2.23 *	0.44	-1.57
Fe (IN)	6.26 **	-0.45	-0.05	-1.40
K (IN)	-2.83 *	-2.83 *	-0.47	-0.35
Mg (IN)	4.00 **	7.49 **	4.71 **	5.84 **
Mn (IN)	-1.59	0.25	-1.06	-0.40
N - Kjeldahl (as N) (IN)	-0.07	-0.49	-0.63	3.95 **
P (as P) (IN)	-10.76 **	-1.25	-1.94	-2.79 *
Zn (IN)	2.02 *	0.26	-4.90 **	-4.71 **
LSF (895)				
B (IN)	2.40 *	1.01	-0.91	0.69
Ca (IN)	0.17	0.42	-0.19	0.80
Cu (IN)	0.57	-0.45	0.02	0.30

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
LSF (895) (cont.)				
Fe (IN)	1.23	0.30	0.08	0.64
K (IN)	0.78	0.79	0.76	0.81
Mg (IN)	0.07	0.45	0.31	0.21
Mn (IN)	2.03 *	1.33	-0.98	0.57
Na (IN)	0.02	-0.17	-0.57	-0.12
P (as P) (IN)	-0.24	1.38	-1.02	-1.20
S (as S) (IN)	-0.86	1.97	-0.84	1.81
Zn (IN)	-0.10	1.44	-0.66	0.15
Al (RT)	0.33	-1.14	-0.22	-1.00
C - elementary (RT)	-1.68	-2.26 *	-1.72	-1.40
N - elementary (RT)	0.51	0.11	0.09	1.09
TLR (900)				
Br (IN)	<	2.31 *	0.75	<
Cr (IN)	<	<	<	<
F (IN)	< #	#	< #	#
V (IN)	<	<	<	-0.10
RF-R&D (905)				
Ca (IN)	-0.41	0.86	-0.60	1.33
Cu (IN)	-0.12	-	0.81	1.02
K (IN)	1.20	2.30 *	1.35	0.05
Mg (IN)	0.09	1.02	1.50	0.47
Mn (IN)	0.18	-0.05	0.00	0.12
N - Kjeldahl (as N) (IN)	1.36	2.74 *	2.48 *	0.76
Na (IN)	-0.24	-0.50	-0.40	-1.04
P (as P) (IN)	-0.38	-0.08	0.37	-1.12
S (as S) (IN)	-0.09	0.00	0.16	0.48
Al (AE)	2.14 *	-1.37	1.00	-1.69
ENVSHPNL20 (913)				
Ca (IN)	<	0.31	0.15	0.31
Cr (IN)	<	52.58 **	-0.87	-0.73
Cu (IN)	<	0.74	-2.38 *	0.53
F (IN)	#	#	#	#
Hg (IN)	< #	1.33	0.13	1.11
K (IN)	0.78	0.25	0.12	0.11
Mg (IN)	1.34	0.53	-0.02	0.10
Mn (IN)	0.81	0.99	0.62	1.06
N - Kjeldahl (as N) (IN)	0.48	1.69	1.85	0.37
Na (IN)	2.22 *	0.96	1.14	0.13
Ni (IN)	<	48.00 **	-0.29	-0.24
P (as P) (IN)	0.81	0.73	0.82	0.82
S (as S) (IN)	-1.65	-4.48 **	-2.58 *	-5.59 **
Se (IN)	< #	<	<	<
Zn (IN)	0.38	-1.48	-2.09 *	0.16
SABIC R&T (927)				
Ca (IN)	-0.76	0.32	-0.02	-0.50
Fe (IN)	-0.48	-1.25	-1.09	-2.27 *
K (IN)	-0.47	0.27	0.98	-1.55
Mg (IN)	-0.41	-1.30	-0.61	-1.42
Mn (IN)	-2.38 < *	-0.92	-1.58	-3.00 *
N - Kjeldahl (as N) (IN)	-0.60	-0.45	-0.53	-0.80
P (as P) (IN)	-6.98 **	-8.57 **	-5.79 **	-5.38 **
Zn (IN)	0.15	0.23	0.39	-0.67
RHODE (960)				
B (IN)	-1.08	-2.86 *	-3.21 **	-3.23 **
Ca (IN)	2.17 *	-2.49 *	-1.96	-2.07 *
Cu (IN)	-0.50	-0.42	-1.05	-1.95
Fe (IN)	-0.15	-2.16 *	-1.60	-1.34
K (IN)	-1.30	-1.28	-1.60	-1.01
Mg (IN)	-1.10	-0.99	-1.76	-0.93
Mn (IN)	3.69 **	-0.92	-1.82	-1.66
N - Kjeldahl (as N) (IN)	1.40	0.21	-0.55	1.72

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
RHODE (960) (cont.)				
Na (IN)	0.48	-0.35	0.72	-0.09
P (as P) (IN)	-2.70 *	-2.50 *	-2.86 *	-2.35 *
Zn (IN)	0.20	2.24 *	1.71	-1.35
C - elementary (RT)	6.85 **	3.86 **	2.53 *	0.89
PHARM (969)				
As (IN)	<	<	<	<
Cd (IN)	<	<	<	<
Hg (IN)	< #	<	<	<
Pb (IN)	<	<	<	0.09
SAC-CAL (973)				
As (IN)	<	-5.27 < **	<	-2.30 < *
B (IN)	0.06	-0.04	-0.65	-0.37
Ca (IN)	-0.60	-0.25	-1.03	-0.36
Co (IN)	<	-0.27	<	-1.30
Cu (IN)	0.42	1.48	0.71	0.79
Fe (IN)	-0.34	-0.34	-0.26	-0.48
Hg (IN)	< #	<	<	<
K (IN)	-0.65	-1.19	-1.57	-0.79
Mg (IN)	0.17	-0.35	-0.78	-0.02
Mn (IN)	-0.59	-2.08 *	-3.46 **	-2.24 *
Mo (IN)	<	<	<	<
N - Kjeldahl (as N) (IN)	3.25 **	-0.89	4.54 **	1.18
Na (IN)	<	0.83	<	-0.40
P (as P) (IN)	-0.74	-0.08	-1.19	-0.77
Pb (IN)	<	<	<	-9.31 < **
S (as S) (IN)	-1.65	-3.01 **	-2.18 *	-3.49 **
Se (IN)	< #	-1.47	<	-1.02
Zn (IN)	-0.46	-2.00	-1.71	-1.50
ADF-ash-free (NUT)	#	#	#	#
Crude fibre (NUT)	-0.72	-0.88	-1.36	-1.05
NDF-ash-free (NUT)	#	#	#	#
Total ash (NUT)	1.79	-2.06 *	0.01	-1.07
Total fat (NUT)	#	#	#	#
OPBLab (975)				
S (as S) (IN)	-2.81 *	-9.41 **	-6.89 **	-4.19 **
C - elementary (RT)	0.59	1.44	1.28	0.95
N - elementary (RT)	1.02	3.25 **	2.59 *	0.21
AZBY (976)				
B (IN)	4.52 **	-1.73	1.33	-2.73 *
Ca (IN)	0.17	0.42	1.10	0.34
Cu (IN)	11.91 **	7.10 **	5.77 **	4.23 **
Fe (IN)	2.07 *	-0.55	2.30 *	1.60
K (IN)	-0.47	0.30	0.64	-0.23
Mg (IN)	0.28	0.45	-0.24	0.21
Mn (IN)	3.11 **	0.96	0.42	0.50
N - Kjeldahl (as N) (IN)	-0.87	-0.67	-0.88	-0.03
Na (IN)	0.48	0.18	0.31	-0.82
P (as P) (IN)	-0.01	-0.45	-0.18	-0.19
S (as S) (IN)	2.25 *	-0.01	-0.59	2.01 *
Zn (IN)	0.70	1.30	1.50	-0.09
LS-MRC (978)				
B (IN)	-0.66	-0.49	-1.79	-1.75
Ca (IN)	0.05	0.38	1.01	-0.52
Cu (IN)	-0.93	-0.98	-9.57 **	-2.73 *
Fe (IN)	1.56	2.39 *	14.33 **	-0.64
K (IN)	2.30 *	0.24	2.43 *	3.06 **
Mg (IN)	2.51 *	4.45 **	0.25	1.13
Mn (IN)	3.38 **	3.76 **	-3.78 **	-3.26 **
N - Kjeldahl (as N) (IN)	69.74 **	-0.35	1.34	0.76
P (as P) (IN)	3.22 **	0.21	0.48	-0.19
Zn (IN)	2.50 *	-1.06	-0.62	-0.28

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
LS-MRC (978) (cont.)				
Total ash (NUT)	3.14 **	1.16	2.12 *	1.53
FERTILAB (979)				
B (IN)	0.72	-2.30 *	-3.88 **	-2.62 *
Ca (IN)	7.60 **	1.64	2.55 *	-0.05
Cu (IN)	0.54	0.58	1.02	0.82
Fe (IN)	0.03	-0.71	0.04	-0.33
K (IN)	-0.75	0.71	-0.20	-1.99
Mg (IN)	238.05 **	1.01	0.25	1.25
Mn (IN)	-1.42	0.29	-0.40	-0.05
N - Kjeldahl (as N) (IN)	-1.67	-1.78	-2.16 *	-1.72
P (as P) (IN)	-0.83	-0.52	-0.35	1.83
S (as S) (IN)	1.28	-0.47	-2.33 *	1.81
Zn (IN)	-0.20	0.58	-0.15	-0.06
FAST (1007)				
B (IN)	0.08	-0.23	0.36	0.09
Ca (IN)	0.12	-1.07	-0.28	-13.77 **
Cu (IN)	0.32	-0.35	0.13	0.27
Fe (IN)	0.42	1.21	1.55	3.77 **
K (IN)	0.53	-0.06	-0.15	1.18
Mg (IN)	0.49	-0.11	0.74	0.33
Mn (IN)	0.27	-0.46	-0.87	-0.11
Mo (IN)	-0.48	-0.32	-1.81	-0.59
N - Kjeldahl (as N) (IN)	0.27	-1.40	-2.19 *	0.60
P (as P) (IN)	-0.29	-0.88	-0.35	-0.32
Zn (IN)	0.66	0.77	2.97 *	0.15
LABZIB (1013)				
K (IN)	2.47 *	-0.84	0.73	2.46 *
Mg (IN)	1.43	1.84	2.10 *	1.55
N - Kjeldahl (as N) (IN)	2.64 *	1.24	1.87	1.58
P (as P) (IN)	-0.39	-0.97	-0.98	-1.76
ESPROT (1014)				
Ca (IN)	-0.72	-0.43	-0.17	-0.50
Cd (IN)	<	<	<	-4.91 < **
Co (IN)	43.66 **	1.38	13.39 **	3.14 **
Cr (IN)	26.09 **	9.83 **	20.53 **	6.95 **
Cu (IN)	0.97	0.69	0.10	0.41
K (IN)	1.40	1.82	2.20 *	2.11 *
Mg (IN)	1.02	1.97	2.86 *	1.94
Mn (IN)	-2.39 *	0.12	0.17	-13.13 **
Na (IN)	0.13	0.88	0.45	0.47
Ni (IN)	6.14 **	9.36 **	33.28 **	23.32 **
Pb (IN)	0.39	0.16	1.51	-0.62
Zn (IN)	-0.37	-0.26	-0.19	-0.80
Al (RT)	-0.04	-1.23	-0.23	-1.22
SMART-BGR (1016)				
B (IN)	0.59	1.71	2.13 *	2.12 *
Cl (as Cl) (IN)	-0.54	-0.64	-0.44	-0.03
Cu (IN)	0.05	0.04	0.25	-1.08
Fe (IN)	0.60	-1.76	4.97 **	-0.21
K (IN)	-1.25	0.67	0.36	-0.50
Mg (IN)	1.98	0.61	0.85	1.13
Mn (IN)	-2.35 *	0.72	0.33	1.52
N - Kjeldahl (as N) (IN)	-1.37	-0.51	-3.26 **	-3.35 **
Na (IN)	-0.24	1.15	1.98	-0.53
P (as P) (IN)	2.54 *	0.87	4.41 **	3.41 **
Zn (IN)	4.40 **	0.30	1.92	1.63
NISLT (1017)				
Cu (IN)	19.05 **	11.68 **	1.95	1.21
Fe (IN)	-2.27 *	0.61	4.12 **	2.12 *
Zn (IN)	-1.36	1.63	-0.07	-3.26 **

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
NISLT (1017) (cont.)				
ADF-ash-free (NUT)	#	#	#	#
Crude fibre (NUT)	2.11 *	1.21	0.40	0.03
NDF-ash-containing (NUT)	#	#	#	#
SUMIFRU (1026)				
B (IN)	8.88 **	-0.74	-0.25	-0.16
Ca (IN)	1.23	-0.82	-0.53	-1.59
Cu (IN)	-2.28 *	-1.73	-10.94 **	-4.93 **
Fe (IN)	-0.30	-0.41	0.06	-0.70
K (IN)	-1.42	-2.03 *	-2.78 *	-0.70
Mg (IN)	-0.57	-1.23	-0.67	-1.62
Mn (IN)	6.03 **	-1.20	-0.07	0.07
N - Kjeldahl (as N) (IN)	0.60	1.56	1.31	0.83
P (as P) (IN)	-1.61	-1.25	-1.69	-1.63
S (as S) (IN)	-0.06	6.39 **	2.48 *	6.01 **
Total ash (NUT)	0.16	-0.38	-2.07 *	-1.29
FARE (1028)				
C - elementary (RT)	1.50	1.90	1.66	1.15
N - elementary (RT)	3.20 **	6.72 **	2.34 *	1.46
delta 13C (OD)	#	#	#	#
delta 15N (OD)	#	#	#	#
MASHA (1029)				
As (IN)	-	0.61	-	1.19
Ba (IN)	-	1.45	-0.86	-0.21
Br (IN)	-	-0.64	-0.84	-0.79
Co (IN)	-	0.91	-0.73	-0.80
Cr (IN)	-	0.82	-0.45	0.04
Cs (IN)	-	-0.66	-0.91	-0.77
Fe (IN)	-0.24	3.20 **	-0.21	1.64
K (IN)	-0.17	-0.06	-0.66	0.25
Rb (IN)	0.12	0.91	-0.42	-0.08
Sb (IN)	-	1.12	-	-1.54
Sr (IN)	-	0.72	-0.58	0.59
Zn (IN)	-0.39	0.23	-0.13	0.42
CGEA (1030)				
Ba (IN)	1.10	-0.99	-2.36 *	-2.86 *
Cr (IN)	1.09	0.33	0.41	-3.08 **
Cu (IN)	-0.58	-1.02	3.95 **	-2.26 *
Fe (IN)	57.28 **	-4.59 **	12.78 **	-7.34 **
K (IN)	-2.24 *	-5.63 **	-4.23 **	-0.26
Mg (IN)	-1.16	-1.24	-1.18	-0.32
Mn (IN)	-1.65	-3.81 **	-0.99	-0.54
Ni (IN)	0.73	-0.21	-1.46	-2.36 *
Pb (IN)	1.17	-3.84 **	3.55 **	-6.92 **
Rb (IN)	0.81	0.01	-0.73	-1.16
Sr (IN)	0.90	-0.75	-0.39	-0.53
Zn (IN)	-3.22 **	-3.35 **	-1.01	-2.25 *
ETRR (1031)				
As (IN)	-	-0.11	-	1.19
Ba (IN)	-	-	-1.20	-0.58
Br (IN)	-	-0.39	-0.40	-0.43
Ca (IN)	-	3.41 **	3.07 **	3.02 **
Cl (as Cl) (IN)	-1.61	-0.11	-1.37	-0.16
Co (IN)	-	1.01	-	1.10
Cr (IN)	-	0.94	0.18	0.22
Fe (IN)	0.25	2.26 *	2.82 *	1.13
K (IN)	-0.80	-0.12	-0.81	0.23
Mg (IN)	-1.06	1.65	-0.07	-0.47
Mn (IN)	-1.09	-0.69	-1.99	-2.05 *
Na (IN)	-	-0.34	-	0.44
Rb (IN)	0.71	-	-0.74	-0.72
Sb (IN)	-	-	-	0.90

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
ETRR (1031) (cont.)				
Sr (IN)	-	1.15	-	-
Ti (IN)	-	-	-	1.19
V (IN)	-	1.01	-	0.21
Zn (IN)	-1.99	-	-0.66	-1.03
Al (RT)	-	0.67	-1.17	0.40
CNES (1033)				
As (IN)	-	-9.78 **	-	-6.41 **
Ba (IN)	-	-	1.11	-
Br (IN)	0.69	1.19	0.92	1.50
Ca (IN)	0.70	-1.66	-13.04 **	-2.93 *
Cl (as Cl) (IN)	0.22	0.80	-16.57 **	0.16
Co (IN)	-	-3.94 **	-6.32 **	-6.50 **
Cr (IN)	-	-	-	-3.08 **
Fe (IN)	-	1.22	3.02 **	0.21
K (IN)	0.17	-1.00	-12.37 **	-0.37
Mg (IN)	3.80 **	8.35 **	-2.72 *	6.86 **
Mn (IN)	-0.06	2.39 *	-9.97 **	0.12
Na (IN)	-0.48	-0.78	-	1.44
Rb (IN)	-	-	-9.04 **	-
Sb (IN)	-	-3.61 **	-	-1.78
Ti (IN)	-	0.32	-	-
V (IN)	-	-3.29 **	-	-5.80 **
Zn (IN)	-0.90	-0.57	-1.38	-1.01
Al (RT)	0.41	-0.04	-	0.63
CERT (1034)				
Ca (IN)	2.80 *	0.62	0.58	0.52
Cl (as Cl) (IN)	-0.12	0.10	-0.11	0.32
K (IN)	0.15	0.20	-0.08	-0.01
Mg (IN)	-0.09	2.70 *	-1.22	4.57 **
Mn (IN)	0.18	0.85	0.43	-0.23
Se (IN)	#	-3.56 **	0.49	-2.09 *
V (IN)	-	1.37	-	-
Zn (IN)	2.74 *	8.47 **	2.81 *	1.93
Al (RT)	0.44	0.73	-	0.63
NECSA (1035)				
Ba (IN)	-	0.13	-5.82 **	-5.98 **
Ca (IN)	10.05 **	-1.52	-9.91 **	-9.85 **
Cl (as Cl) (IN)	-6.99 **	-1.87	-2.90 *	-3.53 **
Co (IN)	0.15	3.65 **	191.22 **	0.59
Cr (IN)	11.66 **	3.81 **	5.35 **	1.99
Cs (IN)	#	-	-0.53	-
Fe (IN)	1.76	0.77	0.47	0.21
K (IN)	-0.87	-1.70	-1.83	-1.30
Mn (IN)	-1.50	-0.14	0.01	-0.25
Na (IN)	-0.44	-0.82	-0.41	0.29
Rb (IN)	-1.18	-0.83	-2.31 *	-1.62
Sr (IN)	-	-2.57 *	1.47	-0.77
Zn (IN)	-0.10	-0.97	0.50	0.55
Al (RT)	5.40 **	-	14.86 **	-1.86
LASPEE (1036)				
Ca (IN)	-0.78	-9.10 **	-13.06 **	-9.07 **
Cr (IN)	17.15 **	13.88 **	-2.08 *	-1.35
Fe (IN)	2.72 *	1.31	4.67 **	0.16
K (IN)	-4.20 **	-12.77 **	-12.64 **	-4.08 **
Mg (IN)	-8.96 **	-6.83 **	-9.65 **	-5.75 **
Mn (IN)	-3.98 **	-9.11 **	-12.13 **	-11.19 **
N - Kjeldahl (as N) (IN)	-1.29	-0.30	-2.29 *	-2.25 *
Na (IN)	76.38 **	39.74 **	64.92 **	21.75 **
Ni (IN)	24.28 **	19.92 **	12.07 **	23.28 **
P (as P) (IN)	-4.02 **	-5.57 **	-4.20 **	-3.80 **
Pb (IN)	13.93 **	5.43 **	47.04 **	-8.66 **
Zn (IN)	17.28 **	33.59 **	31.53 **	8.74 **

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
LASPEE (1036) (cont.)				
C - elementary (RT)	-1.59	-9.07 **	-8.10 **	-6.36 **
INSTN (1037)				
Cr (IN)	105.15 **	35.56 **	5.54 **	8.87 **
Cu (IN)	19.36 **	1.92	0.50	0.39
Fe (IN)	11.20 **	1.52	4.31 **	1.51
Mn (IN)	6.34 **	0.50	-1.67	-0.12
Pb (IN)	-	-	-	12.04 **
Sr (IN)	-	-1.25	-1.58	-1.73
Zn (IN)	2.48 *	8.11 **	4.11 **	0.52
KomLab (1044)				
Ca (IN)	0.76	-1.52	-0.82	-0.68
Cu (IN)	-0.35	0.11	-0.56	-0.63
Fe (IN)	1.39	-2.01 *	-1.30	-2.71 *
K (IN)	0.25	-0.55	-0.30	-0.21
Mg (IN)	0.81	-0.11	-0.46	0.56
Mn (IN)	-1.69	-0.06	-5.42 **	-0.91
N - Kjeldahl (as N) (IN)	-1.12	0.85	-1.04	0.44
Na (IN)	0.41	2.36 *	1.25	0.58
P (as P) (IN)	-3.11 **	0.95	1.24	1.83
Zn (IN)	0.78	0.57	-0.45	5.63 **
MMLAB (1059)				
B (IN)	-0.11	-0.23	-0.44	-0.27
Ca (IN)	0.52	0.23	0.72	0.62
Cu (IN)	0.23	0.74	-0.56	-0.70
Fe (IN)	-0.69	0.38	0.86	-0.14
K (IN)	-0.05	0.06	0.17	-0.04
Mg (IN)	0.92	0.37	0.47	0.44
Mn (IN)	1.06	0.09	0.53	0.59
N - Kjeldahl (as N) (IN)	0.14	-0.19	0.27	0.44
P (as P) (IN)	0.67	0.80	0.32	0.53
Zn (IN)	-0.85	0.30	-0.24	-0.32
WASL-DG (1082)				
B (IN)	-0.70	1.24	0.72	0.27
Ca (IN)	2.29 *	-4.34 **	-4.06 **	-3.49 **
Cu (IN)	291.76 **	17.10 **	-8.61 **	2.17 *
Fe (IN)	21.57 **	-0.35	10.44 **	6.51 **
K (IN)	38.82 **	32.67 **	36.25 **	37.76 **
Mg (IN)	6.55 **	3.97 **	-1.22	6.76 **
Mn (IN)	-0.32	-3.38 **	-7.00 **	-5.03 **
N - Kjeldahl (as N) (IN)	-2.46 *	-5.68 **	-2.36 *	-4.61 **
P (as P) (IN)	4.54 **	3.21 **	4.00 **	0.82
SO4 (as SO4) (IN)	#	#	#	#
Zn (IN)	54.75 **	10.28 **	22.98 **	9.27 **
LABTECCOL (1087)				
B (IN)	14.16 **	-6.71 **	-5.16 **	-9.26 **
Ca (IN)	197.27 **	0.73	0.56	-15.12 **
Cu (IN)	16.45 **	-0.80	-7.38 **	-5.84 **
Fe (IN)	46.32 **	-0.86	-5.36 **	-7.95 **
K (IN)	-1.70	-3.39 **	-5.09 **	-2.74 *
Mg (IN)	0.28	-0.43	-1.49	-5.41 **
Mn (IN)	705.11 **	-0.41	-1.70	-13.20 **
N - Kjeldahl (as N) (IN)	-10.17 **	-1.09	4.55 **	-10.19 **
Na (IN)	17.57 **	0.70	5.05 **	-7.04 **
P (as P) (IN)	-7.53 **	10.17 **	10.52 **	51.42 **
S (as S) (IN)	-0.41	-1.72	-2.13 *	-10.50 **
Zn (IN)	16.96 **	-4.64 **	-5.54 **	-8.73 **
NPIAS (1089)				
Ag (IN)	< #	< #	< #	< #
As (IN)	-0.54	-0.86	<	0.20
Ba (IN)	<	-1.99	-10.38 **	-10.72 **

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
NPIAS (1089) (cont.)				
Br (IN)	-0.55	-0.27	-0.32	-0.19
Ca (IN)	-0.51	0.62	-0.17	0.52
Cd (IN)	<	<	<	<
Cl (as Cl) (IN)	0.64	1.50	1.23	1.08
Co (IN)	<	1.01	0.20	0.70
Cr (IN)	<	0.51	0.46	1.13
Cs (IN)	< #	-5.86 **	-5.36 **	-6.59 **
Cu (IN)	<	<	<	<
Fe (IN)	-0.48	0.99	0.67	1.57
Ga (IN)	< #	< #	< #	< #
Hg (IN)	< #	<	<	<
I (IN)	< #	< #	< #	< #
K (IN)	0.60	1.82	0.25	1.23
Mn (IN)	0.09	2.49 *	0.38	1.03
Mo (IN)	<	<	<	<
Na (IN)	-0.64	0.28	-0.46	2.07 *
Pd (IN)	< #	< #	< #	< #
Rb (IN)	-0.03	0.39	0.51	0.92
S (as S) (IN)	-7.61 < **	<	-10.02 < **	-8.99 < **
Sb (IN)	<	0.32	<	<
Se (IN)	< #	0.45	<	<
Sr (IN)	<	0.71	-9.44 **	2.01 *
Ti (IN)	< #	0.71	#	1.20
V (IN)	<	0.75	<	1.14
Zn (IN)	-0.06	0.63	0.39	1.10
ARIST (1090)				
K (IN)	5.03 **	-0.43	-1.13	-5.59 **
Mn (IN)	-	5.44 **	-2.66 *	-1.41
Na (IN)	-	-0.63	2.89 *	-0.26
KFKI (1091)				
As (IN)	-0.57	-0.02	-	0.92
Ba (IN)	-	1.01	-0.08	-0.19
Br (IN)	-1.52	-3.15 **	-2.85 *	-5.62 **
Ca (IN)	6.38 **	3.21 **	5.04 **	3.30 **
Cl (as Cl) (IN)	1.91	2.32 *	4.76 **	2.00
Co (IN)	0.42	0.69	5.04 **	1.76
Cr (IN)	-0.23	1.00	1.34	1.62
Cs (IN)	-	1.14	0.50	-0.33
Cu (IN)	0.91	7.80 **	-	9.13 **
Fe (IN)	-0.92	1.90	0.57	1.92
I (IN)	-	-	-	#
K (IN)	1.80	1.52	3.94 **	0.55
Mg (IN)	2.51 *	4.29 **	4.17 **	4.69 **
Mn (IN)	0.57	2.63 *	2.98 *	3.03 **
Na (IN)	-0.45	0.21	-0.88	0.69
Rb (IN)	-1.08	0.66	0.73	0.41
Sb (IN)	-	0.13	-	0.61
Sr (IN)	-	2.35 *	2.87 *	-
Ti (IN)	-	0.56	-	0.40
V (IN)	-	0.93	-	1.91
Zn (IN)	-1.78	0.50	-0.08	0.32
REAK (1092)				
Br (IN)	6.28 **	-0.08	-0.38	-0.09
Ca (IN)	-	3.02 **	2.46 *	-2.16 *
Co (IN)	-	0.11	-	-2.97 *
Cr (IN)	-	1.31	23.74 **	3.47 **
Fe (IN)	20.97 **	3.92 **	13.47 **	-0.12
K (IN)	-3.80 **	-1.64	-2.58 *	-
Mn (IN)	-	-0.46	2.13 *	0.12
Na (IN)	-	0.28	-	1.39
Sb (IN)	-	-	-	0.81
Zn (IN)	-0.81	0.50	0.39	-3.00 **

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
SACAV (1095)				
Ag (IN)	#	#	#	#
As (IN)	0.50	-0.74	-	-1.69
Ba (IN)	155.94 **	11.20 **	-1.84	-0.17
Br (IN)	0.89	-1.01	-0.94	-1.89
Ca (IN)	-	-2.04 *	-0.94	-1.60
Co (IN)	5.55 **	1.22	2.47 *	1.43
Cr (IN)	26.20 **	6.41 **	10.79 **	4.38 **
Cs (IN)	#	19.01 **	-0.40	5.72 **
Fe (IN)	1.21	1.61	-1.77	1.15
K (IN)	-0.47	-1.52	-1.36	-0.96
Na (IN)	-0.68	-0.41	-0.63	0.71
Rb (IN)	6.11 **	10.72 **	-1.07	-0.32
Sb (IN)	-	0.32	-	0.13
Se (IN)	-	10.10 **	27.86 **	15.35 **
Zn (IN)	-0.27	0.23	-1.71	-1.64
CAMPU (1096)				
As (IN)	-	-	-	-6.41 **
Br (IN)	765.34 **	28.48 **	9.67 **	148.32 **
K (IN)	-2.05 *	-1.49	-1.65	-1.28
Na (IN)	1.41	-0.21	2.02 *	3.38 **
ATCHI (1098)				
As (IN)	-	-2.35 *	-	-2.41 *
Br (IN)	-0.91	0.29	0.74	0.22
Co (IN)	14.76 **	-0.42	4.65 **	-1.88
Cr (IN)	-	0.35	0.15	0.01
Cs (IN)	-	-	-1.88	-0.02
Fe (IN)	-	-	0.08	-1.05
K (IN)	-7.30 **	-10.65 **	-9.77 **	-7.61 **
Na (IN)	1.95	-2.66 *	0.68	-3.79 **
Rb (IN)	-	-6.05 **	-1.63	-2.93 *
Sb (IN)	8.32 **	3.00 **	7.72 **	-0.28
Zn (IN)	5.53 **	5.19 **	-2.68 *	-2.40 *
TEFA (1099)				
As (IN)	<	0.57	<	-0.06
B (IN)	<	<	<	<
Ba (IN)	<	0.57	-0.18	0.28
Br (IN)	0.69	0.35	0.28	0.99
Ca (IN)	<	-0.81	-0.85	-0.86
Cd (IN)	<	<	<	<
Co (IN)	<	0.48	-0.20	0.19
Cr (IN)	<	0.54	-0.18	-
Cs (IN)	< #	-0.01	0.67	0.11
Fe (IN)	-0.56	0.48	0.08	0.94
K (IN)	0.05	0.18	0.29	0.47
Mo (IN)	-0.73	0.36	-0.84	1.65
Na (IN)	-0.66	0.18	-0.53	1.89
Rb (IN)	0.22	0.25	0.48	0.18
Sb (IN)	<	0.16	<	0.72
Se (IN)	< #	<	<	0.05
Sr (IN)	<	0.86	1.73	0.84
Zn (IN)	-0.06	0.03	-0.08	0.51
SYRAT (1100)				
Ag (IN)	< #	< #	< #	#
As (IN)	0.06	-2.62 *	1.50	5.73 **
Ba (IN)	<	0.49	1.94	3.60 **
Br (IN)	-0.01	-0.70	-0.62	-0.35
Ca (IN)	<	-1.26	-5.01 **	-3.95 **
Cd (IN)	<	<	<	<
Cl (as Cl) (IN)	-0.54	-1.55	-2.43 *	0.30
Co (IN)	0.29	0.87	0.08	0.51
Cr (IN)	0.20	0.23	0.57	0.88
Cs (IN)	#	-0.47	-0.01	0.71

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
SYRAT (1100) (cont.)				
Cu (IN)	<	<	<	<
Fe (IN)	0.19	2.47 *	2.82 *	3.56 **
Hg (IN)	< #	<	38.61 **	19.78 **
I (IN)	< #	< #	< #	< #
K (IN)	1.00	-0.11	0.76	1.30
Mg (IN)	-0.14	1.25	24.47 **	10.66 **
Mn (IN)	0.37	-0.61	-4.06 **	-2.98 *
Mo (IN)	0.31	-2.30 *	<	2.34 *
Na (IN)	-0.55	-0.62	-0.61	1.24
Ni (IN)	1.14	-2.92 *	-0.52	-0.71
Rb (IN)	-0.06	0.08	2.19 *	2.35 *
S (as S) (IN)	<	<	<	<
Sb (IN)	0.09	-0.13	0.37	2.22 *
Se (IN)	< #	-0.47	<	1.45
Sr (IN)	2.04 *	0.44	2.78 *	2.91 *
Ti (IN)	< #	0.89	< #	<
V (IN)	1.87	0.58	5.98 **	-0.64
Zn (IN)	-0.01	0.57	1.92	2.60 *
TECNUC (1103)				
Ba (IN)	-	4.47 **	0.53	2.05 *
Br (IN)	-	1.03	0.56	1.84
Ca (IN)	-	3.86 **	3.37 **	3.94 **
Co (IN)	-	1.01	0.52	0.88
Cr (IN)	-	1.48	0.98	0.85
Cs (IN)	-	3.79 **	1.86	3.77 **
Fe (IN)	2.69 *	3.99 **	1.06	2.75 *
Na (IN)	-	-1.28	-0.71	0.26
Rb (IN)	-1.11	0.63	0.44	0.48
Sb (IN)	-	0.56	-	0.84
Se (IN)	-	0.96	1.98	1.21
Zn (IN)	-0.56	1.30	0.87	1.73
INDIES (1106)				
Ag (IN)	< #	< #	< #	< #
As (IN)	<	0.84	<	0.78
Br (IN)	-0.01	-0.06	-0.10	-0.45
Ca (IN)	<	0.36	0.42	-0.22
Cd (IN)	<	<	<	<
Cr (IN)	1.01	0.84	0.58	1.30
Fe (IN)	2.28 *	3.24 **	2.08 *	2.03 *
K (IN)	0.60	0.99	1.11	0.91
Mg (IN)	-0.57	2.13 *	1.12	4.00 **
Mn (IN)	-0.19	0.52	0.81	-0.19
Na (IN)	-0.58	0.20	-0.38	1.53
Rb (IN)	3.58 **	4.58 **	1.11	1.27
Sb (IN)	<	1.23	<	0.60
Se (IN)	< #	<	<	<
Sr (IN)	<	-0.19	0.42	-0.40
Ti (IN)	< #	<	< #	<
V (IN)	0.45	1.04	<	1.34
Zn (IN)	0.74	1.39	1.53	0.72
Al (RT)	1.62	0.49	1.97	0.70
DESAR (1108)				
As (IN)	-0.71	0.16	-	-0.25
Ba (IN)	-	0.29	-0.13	0.51
Br (IN)	-0.55	0.10	-0.10	-0.09
Cd (IN)	-0.74	-1.93	-0.62	-2.29 *
Cl (as Cl) (IN)	-0.19	-0.29	-0.44	-0.02
Co (IN)	-0.50	0.60	0.67	0.79
Cr (IN)	0.25	0.74	0.09	1.16
Cs (IN)	-	0.71	0.39	-0.34
Cu (IN)	0.57	-0.45	-0.56	-0.14
Fe (IN)	0.25	1.03	0.63	1.78
Hg (IN)	-	-	-	2.50 *

(cont)

IPE 2012.1 Z - Scores - Per Participant

Sample	197	124	189	157
DESAR (1108) (cont.)				
K (IN)	-1.22	-1.34	-1.44	-0.96
Mg (IN)	1.34	1.25	-0.78	0.21
Mn (IN)	-0.45	0.06	-0.93	-0.70
Na (IN)	-0.70	-0.25	-0.69	1.14
Pb (IN)	-	-5.90 **	-	-9.86 **
Rb (IN)	0.07	-0.56	0.13	0.25
Sb (IN)	-1.28	-0.59	-	0.50
Se (IN)	-	-0.01	-	-0.13
Sr (IN)	-	0.31	0.82	1.15
V (IN)	-	0.69	-	0.68
Zn (IN)	-0.27	0.23	-0.03	0.83
YAZA (1109)				
Br (IN)	-	3.33 **	1.97	5.82 **
Co (IN)	146.68 **	16.35 **	126.56 **	41.46 **
Mn (IN)	-	-	-	-9.66 **
NOUSSE (1110)				
As (IN)	0.26	2.18 *	-	1.29
Ba (IN)	15.36 **	0.73	-0.14	-0.03
Br (IN)	0.71	2.51 *	2.24 *	3.33 **
Ca (IN)	1.93	0.36	0.15	-0.68
Co (IN)	-0.46	0.28	-0.30	-0.80
Cr (IN)	-0.77	-2.09 *	-2.62 *	-1.04
Cs (IN)	#	0.47	0.39	-0.46
Fe (IN)	-0.67	1.32	0.86	0.58
K (IN)	-1.07	0.54	0.68	-0.11
Mg (IN)	-3.33 **	6.45 **	2.65 *	5.50 **
Mn (IN)	-0.35	-0.61	-0.28	-0.59
Na (IN)	0.66	1.74	0.83	3.45 **
Rb (IN)	-0.98	-0.52	-0.33	-0.44
Sb (IN)	0.30	-0.50	-0.54	0.26
Se (IN)	-	0.03	0.28	-0.33
Sr (IN)	5.33 **	-0.08	-0.36	-0.27
Zn (IN)	-1.15	0.10	-0.34	-1.01
Al (RT)	1.81	0.84	1.31	0.59
LNIP (1111)				
As (IN)	-	-0.88	-	-1.56
Ba (IN)	-	-2.69 *	-0.29	-0.15
Br (IN)	-	-0.45	-0.44	0.32
Ca (IN)	-	-9.66 **	-10.36 **	-8.84 **
Cl (as Cl) (IN)	-3.43 **	-3.80 **	-6.71 **	-2.18 *
Co (IN)	-	-0.35	6.76 **	2.14 *
Cr (IN)	6.61 **	1.40	2.75 *	0.00
Cs (IN)	-	0.45	0.96	1.85
Fe (IN)	10.25 **	2.15 *	6.04 **	0.55
K (IN)	-	-1.40	-0.07	100.60 **
Mg (IN)	-2.66 *	-6.00 **	-5.69 **	-6.08 **
Mn (IN)	-0.06	-1.16	-0.80	-0.53
Na (IN)	-	-0.62	-0.42	1.48
Rb (IN)	0.95	3.94 **	0.41	0.20
Sb (IN)	21.86 **	3.25 **	14.11 **	-1.53
Se (IN)	-	-	106.58 **	2.00 *
Sr (IN)	-	-2.33 *	0.03	0.26
Ti (IN)	#	-	-	-
V (IN)	-	-1.34	-	-1.60
Al (RT)	0.16	-1.42	0.42	-0.56

Errors and Corrections

IPE 2011 Period 4

Errors and Corrections IPE 2011 Period 4

Sample		169	159	188	100	Code
Inorganic Chemical Composition						
Ag (µg/kg)						
SYRAT	(1100)	0.00 <	0.0 <	0.0 <	0 <	D, N
		===== Statistical Results (no NDA) =====				
N		2	3	2	3	
Median		9.050	10.20	21.45	116.0	
MAD		1.550	3.69	1.55	109.9	
		=====				
As (µg/kg)						
SYRAT	(1100)	0.0 **	0 **	0.0 < *	0 **	D, N
TECNUC	(1103)	70.0	2380	-	2430 **	D, N
		===== Statistical Results =====				
NDA mean		99.30	2196	28.87	308.1	
NDA st dev		32.96	268	12.50	59.4	
N		21	25	14	24	
Median		95.29	2123	32.90	305.0	
MAD		24.71	193	9.85	41.9	
		=====				
Ba (mg/kg)						
CGEA	(1030)	0.24 **	0.40	0.25 **	0.5 **	D, N
SYRAT	(1100)	15.00 <	27.50 **	6.76 **	19.4 **	D, N
		===== Statistical Results =====				
NDA mean		4.268	8.264	1.924	10.61	
NDA st dev		0.533	4.988	0.243	2.08	
N		14	17	13	17	
Median		4.120	8.140	2.010	10.29	
MAD		0.375	3.060	0.200	1.39	
		=====				
Br (mg/kg)						
SYRAT	(1100)	9.8	29.3	16.5	23.4	D, N
TECNUC	(1103)	11.2	33.3	17.6	26.2	D, N
		===== Statistical Results =====				
NDA mean		10.61	30.24	16.36	24.33	
NDA st dev		1.13	3.51	1.76	1.69	
N		9	10	10	10	
Median		10.61	29.73	16.58	24.11	
MAD		0.81	2.48	1.23	1.20	
		=====				
Ca (g/kg)						
SYRAT	(1100)	7.40	16.0	5.54 *	4.70 *	D, N
		===== Statistical Results =====				
NDA mean		7.648	16.50	6.680	5.452	
NDA st dev		0.474	0.95	0.446	0.256	
N		119	120	119	120	
Median		7.640	16.41	6.680	5.450	
MAD		0.320	0.65	0.310	0.176	
		=====				

Errors and Corrections IPE 2011 Period 4

Sample		169	159	188	100	MIC
Cd (µg/kg)						
SYRAT	(1100)	0 **	0 < **	0.0 < **	0.0 < **	D, N
		===== Statistical Results =====				
NDA mean		3573	127.8	43.40	84.02	
NDA st dev		395	11.0	7.35	12.89	
N		32	30	27	30	
Median		3557	128.0	43.00	83.90	
MAD		280	7.8	5.16	8.85	
=====						
Cl (as Cl) (g/kg)						
AMIS-AGRO	(58)	5.41	5.50	6.26	8.08	E, M
		===== Statistical Results =====				
NDA mean		5.479	5.475	6.413	8.075	
NDA st dev		0.290	0.311	0.389	0.405	
N		28	28	28	28	
Median		5.472	5.507	6.410	8.095	
MAD		0.205	0.227	0.280	0.285	
=====						
Co (µg/kg)						
CGEA	(1030)	28.0	30 *	21.2	12 **	D, N
SYRAT	(1100)	0.0 **	0 *	0.0 *	0 **	D, N
TECNUC	(1103)	57.7	1216 *	3216.0 **	205	D, N
YAZA	(1109)	4592.0 **	5633 **	4071.0 **	3977 **	D, N
		===== Statistical Results =====				
NDA mean		47.10	647.3	24.86	175.0	
NDA st dev		14.17	279.9	8.33	26.4	
N		30	38	28	36	
Median		47.90	640.8	25.60	170.5	
MAD		9.90	179.8	5.98	19.0	
=====						
Cr (µg/kg)						
CGEA	(1030)	176	333 *	152	174 **	D, N
SYRAT	(1100)	0 *	0 *	0	0 **	D, N
TECNUC	(1103)	470	7810 *	580	2720	D, N
		===== Statistical Results =====				
NDA mean		380.5	3400	280.1	1857	
NDA st dev		147.9	1512	161.0	524	
N		32	34	31	34	
Median		415.1	3272	304.0	1838	
MAD		104.6	1028	119.0	357	
=====						
Cs (µg/kg)						
SYRAT	(1100)	0.0 <	0 *	0 **	0 **	D, N
TECNUC	(1103)	-	248	123	199	D, N
YAZA	(1109)	1586.0	1945 **	1406 **	1373 **	D, N
		===== Statistical Results =====				
NDA mean		-	186.0	112.3	150.9	
NDA st dev		-	64.4	12.5	44.9	
N		7	10	10	10	
Median		20.00	199.0	112.0	154.5	
MAD		10.53	45.5	9.5	30.0	
=====						

Errors and Corrections IPE 2011 Period 4

Sample		169	159	188	100	MIC
Cu (mg/kg)						
INSTN	(1037)	10.10 **	7.80 *	5.20	9.20 *	D, N
		===== Statistical Results =====				
NDA mean		5.318	9.288	5.703	7.477	
NDA st dev		0.558	0.651	0.938	0.588	
N		102	103	102	104	
Median		5.385	9.290	5.730	7.515	
MAD		0.390	0.437	0.601	0.395	
		=====				
Fe (mg/kg)						
CGEA	(1030)	65.2 *	559 *	77.7	342 **	D, N
INSTN	(1037)	202.1 **	1843 **	230.4 **	664 **	D, N
SYRAT	(1100)	105.0	1203 *	102.0 *	589	D, N
TECNUC	(1103)	105.2	1384 **	93.9	613 *	D, N
		===== Statistical Results =====				
NDA mean		92.28	895.2	80.60	510.2	
NDA st dev		10.25	112.8	8.57	42.1	
N		111	113	109	113	
Median		93.40	903.8	80.90	509.6	
MAD		7.10	75.5	5.84	28.6	
		=====				
Ga (µg/kg)						
CGEA	(1030)	14.8	22	16	14	D, N
		===== Statistical Results (no NDA) =====				
N		2	2	2	2	
Median		60.91	336.5	106.8	148.7	
MAD		46.10	314.5	91.2	134.3	
		=====				
Hg (µg/kg)						
SYRAT	(1100)	0.0 < **	0.0 < **	0.0 < **	0.0 < **	D, N
		===== Statistical Results =====				
NDA mean		14.31	12.70	34.42	11.06	
NDA st dev		1.76	1.21	2.72	0.70	
N		14	14	13	15	
Median		14.75	13.05	34.30	11.20	
MAD		1.45	0.94	1.90	0.56	
		=====				
K (g/kg)						
ARIST	(1090)	34.7	21.1	11.70 *	28.8 *	D, N
SYRAT	(1100)	32.2	22.2	9.85	25.6	D, N
TECNUC	(1103)	28.9 *	19.6 *	8.40	20.9 **	D, N
		===== Statistical Results =====				
NDA mean		34.04	21.77	9.726	25.87	
NDA st dev		2.24	1.08	0.760	1.35	
N		121	122	120	122	
Median		33.95	21.70	9.800	25.90	
MAD		1.55	0.72	0.515	0.92	
		=====				
Mg (g/kg)						
SYRAT	(1100)	2.42	2.11 *	2.28 *	1.81	D, N
		===== Statistical Results =====				
NDA mean		2.402	1.826	2.732	1.977	
NDA st dev		0.159	0.113	0.204	0.121	
N		117	118	117	118	
Median		2.400	1.830	2.730	1.975	
MAD		0.110	0.078	0.140	0.085	

Errors and Corrections IPE 2011 Period 4

Sample		169	159	188	100	Code
Mn (mg/kg)						
ARIST	(1090)	72.0	38.0	397	88.0	D, N
SYRAT	(1100)	71.1	61.9 **	351	52.2 **	D, N
		===== Statistical Results =====				
NDA mean		75.47	34.54	420.0	79.51	
NDA st dev		5.33	3.55	38.9	5.34	
N		113	113	113	114	
Median		75.88	34.85	420.0	79.60	
MAD		3.61	2.43	27.0	3.60	
		=====				
Mo (µg/kg)						
SYRAT	(1100)	-	-	-	0 **	D, N
		===== Statistical Results =====				
NDA mean		854.7	2845	85.08	1620	
NDA st dev		80.1	269	28.79	153	
N		34	35	25	37	
Median		867.7	2820	95.00	1605	
MAD		57.1	179	22.00	102	
		=====				
N - Kjeldahl (as N) (g/kg)						
DFAL	(76)	23.5 *	26.0	23.2	29.0	E, N
		===== Statistical Results =====				
NDA mean		27.62	25.79	24.53	29.04	
NDA st dev		1.43	0.91	0.82	1.17	
N		68	68	68	68	
Median		27.41	25.80	24.52	28.90	
MAD		1.00	0.60	0.53	0.81	
		=====				
Na (mg/kg)						
AMIS-AGRO	(58)	450	1140	108.0 **	3174	E, M
ARIST	(1090)	313	1023	106.0 *	3113	D, N
SYRAT	(1100)	183 **	580 **	29.0	1695 **	D, N
TECNUC	(1103)	415	1327 *	54.3	3390	D, N
		===== Statistical Results =====				
NDA mean		384.0	1045	55.66	3292	
NDA st dev		44.8	124	16.95	235	
N		77	77	67	78	
Median		385.0	1024	60.00	3283	
MAD		31.0	82	12.00	163	
		=====				
Ni (µg/kg)						
CGEA	(1030)	262	468 **	286 **	177 **	D, N
INSTN	(1037)	13200 **	-	-	4100 **	D, N
		===== Statistical Results =====				
NDA mean		341.3	2306	1327	1494	
NDA st dev		140.5	482	215	181	
N		23	22	23	24	
Median		361.0	2249	1339	1482	
MAD		98.8	336	151	126	
		=====				

Errors and Corrections IPE 2011 Period 4

Sample		169	159	188	100	MIC
Pb (µg/kg)						
CGEA	(1030)	107 **	129 **	114 *	121 **	D, N
===== Statistical Results =====						
NDA mean		858.1	1500	257.1	1157	
NDA st dev		147.3	246	55.1	147	
N		25	27	24	28	
Median		826.8	1516	263.1	1155	
MAD		103.2	164	38.3	97	
=====						
Rb (µg/kg)						
CGEA	(1030)	9350	-	-	-	D, N
SYRAT	(1100)	0 **	0 **	0 **	0 **	D, N
TECNUC	(1103)	10 **	10 **	10 **	40 **	D, N
===== Statistical Results =====						
NDA mean		11382	10905	9216	36144	
NDA st dev		1216	2097	1355	6594	
N		16	14	14	15	
Median		11030	10139	8931	34930	
MAD		870	1583	1015	5070	
=====						
Sb (µg/kg)						
CGEA	(1030)	1.4	5	-	-	D, N
SYRAT	(1100)	0.0	0	0.00	0.0	D, N
TECNUC	(1103)	33.1	176	-	64.7	D, N
===== Statistical Results =====						
NDA mean		21.22	107.7	-	46.64	
NDA st dev		13.16	63.1	-	42.01	
N		14	16	7	13	
Median		27.25	109.0	4.860	47.50	
MAD		9.40	41.4	4.860	27.80	
=====						
Sn (µg/kg)						
CGEA	(1030)	43.2	11.7	60.6	20.3	D, N
===== Statistical Results (no NDA) =====						
N		5	5	4	5	
Median		43.18	93.63	64.90	52.60	
MAD		3.88	50.37	12.00	11.20	
=====						
Sr (mg/kg)						
SYRAT	(1100)	28.2 **	61.2	19.5 **	26.2 **	D, N
===== Statistical Results =====						
NDA mean		15.82	55.39	14.62	21.15	
NDA st dev		1.21	5.01	1.57	1.15	
N		16	19	17	18	
Median		16.13	55.00	15.09	21.41	
MAD		0.86	3.43	1.19	0.84	
=====						

Errors and Corrections IPE 2011 Period 4

Sample		169	159	188	100	Code
Zn (mg/kg)						
CGEA	(1030)	139	20.1	22.9 **	37.2	D, N
INSTN	(1037)	133 *	55.8 **	49.1 **	45.9 **	D, N
SYRAT	(1100)	167	18.7	14.9	30.4	D, N
TECNUC	(1103)	173	21.2	15.4	35.6	D, N

	=====	Statistical Results				=====
NDA mean	169.2	19.79	15.72	33.06		
NDA st dev	15.8	1.69	2.32	2.20		
N	108	108	108	109		
Median	170.0	19.80	16.00	33.20		
MAD	10.9	1.20	1.60	1.50		

Real totals

Al (mg/kg)						
INSTN	(1037)	38420.0 **	97180 **	16545.0 **	14880 **	D, N

	=====	Statistical Results				=====
NDA mean	82.60	1824	55.94	682.4		
NDA st dev	29.09	598	13.92	184.8		
N	17	18	17	18		
Median	90.00	1962	59.70	735.0		
MAD	20.80	359	10.07	121.0		



International Soil-Analytical Exchange
Fee € 585,- (EUR) per year
In this period 305 participants



International Plant-Analytical Exchange
Fee € 585,- (EUR) per year
In this period 243 participants



International Sediment Exchange for Tests on Organic Contaminants
Fee € 920,- (EUR) per year
In this period 77 participants



International Manure and Refuse Sample Exchange Program
Fee € 745,- (EUR) per year
In this period 48 participants



International Biomass Exchange Program
Fee € 680,- (EUR) per year
In this period 17 participants



Quasimeme Laboratory Performance Studies
Organic contaminants, metals, nutrients in seawater, sediment and biota
More than 250 laboratories participating

For more information and application, please contact:

WE PAL
PO BOX 8005
6700 EC WAGENINGEN
THE NETHERLANDS

Tel. : +31 317 48 23 37
no reply : +31 317 48 23 49
Fax. : +31 317 48 56 66
E-mail : Info.Wepal@wur.nl
Internet: www.wepal.nl