ANNEXES

Annex 1: List of participating laboratories

Lab name	Institute	Contact person	Street	Zip code	Town	Country	Email
Unit of Forest Soil	Federal Research Centre for Forests (BFW)	Franz Mutsch	Seckendorff-Gudent-Weg, 8	A-1131	Vienna	Austria	franz.mutsch@bfw.gv.at
Laboratory of Soil Science	Gent University	Nicole Vindevogel	Krijgslaan, 281 (S8)	B-9000	Gent	Belgium	nicole.vindevogel@ugent.be
Analytical laboratory	Research Institute for Forestry and Nature (INBO)	Els Mencke	Gaverstraat, 35	B-9500	Geraardsbergen	Belgium	els.mencke@inbo.be
Laboratory Quality Control Soil	Analytical Department - Executive Agency of Env.	Radoslava Shoevska Rigova	Tzar Boris III Blvd., 136; POB 251	BG-1618	Sofia	Bulgaria	radena69@yahoo.com
Soil Laboratory	Forest Research Institute	Boris Vrbek	Cvjetno Naselje, 41	10450	Jastrebarsko	Croatia	borisv@sumins.hr; tamaraj@sumins.hr
Analytical Laboratories Section	Department of Agriculture	Panicos Hadjigeorgiou	Louki Akrita	CY-1412	Nicosia	Cyprus	achristou@fd.moa.gov.cy
Department of Experimental Laboratories	Forestry and Game Mangement Research Institute (Výzkumný ústav lesního hospodárství a myslivost)	Olga Jerabkova	Strnady 136	252 02	Jiloviste	Czech Republic	jerabkova@vulhm.cz
Analytical Laboratory	Danish Centre for Forest, Landscape and Planning (KVL)	Lars Vesterdal	Hoersholm Kongevej, 11	DK-2970	Hoersholm	Denmark	lv@kvl.dk
Lab of Soil Science and Agrochemistry	Estonian University of Life Sciences	Tonu Tonutare	Viljandi Road, Eerika	50412	Tartu	Estonia	tonu.tonutare@mail.ee
	Tartu Environmental Research Ltd.	Mae Uri	Akadeemia, 4	51003	Tartu	Estonia	maeuri@tkku.ee
Central Laboratory	Finnish Forest Research Institute	Arja Tervahauta	Jokiniemenkuja 1	FIN 01300	Vantaa	Finland	arja.tervahauta@metla.fi
Rovaniemi Research Station	Finnish Forest Research Institute	Kirsti Derome	Eteläranta 55; P.O. Box 16	FIN 96300	Rovaniemi	Finland	kirsti.derome@metla.fi
Laboratoire d'Analyses des Sols	INRA	Henri Ciesielski	273, Rue de Cambrai	62000	Arras	France	ciesiel@arras.inra.fr
SG 1.2 - Labor	Bay. LA für Wald und Forstwirtschaft	Dr. Uwe Blum	Am Hochanger 11	D-85354	Freising	Germany	blu@lwf.uni-muenchen.de
	LUFA Rostock der LMS	Klingenberg	Graf-Lippe-Str., 1	D-18059	Rostock	Germany	uklingenberg@lms-lufa.de
Abt. Boden und Umwelt	Forstliche Versuchs- und Forshungsanstalt Baden-Württemberg	Gabriele Trefz-Malcher	Wonnhaldestr., 4	D-79100	Freiburg	Germany	gabriele.trefz-malcher@forst.bwl.de
Ökologisches Labor	Fachhochschule Eberswalde, Zentrale Einrichtung	Lothar Reichelt	Friedrich - Ebert - Str. 28	D-16225	Eberswalde	Germany	lreichelt@fh-eberswalde.de

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Lab for Sidesurvey and Forestnurition	Saxon State Institute for Forestry	Frank Symossek	Bonnewitzer Str., 34	D-01796	Pirna - OT Graupa	Germany	frank.symossek@smul.sachsen.de
	Thüringer Landesanstalt für Landwirtschaft	Guenter Kiessling	Naumburger Str., 98	D-07743	Jena	Germany	g.kiessling@jena.tll.de
	Nordwestdeutsche Forstliche Versuchsanstalt	Nils König	Grätzelstrasse, 2	D-37073	Göttingen	Germany	nils.koenig@nw-fva.de
Landesbetrieb Hessisches Landeslabor	Abt.VI - Landwirtschaftliches Untersuchungswesen	Rolf Ellinghaus	Am Versuchsfeld, 13	D-34128	Kassel-Harleshausen	Germany	r.ellinghaus@lhl-wi.hessen.de
Geologischer Dienst Nordrhein-Westfalen	Geologischer Dienst Nordrhein-Westfalen	Burkhard Lüer	De-Greiff-Straße, 195	D-47803	Krefeld	Germany	burkhard.lueer@gd.nrw.de
	Landesamt für Geologie und Bergbau R-P	Matthias Hauenstein	Emy-Roeder-Str. 5	55129	Mainz	Germany	matthias.hauenstein@lgb-rlp.de
Abt. 3 Referat 2	LUFA Speyer	Klaus Wies	Obere Langgasse 40	67346	Speyer	Germany	wies@lufa-speyer.de
		Jens Utermann	Stilleweg 2	D-30655	Hannover	Germany	jens.utermann@bgr.de
Landesamt für Umwelt- und Arbeitsschutz	Fachbereich Bodenschutz und Waldökologie	K.D. Fetzer	Don Bosco Straße 1	D-66119	Saarbrücken	Germany	kd.fetzer@lua.saarland.de
Institute of Site Survey	Faculty of Forestry, West-Hungarian University	András Bidló	Nyugat - Magyarországi Egyetem, Termöhelyismeretta	H-9400	Sopron	Hungary	abidlo@emk.nyme.hu
Laboratory of Ecology	Forest Research Institute	Miklós Manninger	Várkerület 30/A	H-9601	Sárvár	Hungary	manningerm@erti.hu
Coillte Research Laboratory	Coillte Teoranta	Andrew Fitzgerald	Church Road, Newtownmountke, Co. Wicklow			Ireland	andrew.fitzgerald@coillte.ie
Research Unit of Soil Chemistry	CNR - Institute for Ecosystem Studies	Grazia Masciandaro	Area della Ricerca, Via Moruzzi, 1	56124	Pisa	Italy	grazia.masciandaro@ise.cnr.it
Soil laboratory	Latvian State Forest Research Institute	Andis Lasdinsh	Riga Street, 111, Salaspils	LV-2169	Riga district	Latvia	anl@silava.lv
Analytical Department	Agrochemical Research Centre of Lithuani	Jadvyga Lubyte	Savanoriu Avenue 287	LT-50127	Kaunas	Lithuania	analize@agrolab.lt
Lab. of Forest Environment Chemistry	Forest Res. Inst. Dept of For. Hab. Sci.	Józef Wójcik	Braci Lesnej 3	PL-05-090	Sekocin Stary	Poland	j.wojcik@ibles.waw.pl

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Lab. of Agric. Chem. Rebelo da Silva	National Research Institute for Agriculture and Fisheries	Lídia Farropas	Tapada de Ajuda, Apartado 3228	P-1301-903	Lisboa	Portugal	lidiafarropas.lqars@mail.telepac.pt
Departamento de Ciencias Agrarias	Universidade dos Azores	Jorge Pinheiro	Terra Chã	9700	Angra do Heroismo	Portugal	jpinheiro@mail.angra.uac.pt
Soil and Forests Stations Laboratory	Forests Reasurch and Management Instiute	Ionescu Carmen Monica	Sos.Stefanesti, nr.128	077190	Bucharest	Romania	monica12111958@yahoo.com
ECOANALYT Ecoanalytical Laboratory	Institute of Biology Komi SC UD RAS	Svetlana Kostrova	Kommunisticheskaya st., 28	167982	Syktyvkar	Russia	kostrova@ib.komisc.ru
Laboratory for Forest Pedology	Forest Research Institute of KRC of RAS	Natalia Fedorets	Pushkinskaya st., 11	185910	Petrozavodsk	Russia	fedorets@krc.karelia.ru
Pedology Laboratory	Institute of Forestry	Zoran Miletic	Kneza Viseslava 3	11000	Belgrade	Serbia	nevenic@eunet.yu
Central Forestry Laboratory	National Forest Centre (Narodne lesnicke centrum)	Anna Stanciková	T.G. Masaryka 22	SK-960 92	Zvolen	Slovak Republic	anna.stancikova@nlcsk.sk
Laboratory for Forest Ecology	Slovenian Forestry Institute	Daniel Zlindra	Vecna pot 2	SI-1000	Ljubljana	Slovenia	daniel.zlindra@gozdis.si
Applus Agroambiental S.A	Applus Agroambiental S.A	Miquel Arán Mayoral	Partida Setsambs, S/N	E-25222	Sidamon (Lleida)	Spain	maran@appluscorp.com
	INIA CIFOR	José Manuel Grau Corbi	Carretera Coruña km 7.5	E-28040	Madrid	Spain	isabelgz@inia.es and grau@inia.es
Department of Forest Soil	Sveriges Lantbruksuniversitet (SLU)	Kjell Larsson	Johan Brauners vag 1, Ultuna	S-75007	Uppsala	Sweden	kjell.larsson@sml.slu.se
Bodenwissenschaften	WSL	Alois Zürcher	Zürcherstrasse 111	8903	Birmensdorf	Switzerland	alois.zuercher@wsl.ch
Research Institute for Soil and Ecology	Dep.of Res.and Dev.-&Forests Reasurch and Management Instiute#304;ns.for Soil and Ec.	Ahmet Senyaz-Ertan Seref Koray	Kutahya Yolu	26160	Eskisehir	Turkey	ekoloji@cevreorman.gov.tr
Soil and Ecology Lab	The Aegean Forestry Research Institute	Mehmet Sayman	Zeytinalani, Urla	35530	Izmir	Turkey	mhsayman@yahoo.com
Environmental Research Laboratory	Forest Research	François Bochereau	Alice Holt Lodge, Farnham	GU104LH	Farnham, Surrey	United Kingdom	francois.bochereau@forestry.gsi.gov.uk

Annex 2: Coding system

Table 2.1: Codes for sieving and milling

Code	Description
0	No information
1	Reference method
2	Milling
2.1	To 150 micrometer
2.2	As fine as possible
9	Other method

Table 2.2: Codes removal compounds

Code	Description
0	No information
1	No removal
2	Removal of organic carbon
2.1	Hydrogen peroxide
2.2	Pre-ignition at 850℃
3	Removal of soluble salts and gypsum
3.1	Washing with water
4	Removal of carbonates
4.1	Hydrochloric acid
4.2	Hydrochloric acid/Calcium chloride

Table 2.3: Codes pre-treatment

Code	Description
0	No information
1	No pretreatment
2	Extractions
2.7	Extraction H2O
2.8	Extraction HNO3
2.3	Extraction aqua regia
3	Wet ashings at room pressure (open system)
3.1	Wet ashing HNO3
3.2	Wet ashing HNO3/HF
3.3	Wet ashing HNO3/HClO4
3.4	Wet ashing HNO3/HClO4/HF
3.5	Wet ashing HNO3/H2O2
3.6	Wet ashing HNO3/HClO4 /H2SO4
3.7	Wet ashing HNO3/HClO4/CaCl2
3.8	Wet ashing HNO3/HClO4/H2O2
3.9	Wet ashing HNO3,/HClO4/HCl
3.10	Wet ashing HNO3 /H2SO4
3.11	Wet ashing aqua regia
3.20	Wet ashing HClO4/H2O2
3.21	Wet ashing HClO4/H2SO4
3.31	Wet ashing H2SO4/H2O2
3.32	Wet ashing H2SO4/K2CrO7

3.50	Kjeldahl H2SO4/ Se-catalyst
3.51	Kjeldahl H2SO4/Cu-catalyst
3.52	Kjeldahl H2SO4/Ti-Cu-catalyst
3.53	Kjeldahl H2SO4/Hg-catalyst
4	Pressure digestions (closed system)
4.1	Pressure digestion HNO3
4.2	Pressure digestion HNO3/HF
4.3	Pressure digestion HNO3/HClO4
4.4	Pressure digestion HNO3/HClO4/HF
4.5	Pressure digestion HNO3/H2O2,
5	Microwave pressure digestions (closed system)
5.1	Microwave digestion HNO3
5.2	Microwave digestion HNO3/HF
5.3	Microwave digestion HNO3/HClO4
5.4	Microwave digestion HNO3/HClO4/HF
5.5	Microwave digestion HNO3/H2O2
5.6	Microwave digestion HNO3/H2O2/HF
5.7	Microwave digestion HNO3/H2O2/HCl
5.8	Microwave aqua regia
6	Dry ashings
6.1	Dry ashing dissolution with HNO3
6.2	Dry ashing dissolution with HNO3/MgNO3
6.3	Dry ashing dissolution with HNO3/HF
6.4	Dry ashing dissolution with HNO3/HCl
6.5	Dry ashing dissolution with HCl
6.6	Dry ashing dissolution with HCl/HF
6.7	Dry ashing dissolution with H2SO4
7	Oxygen ashings
7.1	Oxygen ashing Schöniger
7.2	Oxygen ashing Wickbold
7.3	Oxygen ashing calorimetric bomb
9	X-ray-pretreatments and other pretreatments
9.1	Material pressed (pellet)
9.2	Material melted and formed (tablet)
9.5	Melting (NaOH)
2.1	Extraction BaCl2
2.5	Extraction total with LiBO2
2.2	Extraction KCl
2.4	Extraction total with HF/HClO4
2.6	Extraction with Acid Ammonium Oxalate
2.7	Extraction H2O
2.9	Extraction CaCl2
2.11	Single
2.12	Triple

Table 2.4: Codes determination

Code	Description
0	No information
1	No detection

10	Elemental-analyzers
11	Kjeldahl-apparatus
11.1	Kjeldahl-apparatus (Tecator)
11.2	Kjeldahl-apparatus (Gerhardt)
11.3	Kjeldahl-apparatus (Büchi)
12	N-Analyzer
12.1	N-Analyzer (Heraeus/Elementar)
12.2	N-Analyzer (Vario)
12.3	N-Analyzer (Leco)
13	C-Analyzer
13.1	C-Analyzer (Leco)
14	S-Analyzer
14.1	S-Analyzer (Leco)
15	C/N-Analyzer
15.1	C/N-Analyzer (Carlo-Erba=CE Instruments)
15.2	C/N-Analyzer (Leco)
15.3	C/N-Analyzer (Heraeus/Elementar)
15.4	C/N-Analyzer (Vario)
16	C/S-Analyzer
16.1	C/S-Analyzer (Leco)
17	C/N/S-Analyzer
17.1	C/N/S-Analyzer (Leco)
18	C/N/H-Analyzer
18.1	C/N/H-Analyzer (Leco)
18.2	C/H/N-Analyzer (Heraeus/Elementar)
20	Mono-Atom-Spectrometry-Techniques
21	AAS-flame technique
21.1	AAS-flame technique (C2H2/Air)
21.2	AAS-flame technique (C2H2/N2O)
22	AAS-flameless (electrothermal technique)
24	AAS-hydride technique
25	AAS-cold vapor technique
26	AFS-hydride-technique
28	AES-Flame photometer
30	Multi-Atom-Spectrometry-techniques
31	ICP-AES without Ultrasonic nebulisation
32	ICP-AES with Ultrasonic nebulisation
35	ICP-MS
40	Physical techniques
41	X-ray-energy dispersive
42	X-ray-wavelength dispersive
45	Neutron activation analysis (NAA)
47	Gamma-spectroscopy
50	UV-VIS-spectrophotometry-techniques
51	Colorimetric N-Determination
51.1	Indophenol-blue-method
51.2	Flow Injection (FIAS)-NH3-Membrane-diffusion 566 nm
51.3	Continuous flow method, Indophenol blue
52	Colorimetric S-Determination

52.1	Nephelometry
53	Colorimetric P-Determination
53.1	Molybdene-blue-method
53.2	Vanadium-Mo-blue-method
53.3	Continuous flow method, Molybdene-blue
54	Colorimetric B-Determination
54.1	Azomethin - H
54.2	Carmine
60	Ion-chromatographic techniques
61.1	Anion-Chromatography w. chemical suppression
61.2	Anion-Chromatography w. electr. suppression
62.1	Kation-Chromatography w. chemical suppression
62.2	Kation-Chromatography w. electr. suppression
70	Electrochemical methods
71	Conductimetry
71.1	Conductometric titration
72	Potentiometry
72.1	pH
72.2	other ion selective electrodes
73	Potentiometric titrations
74	Stripping potentiometry
75	Voltammetry
76	Polarography
77	Amperometry
78	Electrophoresis
79	Redox potential
80	Classical analytical techniques
81	Gravimetry
82	Titration
82.1	NH4-back titration
82.2	Thiocyanate-titration
82.3	FeNH4SO4-Titration
82.4	Barimetric titration
82.5	AgNO3-Titration
90	other detections
17.2	C/N/S-Analyzer (Heraeus/Elementar)
13.2	TOC Analyzer
13.3	C-Analyzer (Heraeus/Elementar)
15.5	C/N-Analyzer (Hekatech)
17.3	C/N/S-Analyzer (Thermo Electron)
17.4	C/N/S-Analyzer (Carlo-Erba=CE Instruments)
19	C/H/N/S-Analyzer
48	Laser diffraction
52.2	Turbidimetry
55	Colorimetric C-Determination
81.1	Pipette
81.2	Hydrometer
83	Calcimeter (Scheibler unit)
84	Carbon determinations

84.1	Loss on ignition
84.2	Walkley-Black
84.3	Tjurin method
91	Calculation

Annex 3: Reported methods in the 5th FSCC Interlaboratory Comparison

Table 3.1. Reported methods for sieving and milling

PARAMETER	3	6	7	8	10	11	12	13	14	18	21	23	26	30	31	32	34	35	36	37	38	40	42	45	48	53	54	55	56	58	59	60	61	62	63	64	67	68	69	71	77	79	80	81	82	83	84	85
CaCO3	2	1	1	0	1		0	0	2		0	0	0	1	2	1	1	0	2	0	2	1	1		0	2			0		0	1	0	0	1	0	2	0	2	1		2		0	1		0	1
Exchangeable Acidity	1		1	0	1	0		0	1		0		0	1	1	1	1	0	1	0	0	1	1	1	0		0	0	0		0	1			1	0	1	0		1				0		1	1	
Exchangeable Al	1	1	1	0	1	0		0	1		0	0	0	1	1	1	1	0	1	0	0	1	1	1	0		0	0	0	0	0	1			1	0	2	0		1				0	1	1	1	1
Exchangeable Ca	1	1	1	0	1	0	1	0	1		0	0	0	1	1	1	1	0	1	0	0	1	1	1	0		0	0	0	0	0	1			1	0	2	0		1	1			0	1	1	1	1
Exchangeable Fe	1	1	1	0	1	0	0	0	1		0	0	0	1	1	1	1	0	1	0	0	1	1	1	0		0	0	0	0	0	1			1	0	2	0		1	1			0	1	1	1	1
Exchangeable K	1	1	1	0	1	0	0	0	1		0		0	1	1	1	1	0	1	0	0	1	1	1	0		0	0	0	0	0	1		0	1	0	2	0		1	1			0	1	1	1	1
Exchangeable Mg	1	1	1	0	1	0	0	0	1		0	0	0	1	1	1	1	0	1	0	0	1	1	1	0		0	0	0	0	0	1			1	0	2	0		1	1			0	1	1	1	1
Exchangeable Mn	1	1	1	0	1	0	0	0	1		0	0	0	1	1	1	1		1	0	0	1	1	1	0		0	0	0	0	0	1			1	0	2	0		1	1			0	1	1	1	1
Exchangeable Na	1	1	1	0	1	0	0	0	1		0		0	1	1	1	1	0	1	0	0	1	1	1	0		0	0	0	0	0			0	1	0	2	0		1	1			0	1		1	1
Extractable Al	1	1	1	0	1	0		0	1			0	1	1	1	1	1	0	1	0		1		1	2		0	0	0		0	1	0		1	0	2	0	1					0	1	1	1	
Extractable Ca	1	1	1	0	1	0	1	0	1			0	1	1	1	1	1	0	1	0		1		1	2		0	0	0		0	1	0		1	0	2	0	1		1			0	1	1	1	1
Extractable Cd	1	1	1	0	1	0	1	0	1	2			1	1	1	1	1	0	1	0		1	1	1	2		0	0	0		0	1	0		1	0	2	0	1	1	1			0	1	1	1	1
Extractable Cr	1	1	1	0	1	0		0	1	2		0	1	1	1	1	1	0	1	0		1		1	2		0	0	0		0	1	0		1	0	2	0	1	1	1			0	1	1	1	
Extractable Cu	1	1	1	0	1	0	1	0	1	2		0	1	1	1	1	1	0	1	0		1	1	1	2		0	0	0		0	1	0		1	0	2	0	1	1	1			0	1	1	1	1
Extractable Fe	1	1	1	0	1	0	1	0	1			0	1	1	1	1	1	0	1	0		1		1	2		0	0	0		0	1	0		1	0	2	0	1		1			0	1	1	1	
Extractable Hg		1							1			0			1		1	0	1			1			2							1	0		1	0	2	0	1	1				0			2	
Extractable K	1	1	1	0	1	0	1	0	1			0	1	1	1	1	1	0	1	0		1	1	1	2	2	0	0	0		0		0		1	0	2	0	1		1			0	1	1	1	1
Extractable Mg	1	1	1	0	1	0	1	0	1			0	1	1	1	1	1	0	1	0		1		1	2		0	0	0		0	1	0		1	0	2	0	1		1			0	1	1	1	1
Extractable Mn	1	1	1	0	1	0	1	0	1			0	1	1	1	1	1	0	1	0		1	1	1	2		0	0	0		0	1	0		1	0	2	0	1	1	1			0	1	1	1	1
Extractable Na	1	1	1		1	0	1	0	1			0	1	1	1	1	1	0	1	0		1		1	2		0	0	0		0		0			0	2	0	1		1			0	9		1	
Extractable Ni	1	1	1	0	1	0	1	0	1	2		0	1	1	1	1	1	0	1	0		1		1	2		0	0	0		0	1	0		1	0	2	0	1	1	1			0	1	1	1	
Extractable P	1	1	1	0	1	0		0	1	2		0	1	1	1	1	1	0	1	0		1		1	2	2	0	0	0		0	1	0	0	1	0	2	0	1					0		1	1	1
Extractable Pb	1	1	1	0	1	0	1	0	1	2		0	1	1	1	1	1	0	1	0		1	1	1	2		0	0	0		0	1	0		1	0	2	0	1	1	1			0	1	1	1	1
Extractable S	1	1	1	0	1	0		0	1			1	1	1	1	1		1	0			1			2		0	0			2		0		1	0			1		1			0			1	
Extractable Zn	1	1	1	0	1	0	1	0	1	2		0	1	1	1	1	1	0	1	0		1	1	1	2		0	0	0		0	1	0		1	0	2	0	1	1	1			0	1	1	1	1
Free H	1			0	1			0	1		0		0	1	1	1	1	0	1	0	0	1	1		0		0	0	0		0				1	0	2	0		1				0			1	
Moisture	1	1	1	0	1	1		0	1		0	0	0	1	1	1	1		1	0	0	1	0	1	0	2	0	0	0	0	0	1	0		1	0	0	0		1	1	0		0	1	1	1	1
OC	2	1	1	0	1	2	1	2	1	2	0	0	1	1	2	2	1	0	1	0		1	1	9	0	2	0		0		2	1	0	0	1	0	2	0	2	2		2		0	9	1	2	9
Particle size clay	1		1	0	1	0			1		0	0	0		1	1	1		1	0	0	1	1		0	0		0	0	0	0	1	0		1	0	0		1	1		0	0	0	1		1
Particle size sand	1		1	0	1	0			1		0	0	0		1	1	1		1	0	0	1	1		0	0		0	0	0	0	1	0		1	0	0		1	1		0	0	0	1		1
Particle size silt	1		1	0	1	0			1		0	0	0		1	1	1		1	0	0	1	1		0	2		0	0	0	0	1	0		1	0	0		1	1		0	0	0	1		1
pHCaCl2	1	1	1	0	1	1	0	0	1	0	1	0	0	1	1	1	1	0	1	0	0	1	1	1	0	2	0	0	0	0	0	1	1	0	1	0	2	0	1	1	1	0		0	1	1	1	1
pHH2O	1	1	1	0	1	0	0	0	1	0	1	0	0	1	1	1	1	0	1	0	0	1	1	1	0	2	0	0	0		0	1	0	0	1	0	2	0	1	1	1	0		0	1	1	1	1
Reactive Al	1	1	1	0	1	0		1	1				0	1	1	1		0	1	0	0	2			0		0	0	0				0			0	1	0							1	1	
Reactive Fe	1	1	1	0	1	0		1	1				0	1	1	1		0	1	0	0	2			0		0	0	0				0			0	1	0							1	1	
Total Al	1		1					2	1					1		2			1			1			2																			1		1	
Total Ca	1		1					2	1					1		2			1			1			2																			1		1	
Total Fe	1		1					2	1					1		2			1			1			2																			1		1	
Total K	1		1					2	1					1		2			1			1			2																			1		1	
Total Mg	1		1					2	1					1		2			1			1			2																			1		1	
Total Mn	1		1					0	1					1		2			1			1			2																			1		1	
Total N	2	2	1	0	1	2	1	2	1	2	0	0	1	1	2	2	1	0	1	0		1	1	1	2	2	0	0	0		2	1	0	2	1	0		0	2	1		2		0	1		2	9
Total Na	1		1					2	1					1		2			1			1			2																			1		1	

Table 3.2: Reported methods for removal of compounds

PARAMETER	3	6	7	8	10	11	12	13	14	18	21	23	26	30	31	32	34	35	36	37	38	40	42	45	48	53	54	55	56	58	59	60	61	62	63	64	67	68	69	71	77	79	80	81	82	83	84	85
CaCO3	2	1	1	1	1		0	1	1		0	1	1	1	2	1	1	0	1	0	0	1	1		0	4			1		1	1	0	0	1	0	0	0	1	1		0		0	1		0	4
Exchangeable Acidity	1		1	1	1	1		0	1		0		1	1	1	1	1	0	1	0	0	1	1	1	0		1	0	1		1	1			1	0	1	0		1				0		1	1	
Exchangeable Al	1	1	1	1	1	0		1	1		0	1	1	1	1	1	1	0	1	0	0	1	1	1	0		0	0	1	0	1	1			1	0	1	0		1				0	1	1	1	1
Exchangeable Ca	1	1	1	1	1	0	1	1	1		0	1	1	1	1	1	1	0	1	0	0	1	1	1	0		0	0	1	0	1	1			1	0	1	0		1	1			0	1	1	1	1
Exchangeable Fe	1	1	1	1	1	1	0	1	1		0	1	1	1	1	1	1	0	1	0	0	1	1	1	0		0	0	1	0	1	1			1	0	1	0		1	1			0	1	1	1	1
Exchangeable K	1	1	1	1	1	1	0	1	1		0		1	1	1	1	1	0	1	0	0	1	1	1	0		0	0	1	0	1	1		0	1	0	1	0		1	1			0	1	1	1	1
Exchangeable Mg	1	1	1	1	1	1	0	1	1		0	1	1	1	1	1	1	0	1	0	0	1	1	1	0		0	0	1	0	1	1			0	0	1	0		1	1			0	1	1	1	1
Exchangeable Mn	1	1	1	1	1	1	0	1	1		0	1	1	1	1	1	1		1	0	0	1	1	1	0		0	0	1	0	1	1			1	0	1	0		1	1			0	1	1	1	1
Exchangeable Na	1	1	1	1	1	1	0	1	1		0		1	1	1	1	1	0	1	0	0	1	1	1	0		0	0	1	0	1			0	0	0	1	0		1	1			0	1		1	1
Extractable Al	1	1	1	1	1	1		1	1			1	1	1	1	1	1	0	1	0		1		1	0		0	0	1		1	1	0		0	0	1	0	1					0	1	1	1	
Extractable Ca	1	1	1	1	1	1	0	1	1			1	1	1	1	1	1	0	1	0		1		1	0		0	0	1		1	1	0		1	0	1	0	1		1			0	1	1	1	1
Extractable Cd	1	1	1	1	1	1	0	1	1	1			1	1	1	1	1	0	1	0		1	1	1	0		0	0	1		1	1	0		0	0	1	0	1	1	1			0	1	1	1	1
Extractable Cr	1	1	1	1	1	1		1	1	1		1	1	1	1	1	1	0	1	0		1		1	0		0	0	1		1	1	0		1	0	1	0	1	1	1			0	1	1	1	
Extractable Cu	1	1	1	1	1	1	0	1	1	1		1	1	1	1	1	1	0	1	0		1	1	1	0		0	0	1		1	1	0		1	0	1	0	1	1	1			0	1	1	1	1
Extractable Fe	1	1	1	1	1	1	0	0	1			1	1	1	1	1	1	0	1	0		1		1	0		0	0	1		1	1	0		1	0	1	0	1		1			0	1	1	1	
Extractable Hg		1							1			1			1		1	0	1			1			0							1	0		1	0	1	0	1	1				0			1	
Extractable K	1	1	1	1	1	1	0	1	1			1	1	1	1	1	1	0	1	0		1	1	1	0	0	0	0	1		1		0		1	0	1	0	1		1			0	1	1	1	1
Extractable Mg	1	1	1	1	1	1	0	1	1			1	1	1	1	1	1	0	1	0		1		1	0		0	0	1		1	1	0		1	0	1	0	1		1			0	1	1	1	1
Extractable Mn	1	1	1	1	1	1	0	1	1			1	1	1	1	1	1	0	1	0		1	1	1	0		0	0	1		1	1	0		1	0	1	0	1	1	1			0	1	1	1	1
Extractable Na	1	1	1		1	1	0	1	1			1	1	1	1	1	1	0	1	0		1		1	0		0	0	1		1		0			0	1	0	1		1			0	1		1	
Extractable Ni	1	1	1	1	1	1	0	1	1	1		1	1	1	1	1	1	0	1	0		1		1	0		0	0	1		1	1	0		1	0	1	0	1	1	1			0	1	1	1	
Extractable P	1	1	1	1	1	1		1	1	1		1	1	1	1	1	1	0	1	0		1		1	0	0	0	0	1		1	1	0	0	1	0	1	0	1					0		1	1	1
Extractable Pb	1	1	1	1	1	1	0	1	1	1		1	1	1	1	1	1	0	1	0		1	1	1	0		0	0	1		1	1	0		1	0	1	0	1	1	1			0	1	1	1	1
Extractable S	1	1	1	1	1	1		1	1				1	1	1	1	1		1	0		1			0		0	0			1		0		1	0			1		1			0			1	
Extractable Zn	1	1	1	1	1	1	0	1	1	1		1	1	1	1	1	1	0	1	0		1	1	1	0		0	0	1		1	1	0		1	0	1	0	1	1	1			0	1	1	1	1
Free H	1			1	1			1	1		0		1	1	1	1	1	0	1	0	0	1	1		0		0	0	1		1				0	0	1	0		1				0			1	
Moisture	1	1	1	1	0	1		1	1		0	1	1	1	1	1	1		1	0	0	1	1	1	0	0	1	0	1	0	0	1	0		0	0	0	1		1	1	0		0	1	1	1	1
OC	1	4	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0		1	1	1	0	0	1		1		1	1	1	0	4	0	0	0	1	1		4		0	1	1	2	1
Particle size clay	2		1	1	4	0			2		0	2	2		2	4	1		4	0	2	2	2		0	0		2	1	0	2	2	2		2	0	0		4	2		2	2	0	2			2
Particle size sand	2		1	1	4	0			2		0	1	2		2	4	1		4	0	2	2	2		0	0		2	1	0	2	2	2		2	0	0		4	2		2	2	0	2			2
Particle size silt	2		1	1	4	0			2		0	1	2		2	4	1		4	0	2	2	2		0	0		2	1	0	0	2	2		2	0	0		4	2		2	2	0	2			2
pHCaCl2	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	1	0	1	0	1	1	0	0	1	0	1	1	1	1	1	0		0	1	1	1	1
pHH2O	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	1	0	1		1	1	0	0	1	0	1	1	1	1	1	0		0	1	1	1	1
Reactive Al	1	1	1	1	1	1		1	1				1	1	1	1		0	1	0	0	1			0		0	0	1				0			0	1	0								1	1	
Reactive Fe	1	1	1	1	1	1		1	1				1	1	1	1		0	1	0	0	1			0		0	0	1				0			0	1	0								1	1	
Total Al	1		1					1	1					1		1			1			1			0																			2		1	
Total Ca	1		1					1	1					1		1			1			1			0																			2		1	
Total Fe	1		1					1	1					1		1			1			1			0																			2		1	
Total K	1		1					1	1					1		1			1			1			0																			2		1	
Total Mg	1		1					1	1					1		1			1			1			0																			2		1	
Total Mn	1		1					1	1					1		1			1			1			0																			2		1	
Total N	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0		1	1	1	0	0	1	0	1		1	1	1	0	0	0		0	1	1		0		0	1		2	1
Total Na	1		1					1	1					1		1			1			1			0																			2		1	

Table 3.3: Reported methods for pre-treatment

PARAMETER	3	6	7	8	10	11	12	13	14	18	21	23	26	30	31	32	34	35	36	37	38	40	42	45	48	53	54
CaCO3	1	1	1	1	1		1	1	1		0	6.5	0	1	1	1	1	1	3	2	0	1	1		0	0	
Exchangeable Acidity	2.11		2.1	2.11	2.1	2		0	2.11		2.1		2.12	2.11	2.11	2.1	2.11	2.1	2.1	2.11	2.1	2.11	2.1	2.1	0		2.1
Exchangeable Al	2.11	2.1	2.1	2.11	2.1	2		2.1	2.11		2.1	2.1	2.12	2.11	2.11	2.1	2.11	2.1	2.1	2.11	2.1	2.11	2.1	2.1	0		2.1
Exchangeable Ca	2.11	2.1	2.1	2.11	2.1	2	2.1	2.1	2.11		2.1	2.1	2.12	2.11	2.11	2.1	2.11	2.1	2.1	2.11	2.1	2.11	2.1	2.1	0		2.1
Exchangeable Fe	2.11	2.1	2.1	2.11	2.1	2	2.1	2.1	2.11		2.1	2.1	2.12	2.11	2.11	2.1	2.11	2.1	2.1	2.11	2.1	2.11	2.1	2.1	0		2.1
Exchangeable K	2.11	2.1	2.1	2.11	2.1	2	2.1	2.1	2.11		2.1		2.12	2.11	2.11	2.1	2.11	2.1	2.1	2.11	2.1	2.11	2.1	2.1	0		2.1
Exchangeable Mg	2.11	2.1	2.1	2.11	2.1	2	2.1	2.1	2.11		2.1	2.1	2.12	2.11	2.11	2.1	2.11	2.1	2.1	2.11	2.1	2.11	2.1	2.1	0		2.1
Exchangeable Mn	2.11	2.1	2.1	2.11	2.1	2	2.1	2.1	2.11		2.1	2.1	2.12	2.11	2.11	2.1	2.11		2.1	2.11	2.1	2.11	2.1	2.1	0		2.1
Exchangeable Na	2.11	2.1	2.1	2.11	2.1	2	2.1	2.1	2.11		2.1		2.12	2.11	2.11	2.1	2.11	2.1	2.1	2.11	2.1	2.11	2.1	2.1	0		2.1
Extractable Al	2.3	2.3	2.3	3.11	3.11	2.3		2.3	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3		2.3	2.3		5.8
Extractable Ca	2.3	2.3	2.3	3.11	3.11	2.3	5.8	2.3	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3		2.3	2.3		5.8
Extractable Cd	2.3	2.3	3.11	3.11	3.11	2.3	5.8	2.3	2.3	5.7			2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3	2	2.3	2.3		5.8
Extractable Cr	2.3	2.3	3.11	3.11	3.11	2.3		2.3	2.3	5.7		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3		2.3	2.3		5.8
Extractable Cu	2.3	2.3	3.11	3.11	3.11	2.3	5.8	2.3	2.3	5.7		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3	2	2.3	2.3		5.8
Extractable Fe	2.3	2.3	3.11	3.11	3.11	2.3	5.8	2.3	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3		2.3	2.3		5.8
Extractable Hg		2.3							2.3			1			2.3		1	2.3	2.3			2.3			2.3		
Extractable K	2.3	2.3	3.11	3.11	3.11	2.3	5.8	2.3	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3	2	2.3	2.3	2	5.8
Extractable Mg	2.3	2.3	3.11	3.11	3.11	2.3	5.8	2.3	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3		2.3	2.3		5.8
Extractable Mn	2.3	2.3	3.11	3.11	3.11	2.3	5.8	2.3	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3	2	2.3	2.3		5.8
Extractable Na	2.3	2.3	3.11		3.11	2.3	2.3	2.3	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3		2.3	2.3		5.8
Extractable Ni	2.3	2.3	3.11	3.11	3.11	2.3	5.8	2.3	2.3	5.7		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3		2.3	2.3		5.8
Extractable P	2.3	2.3	3.11	3.11	3.11	2.3		2.3	2.3	5.7		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3		2.3	2.3	2	5.8
Extractable Pb	2.3	2.3	3.11	3.11	3.11	2.3	5.8	2.3	2.3	5.7		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3	2	2.3	2.3		5.8
Extractable S	2.3	2.3	3.11	3.11	3.11	2.3		2.3	2.3				2.3	2.3	2.3	2.3	1		2.3	5.7		2.3			2.3		5.8
Extractable Zn	2.3	2.3	3.11	3.11	3.11	2.3	2.3	2.3	2.3	5.7		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	5.7		2.3	2	3.11	2.3		5.8
Free H	2.11			2.11	2.9			2.1	2.11		2.1		2.12	2.11	2.11	2.1	2.11	2.1	2.1	2.11	2.1	2.11	2.1		0		2.1
Moisture	1	1	1	1	0	1		0	1		0	1	1	1	1	1	1		1	0	0	1	1	1	0	1	1
OC	1	1	1	1	1	0	1	1	1	3.32	0	1	0	1	1	1	1	1	6	0		1	1	1	0	0	1
Particle size clay	1		1	1	1	0			1		0	0	0		1	1	2		0	0	0	1	1		0	2	
Particle size sand	1		1	1	1	0			9.5		0	0	0		1	1	2		0	0	0	1	1		0	0	
Particle size silt	1		1	1	1	0			0		0	0	0		1	1	2		0	0	0	1	1		0	2	
pHCaCl2	2.9	1	1	1	1	2.9	1	2.9	2.9	2.9	0	2.9	0	1	2.9	2.9	2.9	2.9	2.9	2.9	0	1	2.9	2.9	2.9	2.9	1
pHH2O	2.7	1	1	1	1	2.7	1	2.7	2.7	2.7	0	2.7	0	1	2.7	1	2.7	2.7	2.7	2.7	0	1	2.7	2.7	2.9	2.7	0
Reactive Al	2.6	2.6	2.6	2.6	2.2	2.6		2.6	2.6				2.6	2.6	2.6	2.6		2.6	2.6	2.6	2.6	2.6			0		2.6
Reactive Fe	2.6	2.6	2.6	2.6	2.2	2.6		2.6	2.6				2.6	2.6	2.6	2.6		2.6	2.6	2.6	2.6	2.6			0		2.6
Total Al	4.2		4.2					4.2	4.2					4.2		5.2			5.2			2.4			4.2		
Total Ca	4.2		4.2					4.2	4.2					4.2		5.2			5.2			2.4			4.2		
Total Fe	4.2		4.2					4.2	4.2					4.2		5.2			5.2			2.4			4.2		
Total K	4.2		4.2					4.2	4.2					4.2		5.2			5.2			2.4			4.2		
Total Mg	4.2		4.2					4.2	4.2					4.2		5.2			5.2			2.4			4.2		
Total Mn	4.2		4.2					4.2	4.2					4.2		5.2			5.2			2.4			4.2		
Total N	1	1	1	1	3.52	0	1	0	1	3.5	0	1	3.51	1	1	1	1	3.51	6	3.51		1	1	1	0	1	1
Total Na	4.2		4.2					4.2	4.2					4.2		5.2			5.2			2.4			4.2		

PARAMETER	55	56	58	59	60	61	62	63	64	67	68	69	71	77	79	80	81	82	83	84	85
CaCO3		1		1	1	0	0	1	0	0	6	0	1		0		0	1		0	1
Exchangeable Acidity	2.11	2.11		2.11	2.1			2.1	2.1	2.1	0		2.1				0		1	2.11	
Exchangeable Al	2.11	2.11	0	2.11	2.1			2.1	2.1	2.1	2.1		2.1				0	2.1	1	2.11	2.1
Exchangeable Ca	2.11	2.11	0	2.11	2.1			2.1	2.1	2.1	2.1		2.1	2.1			0	2.1	1	2.11	2.1
Exchangeable Fe	2.11	2.11	0	2.11	2.1			2.1	2.1	2.1	2.1		2.1	2.1			0	2.1	1	2.11	2.1
Exchangeable K	2.11	2.11	0	2.11	2.1		0	2.1	2.1	2.1	2.1		2.1	2.1			0	2.1	1	2.11	2.1
Exchangeable Mg	2.11	2.11	0	2.11	2.1			2.1	2.1	2.1	2.1		2.1	2.1			0	2.1	1	2.11	2.1
Exchangeable Mn	2.11	2.11	0	2.11	2.1			2.1	2.1	2.1	2.1		2.1	2.1			0	2.1	1	2.11	2.1
Exchangeable Na	2.11	2.11	0	2.11			0	2.1	2.1	2.1	2.1		2.1	2.1			0	2.1		2.11	2.1
Extractable Al	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3					0	2.3	1	2.3	
Extractable Ca	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3		2.3			0	2.3	1	2.3	2.3
Extractable Cd	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3	2.3	2.3			0	2.3	1	2.3	2.3
Extractable Cr	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3	2.3	2.3			0	2.3	1	2.3	
Extractable Cu	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3	2.3	2.3			0	2.3	1	2.3	2.3
Extractable Fe	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3		2.3			0	2.3	1	2.3	
Extractable Hg					2.3	0		5.8	2.3	2.3	2.3	2.3	2.3				0			1	
Extractable K	5.8	3.11		2.3		2.3		5.8	2.3	2.3	2.3	2.3		2.3			0	2.3	1	2.3	2.3
Extractable Mg	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3		2.3			0	2.3	1	2.3	2.3
Extractable Mn	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3	2.3	2.3			0	2.3	1	2.3	2.3
Extractable Na	5.8	3.11		2.3		2.3			2.3	2.3	2.3	2.3		2.3			0	2.3		2.3	
Extractable Ni	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3	2.3	2.3			0	2.3	1	2.3	
Extractable P	5.8	3.11		2.3	2.3	2.3	0	5.8	2.3	2.3	2.3	2.3					0		1	2.3	2.3
Extractable Pb	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3	2.3	2.3			0	2.3	1	2.3	2.3
Extractable S	5.8			1		2.3		5.8	2.3			2.3		2.3			0			2.3	
Extractable Zn	5.8	3.11		2.3	2.3	2.3		5.8	2.3	2.3	2.3	2.3	2.3	2.3			0	2.3	1	2.3	2.3
Free H	2.11	2.11		2.11				2.1	2.1	2.1	2.1		2.1				0			2.11	
Moisture	0	1	0	1	1	0		0	0	0	1		1	1	1		0	1	1	1	0
OC		1		1	3.32	0	0	1	0	0	0	1	1		0		0	1	1	7	1
Particle size clay	0	1	0	1	1	0		0	3.31	0		1	1		0	0	0	1			1
Particle size sand	0	1	0	0	1	0		0	3.31	0		1	1		0	0	0	1			1
Particle size silt	0	1	0	0	1	0		0	3.31	0		1	1		0	0	0	1			1
pHCaCl2	0	1	0	2.9	1	2.9	0	2.9	2.9	2.9	1	2.9	2.9	2.9	1		0	2.9	1	2.9	2.9
pHH2O	0	1		2	1	2.7	0	2	2.7	2.7	1	2.7	2.7	2.7	1		0	2.7	1	2.7	2.7
Reactive Al	2.6	2.6				2.6			2.6	2.6	0								1	2.6	
Reactive Fe	2.6	2.6				2.6			2.6	2.6	0								1	2.6	
Total Al																		2.4		2.4	
Total Ca																		2.4		2.4	
Total Fe																		2.4		2.4	
Total K																		2.4		2.4	
Total Mg																		2.4		2.4	
Total Mn																		2.4		2.4	
Total N	0	1		1	1	0	3.51	0	0		0	1	3.52		0		0	3.51		7	3.5
Total Na																		2.4		2.4	

Table 3.4: Reported methods for determination

PARAMETER	3	6	7	8	10	11	12	13	14	18	21	23	26	30	31	32	34	35	36	37	38	40	42	45	48	53	54
CaCO3	15	15	83	83	0		83	83	83		82	83	83	13	13	83	90	13	70	73	83	83	83		13	83	
Exchangeable Acidity	91		72	91	82	73		91	31		82		82	91	72	91	82	73	91	82	82	82	82	72	0		82
Exchangeable Al	31	31	31	31	31	31		31	31		31	31	31	31	31	31	31	31	31	31	21	31	21	21	31		31
Exchangeable Ca	31	31	31	31	31	31	21	31	31		31	21	31	31	31	31	31	31	31	31	21	31	21	21	31		31
Exchangeable Fe	31	32	31	31	31	31	21	31	31		31	21	31	31	31	31	31	31	31	31	21	31	21	21	31		31
Exchangeable K	31	31	31	31	31	31	21	21	31		31		31	31	31	31	21	31	31	31	21	31	28	21	31		31
Exchangeable Mg	31	31	31	31	31	31	21	31	31		31	21	31	31	31	31	31	31	31	31	21	31	21	21	31		31
Exchangeable Mn	31	32	31	31	31	31	21	31	31		31	21	31	31	31	31	31		31	31	21	31	21	21	31		31
Exchangeable Na	31	31	31	31	31	31	21	21	31		31		31	31	31	31	21	31	31	31	21	21	21	21	31		31
Extractable Al	31	31	31	31	31	31		31	31			31	31	31	31	31	31	31	31	31		31		21	31		31
Extractable Ca	31	31	31	31	31	31	21	31	31			31	31	31	31	31	31	31	31	31		31		21	31		31
Extractable Cd	22	31	31	31	31	31	21	31	22	21			31	31	35	35	22	31	22	31		31	21	31	31		31
Extractable Cr	32	31	31	31	31	31		31	21	21		31	31	31	31	35	31	31	31	31		31		31	31		31
Extractable Cu	32	31	31	31	31	31	21	31	21	21		31	31	31	35	35	21	31	31	31		31	21	31	31		31
Extractable Fe	31	31	31	31	31	31	21	31	31			31	31	31	31	31	31	31	31	31		31		21	31		31
Extractable Hg		31							25			25			25		20	25	26			26			0		
Extractable K	31	31	31	31	31	31	21	31	31			31	31	31	31	31	31	31	31	31		21	28	21	31	50	31
Extractable Mg	31	31	31	31	31	31	21	31	31			31	31	31	31	31	31	31	31	31		31		21	31		31
Extractable Mn	31	31	31	31	31	31	21	31	31			31	31	31	31	31	31	31	31	31		31	21	21	31		31
Extractable Na	31	31	31		31	31	21	31	31			31	31	31	31	31	31	31	31	31		31		21	31		31
Extractable Ni	32	31	31	31	31	31	21	31	21	21		31	31	31	31	35	21	31	31	31		31		31	31		31
Extractable P	31	31	31	31	31	31		31	31	50		31	31	31	31	31	31	31	31	31		31		31	31	50	31
Extractable Pb	32	31	31	31	31	31	21	31	21	21		31	31	31	35	35	21	31	31	31		31	21	31	31		31
Extractable S	31	31	31	31	31	31		31	31				31	31	31	31	14		31	31		31			31		31
Extractable Zn	31	31	31	31	31	31	21	31	21	21		31	31	31	31	31	31	31	31	31		31	21	31	31		31
Free H	91			72	82			91	72		82		82	91	72	91	72	73	91	82	82	82	82		0		82
Moisture	81	1	81	81	0	0		81	81		0	81	0	81	81	81	91		81	81	0	80	81	91	0	90	81
OC	15	15	17	15	13	17	17	15	15	50	12	17	13	15	13	15	17	13	15	13	0	13	15	17	13	91	13
Particle size clay	90		83	81	81	0			81		81	81	81		81	81	81		81	81	81	81	90		0	81	
Particle size sand	90		83	81	0	0			81		81	90	81		81	81	81		81	81	0	81	90		0	81	
Particle size silt	90		83	81	81	0			81		81	81	81		81	81	81		81	81	81	81	90		0	81	
pHCaCl2	72	72	72	72	0	72	72	72	72	80	72	72	72	72	72	72	72	72	72	80	0	80	70	72	0	0	72
pHH2O	72	72	72	72	0	72	72	72	72	80	72	72	72	72	72	72	72	72	72	80	0	80	70	72	0	80	72
Reactive Al	31	31	31	31	31	31		31	31				31	31	31	31		31	31	31	21	31			31		31
Reactive Fe	31	31	31	31	31	31		31	31				31	31	31	31		31	31	31	21	31			31		31
Total Al	31		31					31	31					31		31			31			31			31		
Total Ca	31		31					31	31					31		31			31			31			31		
Total Fe	31		31					31	31					31		31			31			31			31		
Total K	31		31					31	31					31		31			31			31			31		
Total Mg	31		31					31	31					31		31			31			31			31		
Total Mn	31		31					31	31					31		31			31			31			31		
Total N	15	15	17	15	82	17	17	15	15	82	12	17	11	15	12	15	17	11	15	11		12	15	17	15	12	12
Total Na	31		31					31	31					31		31			31			31			31		

PARAMETER	55	56	58	59	60	61	62	63	64	67	68	69	71	77	79	80	81	82	83	84	85
CaCO3		90		83	73	84	0	83	83	13	13	83	83		91		0	83		91	83
Exchangeable Acidity	82	31		91	72			82	82	91	91		73				0		82	82	
Exchangeable Al	31	31	21	21	31			31	31	31	31		21				0	21	21	31	31
Exchangeable Ca	31	31	21	21	31			31	31	31	31		21	21			0	21	21	31	31
Exchangeable Fe	31	31	21	21	31			31	31	31	31		21	21			0	21	21	31	31
Exchangeable K	31	31	21	21	31		0	31	31	31	31		21	21			0	28	21	31	31
Exchangeable Mg	31	31	21	21	31			31	31	31	31		21	21			0	21	21	31	31
Exchangeable Mn	31	31	21	21	31			31	31	31	31		21	21			0	21	21	31	31
Exchangeable Na	31	31	21	21			0	31	31	31	31		21	21			0	28		31	31
Extractable Al	31	31		21	31	31		31	31	31	31	31					0	21	21	31	
Extractable Ca	31	31		21	31	31		31	31	31	31	31		21			0	21	21	31	31
Extractable Cd	31	31		22	31	35		31	31	35	21	35	21	21			0	21	21	31	31
Extractable Cr	31	31		21	31	35		31	31	31	31	35	21	21			0	21	21	31	
Extractable Cu	31	31		21	31	35		31	31	31	31	35	21	21			0	21	21	31	31
Extractable Fe	31	31		21	31	31		31	31	31	31	31		21			0	21	21	31	
Extractable Hg					90	0		25	25	25	25	24	25				0			22	
Extractable K	31	31		21		31		28	31	31	31	31		21			0	28	21	31	31
Extractable Mg	31	31		21	31	31		31	31	31	31	31		21			0	21	21	31	31
Extractable Mn	31	31		21	31	31		31	31	31	31	35	21	21			0	21	21	31	31
Extractable Na	31	31		21		31			31	31	31	35		21			0	28		31	
Extractable Ni	31	31		21	31	35		31	31	31	31	35	21	21			0	21	21	31	
Extractable P	31	31		51	31	31	0	31	53	31	31	31					0		50	31	31
Extractable Pb	31	31		22	31	35		31	31	35	21	35	21	21			0	21	21	31	31
Extractable S	31			17		31		31	17			31		52			0			31	
Extractable Zn	31	31		21	31	31		31	31	31	31	35	21	21			0	21	21	31	31
Free H	91	31		72				82	82	70	72		73				0			82	
Moisture	81	90	81	81	90	0		81	0	81	81		81	81	0		0	90	91	91	0
OC		17		91	84	17	0	13	13	13	13	15	13		15		0	84	84	17	84
Particle size clay	81	81	0	81	81	0		81	81	0		81	81		0	0	0	81			81
Particle size sand	81	90	0	81	81	0		81	81	0		81	81		0	0	0	81			81
Particle size silt	81	91	0	0	81	0		82	81	0		81	81		0	0	0	81			81
pHCaCl2	72	70	72	72	72	0	0	72	70	70	72	70	72	72	0		0	72	72	72	72
pHH2O	72	70		72	72	0	0	72	70	70	72	70	72	72	0		0	72	72	72	72
Reactive Al	31	31				31			31	31	31								21	31	
Reactive Fe	31	31				31			31	31	31								21	31	
Total Al																		21		31	
Total Ca																		21		31	
Total Fe																		21		31	
Total K																		28		31	
Total Mg																		21		31	
Total Mn																		21		31	
Total N	18	17		17	15	17	11	11	13		12	15	11		15		0	11		17	11
Total Na																		28		31	

Annex 4: Splus output of the in depth statistical analysis

Group	Element	sample	Labx	Step	Ntot	Nlab	Neff	Mgen	Sgen	Min	Max	Fval	Pval	sRep	sLab	sRpr	CV	Plab
0	Moisture	A	k32;h42;k21;k82;k61;k55;k79	5	105	35	3	0.92	0.19	0.37	1.16	100.14	0.00	0.03	0.18	0.19	20.33	97.06
0	Moisture	B	hk42;k60;k82	2	117	39	3	0.72	0.16	0.30	1.00	62.52	0.00	0.04	0.16	0.16	22.57	95.35
0	Moisture	C	h11;k77;k82	3	117	39	3	1.74	0.29	0.83	2.27	42.90	0.00	0.08	0.29	0.30	17.08	93.32
0	Moisture	D	h11;k21;k82	3	117	39	3	1.18	0.19	0.67	1.77	61.11	0.00	0.04	0.19	0.19	16.42	95.25
0	Moisture	E	k82;k60;k61	4	114	38	3	7.51	3.08	0.80	13.43	1129.79	0.00	0.16	3.07	3.08	40.96	99.73
1	Particle size clay	A	h34	2	99	33	3	5.20	1.72	1.38	8.97	31.05	0.00	0.54	1.70	1.78	34.22	90.92
1	Particle size clay	B	h34;k59;k60	2	93	31	3	9.56	1.91	6.12	14.69	58.33	0.00	0.43	1.90	1.94	20.33	95.03
1	Particle size clay	C	k82;k37;k60	4	93	31	3	22.62	6.39	5.88	37.15	145.10	0.00	0.92	6.37	6.43	28.45	97.96
1	Particle size clay	D	k59;k11	3	96	32	3	26.01	3.66	15.98	35.86	99.67	0.00	0.63	3.64	3.69	14.20	97.05
1	Particle size sand	A	h34;k53;k60	3	93	31	3	84.71	4.12	72.97	92.98	74.94	0.00	0.82	4.09	4.18	4.93	96.10
1	Particle size sand	B	k85;k59	3	96	32	3	45.68	14.05	10.83	80.23	450.15	0.00	1.15	14.04	14.08	30.83	99.34
1	Particle size sand	C		1	102	34	3	43.64	8.45	17.05	65.01	79.87	0.00	1.64	8.40	8.55	19.60	96.34
1	Particle size sand	D	k60;h38;k85	3	93	31	3	37.02	6.06	24.60	53.01	150.88	0.00	0.85	6.04	6.10	16.48	98.04
1	Particle size silt	A		1	102	34	3	10.47	3.91	4.53	21.67	67.80	0.00	0.82	3.88	3.97	37.89	95.70
1	Particle size silt	B	k85	2	99	33	3	43.84	12.49	10.93	64.04	218.05	0.00	1.46	12.46	12.54	28.62	98.64
1	Particle size silt	C	k85;k60;k23	4	93	31	3	34.26	7.88	21.73	56.46	181.67	0.00	1.01	7.86	7.92	23.13	98.37
1	Particle size silt	D	k60;h55;k85;h38	4	90	30	3	37.12	4.92	25.71	48.63	74.69	0.00	0.99	4.89	4.99	13.43	96.09
2	pHCaCl2	A	k42;k82	2	135	45	3	4.15	0.10	3.87	4.47	44.40	0.00	0.03	0.10	0.10	2.48	93.53
2	pHCaCl2	B	k62;k63;k26;k82;k83;k42	5	123	41	3	3.83	0.09	3.57	4.10	176.78	0.00	0.01	0.09	0.09	2.35	98.32
2	pHCaCl2	C	k62;k67;k36;k42	4	129	43	3	7.32	0.20	6.89	7.74	84.44	0.00	0.04	0.20	0.20	2.72	96.53
2	pHCaCl2	D	k62;h71k;k42	3	132	44	3	4.00	0.08	3.79	4.20	43.43	0.00	0.02	0.08	0.08	2.04	93.40
2	pHCaCl2	E	h18;k62;k63;k21;k40;k61;k81;k42;h85;k48	7	111	37	3	2.84	0.06	2.68	3.00	188.06	0.00	0.01	0.06	0.06	2.29	98.42
2	pHH2O	A	k42;k62;h71	2	129	43	3	4.62	0.15	4.23	5.05	64.74	0.00	0.03	0.15	0.16	3.40	95.51
2	pHH2O	B	k62;k63	3	132	44	3	4.22	0.14	3.90	4.70	94.38	0.00	0.03	0.14	0.15	3.45	96.89
2	pHH2O	C	k62	2	135	45	3	7.88	0.26	7.09	8.33	100.74	0.00	0.05	0.26	0.27	3.37	97.08
2	pHH2O	D	h71	2	135	45	3	4.57	0.17	4.09	5.01	39.83	0.00	0.05	0.17	0.18	3.89	92.83
2	pHH2O	E	h85	2	135	45	3	4.00	0.23	3.37	4.41	51.72	0.00	0.05	0.22	0.23	5.75	94.42
3	CaCO3	C		1	117	39	3	148.42	67.05	14.10	216.37	521.71	0.00	5.08	66.99	67.18	45.26	99.43
4	OC	A	hk42;hk81;h83k;k61	4	114	38	3	7.97	1.12	5.33	10.40	29.81	0.00	0.36	1.11	1.16	14.57	90.57
4	OC	B	hk81	2	123	41	3	6.71	1.13	4.43	10.40	35.56	0.00	0.33	1.12	1.16	17.34	92.01
4	OC	C	h81	2	120	40	3	27.89	7.95	3.93	51.63	184.47	0.00	1.01	7.93	8.00	28.67	98.39
4	OC	D	hk60;hk81;hk63;k82;k8;h83;h53;k18;k31	7	96	32	3	3.83	0.35	3.09	4.77	17.80	0.00	0.14	0.34	0.37	9.58	84.85
4	OC	E	k35;hk85;h81	3	114	38	3	497.39	37.30	403.60	566.67	182.47	0.00	4.78	37.20	37.50	7.54	98.37

Group	Element	sample	Labx	Step	Ntot	Nlab	Neff	Mgen	Sgen	Min	Max	Fval	Pval	sRep	sLab	sRpr	CV	Plab
5	Total N	A	k42;k55;hk81;k82	2	117	39	3	0.49	0.10	0.34	0.80	29.83	0.00	0.03	0.10	0.11	21.89	90.57
5	Total N	B		1	126	42	3	0.44	0.12	0.10	0.70	61.13	0.00	0.03	0.12	0.12	26.99	95.25
5	Total N	C	hk82;hk12;h53;k55;h64;h59	6	111	37	3	2.41	0.10	2.20	2.60	7.37	0.00	0.06	0.09	0.11	4.72	68.00
5	Total N	D		1	129	43	3	0.70	0.15	0.30	1.03	37.94	0.00	0.04	0.15	0.15	21.84	92.49
5	Total N	E	k62	2	126	42	3	9.59	0.97	7.30	12.77	101.24	0.00	0.17	0.97	0.98	10.23	97.09
6	Exchangeable Acidity	A	k81	2	96	32	3	1.43	0.56	0.03	2.55	162.89	0.00	0.08	0.56	0.57	39.74	98.18
6	Exchangeable Acidity	B	h32;k71;k42;h7	3	87	29	3	3.23	0.52	1.89	4.34	84.83	0.00	0.10	0.51	0.52	16.12	96.55
6	Exchangeable Acidity	C	hk67;k26;h81;k59	4	24	8	3	0.12	0.10	0.00	0.32	309.76	0.00	0.01	0.10	0.10	81.05	99.04
6	Exchangeable Acidity	D	k56	2	96	32	3	1.88	0.56	0.09	2.88	128.49	0.00	0.09	0.56	0.57	30.00	97.70
6	Exchangeable Acidity	E	hk56;k67;k71;k63;k64	6	78	26	3	6.93	2.97	2.24	14.13	1755.16	0.00	0.12	2.97	2.97	42.90	99.83
6	Exchangeable Al	A	k85	2	114	38	3	1.15	0.40	0.20	2.46	172.93	0.00	0.05	0.40	0.40	34.95	98.29
6	Exchangeable Al	B	k42;k35;k85	4	108	36	3	2.70	0.72	0.63	3.85	242.31	0.00	0.08	0.72	0.72	26.68	98.77
6	Exchangeable Al	C	h81	2	42	14	3	0.05	0.05	0.00	0.13	100.33	0.00	0.01	0.04	0.05	90.77	97.07
6	Exchangeable Al	D	k82	2	114	38	3	1.53	0.45	0.41	2.11	172.96	0.00	0.06	0.44	0.45	29.22	98.29
6	Exchangeable Al	E	hk30;k14	3	102	34	3	0.72	0.26	0.27	1.11	82.07	0.00	0.05	0.26	0.27	37.19	96.43
6	Exchangeable Ca	A	hk77;hk38;k59h;hk42;hk64;k67;hk84;h81;k82;h12	7	78	26	3	0.06	0.04	0.02	0.15	76.21	0.00	0.01	0.04	0.04	62.59	96.16
6	Exchangeable Ca	B	hk77;h38;k59;hk42;hk84;h64;k67;k7;h81;k82	6	84	28	3	0.12	0.05	0.05	0.26	63.43	0.00	0.01	0.05	0.05	38.55	95.41
6	Exchangeable Ca	C	hk77;k85;k59;k71;k82;k14	6	102	34	3	17.38	3.15	8.72	25.93	355.21	0.00	0.29	3.15	3.16	18.18	99.16
6	Exchangeable Ca	D	hk77;k85h;hk12;hk38;hk42;k82;h84;k14;k63h;hk64;k67;h81	6	84	28	3	0.12	0.05	0.02	0.25	103.03	0.00	0.01	0.05	0.05	39.38	97.14
6	Exchangeable Ca	E	hk77;k71;k14	4	108	36	3	4.06	1.43	1.57	8.50	261.47	0.00	0.15	1.43	1.44	35.42	98.86
6	Exchangeable Fe	A	hk77;hk81;hk82;h12;k63;hk26;h60	6	81	27	3	0.02	0.01	0.00	0.05	21.68	0.00	0.00	0.01	0.01	64.29	87.33
6	Exchangeable Fe	B	hk77;k71;h81;hk82;k85	3	102	34	3	0.11	0.03	0.04	0.19	81.51	0.00	0.01	0.03	0.03	29.50	96.41
6	Exchangeable Fe	C	hk77;h81;hk82	3	48	16	3	0.01	0.01	0.00	0.03	52.70	0.00	0.00	0.01	0.01	89.27	94.52
6	Exchangeable Fe	D	hk77;h81;hk82;k35	4	54	18	3	0.01	0.01	0.00	0.05	62.13	0.00	0.00	0.01	0.01	103.11	95.32
6	Exchangeable Fe	E	hk77;k71;k85	4	102	34	3	0.21	0.10	0.06	0.51	509.34	0.00	0.01	0.10	0.10	47.08	99.41
6	Exchangeable K	A	hk62;hk77;k34;h82;h64;h81	5	93	31	3	0.03	0.01	0.01	0.06	67.10	0.00	0.00	0.01	0.01	48.67	95.66
6	Exchangeable K	B	hk62;hk77;h82;k85h;h64;k71;k42	5	99	33	3	0.07	0.02	0.03	0.14	72.06	0.00	0.00	0.02	0.02	33.27	95.95
6	Exchangeable K	C	hk77;k85;k63;hk62;hk82;k34;h64;k71	7	96	32	3	0.69	0.20	0.06	1.19	165.43	0.00	0.03	0.20	0.20	29.18	98.21
6	Exchangeable K	D	hk77;hk62;hk82;h64;k71	4	105	35	3	0.20	0.06	0.03	0.38	78.96	0.00	0.01	0.06	0.06	31.47	96.29
6	Exchangeable K	E	hk77;hk82;h62;k85	3	102	34	3	0.21	0.07	0.09	0.45	69.17	0.00	0.02	0.07	0.07	34.74	95.78

Group	Element	sample	Labx	Step	Ntot	Nlab	Neff	Mgen	Sgen	Min	Max	Fval	Pval	sRep	sLab	sRpr	CV	Plab
6	Exchangeable Mg	A	hk77;k67;k82;hk84;hk81;h64;h38	6	96	32	3	0.03	0.02	0.01	0.08	32.49	0.00	0.00	0.02	0.02	58.42	91.30
6	Exchangeable Mg	B	hk12;hk77;k67;h84;hk14;k35;hk81;h64;h38	6	93	31	3	0.05	0.02	0.03	0.10	64.39	0.00	0.00	0.02	0.02	34.04	95.48
6	Exchangeable Mg	C	hk77;h10;k85;k71	4	105	35	3	0.87	0.11	0.56	1.06	81.80	0.00	0.02	0.11	0.11	12.57	96.42
6	Exchangeable Mg	D	hk77;k42;hk81;k34;h84	4	105	35	3	0.12	0.04	0.08	0.21	46.34	0.00	0.01	0.04	0.04	31.82	93.79
6	Exchangeable Mg	E	hk77;k71;k85;k14;k23;k30;k59;k67	7	93	31	3	3.11	0.95	1.24	4.55	910.09	0.00	0.05	0.95	0.95	30.45	99.67
6	Exchangeable Mn	A	hk77;h11;k85	3	105	35	3	0.05	0.01	0.02	0.08	26.19	0.00	0.00	0.01	0.01	29.15	89.36
6	Exchangeable Mn	B	hk77;k42	3	105	35	3	0.03	0.01	0.01	0.05	33.03	0.00	0.00	0.01	0.01	27.61	91.44
6	Exchangeable Mn	C	hk77;hk11;hk12;h81	4	57	19	3	0.00	0.00	0.00	0.01	641.82	0.00	0.00	0.00	0.00	85.20	99.53
6	Exchangeable Mn	D	hk77;k85;k71	4	111	37	3	0.19	0.05	0.05	0.29	100.77	0.00	0.01	0.05	0.05	25.65	97.08
6	Exchangeable Mn	E	hk77;k56;k68	3	99	33	3	0.05	0.02	0.02	0.08	139.41	0.00	0.00	0.02	0.02	36.58	97.88
6	Exchangeable Na	A	hk77;k67;hk82;hk64;h81k;k62;h84;k26;h6;k71	7	51	17	3	0.02	0.02	0.01	0.07	100.72	0.00	0.00	0.02	0.02	88.71	97.08
6	Exchangeable Na	B	hk77;hk64;hk82;hk62;k67;h81;hk85;k42;h84;h6	7	72	24	3	0.04	0.02	0.02	0.10	60.40	0.00	0.00	0.02	0.02	53.30	95.19
6	Exchangeable Na	C	hk77;k67;hk82;hk84;k26;hk64;hk81;h10;k63;k71	7	66	22	3	0.04	0.03	0.01	0.15	675.23	0.00	0.00	0.03	0.03	93.16	99.56
6	Exchangeable Na	D	hk77;hk82;hk85;hk64;k67;k62h;hk81;k71;h84;h6	7	69	23	3	0.02	0.01	0.01	0.07	60.05	0.00	0.00	0.01	0.02	65.91	95.16
6	Exchangeable Na	E	hk77;hk64;h82;h62;k67;k11;hk8;k13;k35	7	78	26	3	0.27	0.10	0.06	0.45	193.20	0.00	0.01	0.10	0.10	38.27	98.46
6	Free H	A	hk71;k26h;hk55;hk63;hk38;k84h;k59;hk81;k64	7	39	13	3	0.05	0.04	0.01	0.16	1043.55	0.00	0.00	0.04	0.04	84.24	99.71
6	Free H	B	h55	2	69	23	3	0.23	0.21	0.01	0.81	186.84	0.00	0.03	0.20	0.21	91.14	98.41
6	Free H	C	hk26;54hk;h64	4	15	5	3	0.06	0.04	0.02	0.12	54.75	0.00	0.01	0.04	0.04	61.71	94.71
6	Free H	D	hk63;h55;k81h;k59;k71	5	51	17	3	0.10	0.07	0.01	0.27	135.60	0.00	0.01	0.07	0.07	67.29	97.82
6	Free H	E	hk63;k56	3	75	25	3	5.61	3.05	0.00	13.76	495.06	0.00	0.24	3.05	3.06	54.52	99.40

Group	Element	sample	Labx	Step	Ntot	Nlab	Neff	Mgen	Sgen	Min	Max	Fval	Pval	sRep	sLab	sRpr	CV	Plab
7	Extractable Al	A	k55;h81;k35;k54;k37	4	90	30	3	14568.0	2150.9	9681.9	18220.0	89.59	0.00	393.6	2138.9	2174.8	14.93	96.72
7	Extractable Al	B	k55;h81;k82;k64	4	93	31	3	8828.0	1183.4	5446.2	12071.7	77.92	0.00	232.2	1175.8	1198.5	13.58	96.25
7	Extractable Al	C	k64;h81;k37;k55;k54;k60;k82	7	84	28	3	18281.3	3192.0	10435.3	25466.7	88.28	0.00	588.4	3173.9	3228.0	17.66	96.68
7	Extractable Al	D	k23;k54;hk55;h81;hk37;k60;k82;k59	7	81	27	3	25762.7	3818.1	14427.9	33283.0	151.56	0.00	537.2	3805.4	3843.2	14.92	98.05
7	Extractable Al	E	hk81	2	96	32	3	367.5	93.6	108.9	610.3	72.9	0.00	19.0	92.9	94.9	25.81	95.99
7	Extractable Ca	A	k59;k35;k54;k55;k37;k23;k60	6	93	31	3	1699.1	677.4	29.1	2730.1	297.9	0.00	68.0	676.3	679.7	40.00	99.00
7	Extractable Ca	B	hk12;k55;hk82	3	102	34	3	350.7	155.9	10.4	829.8	111.0	0.00	25.6	155.2	157.3	44.86	97.34
7	Extractable Ca	C	h61;k64;h81;h83;h77	5	99	33	3	76073.9	6211.0	61699.5	92709.7	38.9	0.00	1725.7	6130.6	6368.8	8.37	92.66
7	Extractable Ca	D	hk12;k35;k55h;h64	3	99	33	3	162.3	77.6	7.4	390.0	131.0	0.00	11.7	77.3	78.2	48.15	97.74
7	Extractable Ca	E	hk82;h77;h81;h11;h64	6	96	32	3	1081.3	129.4	883.3	1422.7	40.4	0.00	35.3	127.8	132.5	12.26	92.93
7	Extractable Cd	A	hk55;hk56;hk10;hk6;h63	3	63	21	3	0.11	0.05	0.03	0.23	157.23	0.00	0.01	0.05	0.05	48.68	98.12
7	Extractable Cd	B	hk56;hk12;hk63;hk10;k77;hk55;h6;k48	7	45	15	3	0.05	0.03	0.02	0.10	100.06	0.00	0.00	0.03	0.03	57.11	97.06
7	Extractable Cd	C	hk56;hk63;hk6;hk84;k11;h12k;hk10	7	63	21	3	0.16	0.06	0.04	0.29	48.52	0.00	0.01	0.06	0.06	35.80	94.06
7	Extractable Cd	D	hk55;hk56;hk12;hk63;hk6;hk10;k11;k48;h84;k59	7	54	18	3	0.12	0.05	0.02	0.20	101.29	0.00	0.01	0.05	0.05	44.58	97.10
7	Extractable Cd	E	hk12;hk55;k10;k42;h68;k59;k3	6	66	22	3	0.19	0.05	0.12	0.30	63.04	0.00	0.01	0.05	0.05	24.85	95.39
7	Extractable Cr	A		1	114	38	3	24.61	5.60	12.50	36.33	41.57	0.00	1.50	5.53	5.73	23.29	93.12
7	Extractable Cr	B	k56h	2	111	37	3	20.71	3.84	12.27	32.23	67.22	0.00	0.81	3.82	3.90	18.83	95.67
7	Extractable Cr	C	k64	2	111	37	3	24.15	5.94	12.70	43.67	91.15	0.00	1.08	5.91	6.01	24.88	96.78
7	Extractable Cr	D	k55h;k56;h60;k54	3	102	34	3	37.22	10.09	15.00	62.87	260.36	0.00	1.08	10.07	10.13	27.22	98.86
7	Extractable Cr	E	hk81;k82	3	72	24	3	1.42	0.88	0.47	4.03	75.86	0.00	0.17	0.87	0.89	62.88	96.15
7	Extractable Cu	A	hk56;h81;k82;h11	4	111	37	3	11.59	1.09	8.63	13.70	17.10	0.00	0.46	1.06	1.15	9.92	84.29
7	Extractable Cu	B	hk56;hk82;k32;h81	4	111	37	3	4.49	0.61	3.28	5.97	22.70	0.00	0.22	0.59	0.63	14.10	87.86
7	Extractable Cu	C	hk56;hk82;k55;k8;h81;h12;k32	4	102	34	3	13.24	1.45	9.63	17.47	20.94	0.00	0.55	1.41	1.52	11.45	86.92
7	Extractable Cu	D	hk60;hk56;hk12;hk82;k32;h81	5	105	35	3	12.30	1.73	8.73	17.97	33.65	0.00	0.52	1.70	1.78	14.44	91.58
7	Extractable Cu	E	hk32;hk82;k40;k42;k48	4	90	30	3	1.79	0.86	0.13	3.94	132.04	0.00	0.13	0.85	0.86	48.18	97.76
7	Extractable Fe	A	k63;h83;k60;h77;h81	4	96	32	3	21360.7	2780.5	12919.0	25311.3	63.0	0.0	606.9	2758.3	2824.3	13.22	95.38
7	Extractable Fe	B	48k;h83;h77;h81;h12	5	96	32	3	11709.2	954.2	9433.3	14089.7	60.7	0.0	212.2	946.3	969.8	8.28	95.21
7	Extractable Fe	C	k35;h83;h77;h81	4	99	33	3	20966.1	3004.5	11262.3	26607.0	34.1	0.0	891.0	2960.1	3091.3	14.74	91.69
7	Extractable Fe	D	k6;k23;k64;63k	5	99	33	3	29367.1	9745.5	685.5	40378.7	709.1	0.0	633.9	9738.6	9759.2	33.23	99.58
7	Extractable Fe	E	h10;hk12;hk82;k63	3	96	32	3	397.8	82.5	145.7	585.3	85.7	0.0	15.4	82.0	83.5	20.99	96.58

Group	Element	sample	Labx	Step	Ntot	Nlab	Neff	Mgen	Sgen	Min	Max	Fval	Pval	sRep	sLab	sRpr	CV	Plab
7	Extractable Hg	A	hk48;hk64;h67	3	36	12	3	0.02	0.01	0.01	0.03	14.18	0.00	0.00	0.01	0.01	30.37	81.46
7	Extractable Hg	B	hk6;hk48;hk67	3	42	14	3	0.03	0.01	0.02	0.04	15.84	0.00	0.00	0.01	0.01	22.72	83.18
7	Extractable Hg	C	hk6;hk48;hk64;h67;k63;k23	6	33	11	3	0.03	0.01	0.00	0.04	240.44	0.00	0.00	0.01	0.01	40.15	98.76
7	Extractable Hg	D	hk6;hk48;hk67;hk64	4	36	12	3	0.02	0.00	0.02	0.03	80.78	0.00	0.00	0.00	0.00	15.96	96.38
7	Extractable Hg	E	hk64;hk48;k68;k35;k67	6	30	10	3	0.04	0.01	0.03	0.05	655.49	0.00	0.00	0.01	0.01	17.01	99.54
7	Extractable K	A	hk55;k35;k37;k23;k12	5	96	32	3	1479.1	638.4	20.0	3251.5	415.5	0.0	54.2	637.6	639.9	43.27	99.28
7	Extractable K	B	h53;k55;k37	3	105	35	3	1581.2	344.7	956.5	2682.0	99.9	0.0	59.7	343.0	348.2	22.02	97.06
7	Extractable K	C	k37;k55;k64	3	102	34	3	4809.4	1743.3	402.1	9343.7	270.4	0.0	183.6	1740.1	1749.7	36.38	98.90
7	Extractable K	D	hk55;k35;h37	3	102	34	3	2414.0	1081.8	102.2	5654.4	213.8	0.0	128.2	1079.3	1086.9	45.02	98.61
7	Extractable K	E	hk12;h82;h55;k32h	5	96	32	3	114.1	25.5	45.5	177.9	36.8	0.0	7.3	25.1	26.1	22.90	92.27
7	Extractable Mg	A	hk64;h10;k60;k82;h83;k84;h81;h77	6	90	30	3	3414.3	347.6	2440.0	3942.6	46.7	0.0	88.1	343.9	355.0	10.40	93.85
7	Extractable Mg	B	h10;k82;h83;hk85;60k;h81;h56	5	93	31	3	1346.0	93.4	1103.3	1491.7	44.2	0.0	24.3	92.3	95.5	7.09	93.50
7	Extractable Mg	C	h10;h83	3	108	36	3	3028.4	419.7	1637.7	3605.9	49.0	0.0	103.9	415.3	428.1	14.14	94.11
7	Extractable Mg	D	k60;k82	3	108	36	3	4200.7	1300.4	48.6	5799.0	640.5	0.0	89.0	1299.4	1302.5	31.01	99.53
7	Extractable Mg	E	h11;k59	2	105	35	3	500.1	59.3	360.7	625.0	42.2	0.0	15.8	58.6	60.7	12.13	93.21
7	Extractable Mn	A	k82	2	114	38	3	437.9	95.8	140.8	719.4	38.0	0.0	26.9	94.5	98.2	22.43	92.50
7	Extractable Mn	B	h12;h81	3	111	37	3	109.3	13.2	72.0	128.5	24.4	0.0	4.6	12.9	13.7	12.57	88.63
7	Extractable Mn	C	k64;k56	3	111	37	3	360.3	66.9	149.8	454.2	42.7	0.0	17.7	66.1	68.5	19.00	93.28
7	Extractable Mn	D	k35;k6;h77;h81;h83	3	102	34	3	1106.4	98.5	831.0	1242.3	16.0	0.0	42.6	95.4	104.5	9.44	83.37
7	Extractable Mn	E	hk12;k48	3	111	37	3	17.75	4.46	5.07	25.08	73.66	0.00	0.90	4.43	4.52	25.49	96.03
7	Extractable Na	A	hk12;k55;k56h;35k	4	87	29	3	92.41	47.98	7.40	205.67	126.36	0.00	7.39	47.79	48.36	52.33	97.66
7	Extractable Na	B	k55;hk56;k30;h64;k32	4	84	28	3	51.80	25.90	6.00	121.33	112.51	0.00	4.23	25.78	26.13	50.44	97.38
7	Extractable Na	C	k55;k56	3	93	31	3	141.36	66.72	10.27	326.00	127.43	0.00	10.24	66.46	67.24	47.57	97.68
7	Extractable Na	D	hk55;k81;h37k;k56;k54	5	84	28	3	113.28	60.94	7.67	269.67	306.25	0.00	6.03	60.84	61.14	53.97	99.03
7	Extractable Na	E	k61h;h10	3	90	30	3	94.32	54.96	10.57	259.43	87.68	0.00	10.17	54.65	55.59	58.93	96.65
7	Extractable Ni	A	hk56;h81;k82;k12h;k10	5	102	34	3	18.73	1.79	13.10	22.03	40.45	0.00	0.49	1.77	1.83	9.78	92.93
7	Extractable Ni	B	h12k;hk56;h81;k82;k63;k71;k34	6	93	31	3	4.89	0.63	3.43	6.23	53.50	0.00	0.15	0.62	0.64	13.09	94.59
7	Extractable Ni	C	h12;hk56;hk82;h81	4	105	35	3	17.31	1.93	12.27	21.20	23.90	0.00	0.69	1.89	2.01	11.64	88.42
7	Extractable Ni	D	h12;k61;h81;k35;k56h	3	102	34	3	58.67	5.46	47.27	69.67	24.50	0.00	1.91	5.35	5.68	9.68	88.68
7	Extractable Ni	E	k10;hk12;k55;k82	4	69	23	3	1.05	0.51	0.20	2.37	62.68	0.00	0.11	0.51	0.52	49.10	95.36

Group	Element	sample	Labx	Step	Ntot	Nlab	Neff	Mgen	Sgen	Min	Max	Fval	Pval	sRep	sLab	sRpr	CV	Plab
7	Extractable P	A	h53;hk56;h62;k84	3	102	34	3	688.6	44.6	545.7	766.2	24.0	0.00	15.79	43.69	46.45	6.75	88.45
7	Extractable P	B	hk56;34k;h83;h53;h62	5	99	33	3	101.3	17.3	70.4	144.7	64.6	0.00	3.73	17.16	17.56	17.34	95.49
7	Extractable P	C	k23;h53;h62;h56	4	102	34	3	428.9	45.5	326.6	549.7	22.2	0.00	16.72	44.50	47.54	11.08	87.63
7	Extractable P	D	hk56;k34	3	108	36	3	279.9	82.9	5.6	516.3	573.0	0.00	6.00	82.80	83.02	29.67	99.48
7	Extractable P	E	k48;h83	2	105	35	3	182.3	51.6	34.7	269.3	301.2	0.00	5.15	51.55	51.81	28.42	99.01
7	Extractable Pb	A	hk56;hk82;k60	4	114	38	3	8.03	2.48	1.67	14.17	149.88	0.00	0.35	2.47	2.49	31.07	98.02
7	Extractable Pb	B	hk56;hk82;k12	4	114	38	3	7.98	1.82	2.65	11.40	70.77	0.00	0.37	1.80	1.84	23.11	95.88
7	Extractable Pb	C	k42;hk56;hk82;k6;k60;h81	4	102	34	3	13.25	2.34	8.37	19.83	69.49	0.00	0.49	2.33	2.38	17.94	95.80
7	Extractable Pb	D	hk56;hk82;hk60;h55;k6	6	108	36	3	11.51	3.05	2.33	18.33	122.72	0.00	0.48	3.03	3.07	26.69	97.59
7	Extractable Pb	E	k59h;k82;k68;h81;h11;12k	4	102	34	3	12.54	1.85	8.10	16.40	49.48	0.00	0.46	1.83	1.89	15.07	94.17
7	Extractable S	A	h77	2	78	26	3	91.35	32.31	25.12	178.10	68.43	0.00	6.76	32.07	32.78	35.88	95.74
7	Extractable S	B	k59;hk77;h10	3	72	24	3	76.99	25.17	23.77	145.67	91.97	0.00	4.55	25.03	25.44	33.04	96.81
7	Extractable S	C	hk11;h77	3	75	25	3	418.74	226.58	13.93	1017.67	616.98	0.00	15.80	226.39	226.94	54.20	99.52
7	Extractable S	D	k59;h77	2	75	25	3	131.76	38.36	24.20	182.72	67.95	0.00	8.06	38.07	38.92	29.53	95.71
7	Extractable S	E	k59;k64	2	75	25	3	1131.39	294.59	295.95	1698.43	615.71	0.00	20.56	294.35	295.07	26.08	99.51
7	Extractable Zn	A	hk82;k56;h81;k10;k63	5	108	36	3	60.39	7.07	44.33	82.67	66.41	0.00	1.50	7.01	7.17	11.88	95.61
7	Extractable Zn	B	hk82;h81	3	117	39	3	19.67	2.67	13.70	25.27	19.42	0.00	1.05	2.60	2.81	14.27	85.99
7	Extractable Zn	C	hk82;h81	3	117	39	3	37.17	5.69	23.67	48.87	35.51	0.00	1.65	5.61	5.85	15.73	92.00
7	Extractable Zn	D	hk82;k55;h81	3	114	38	3	97.29	14.01	61.27	136.93	75.57	0.00	2.79	13.92	14.20	14.59	96.13
7	Extractable Zn	E	hk82;k42;h81;h11;k55;h32k;k71;k7	6	96	32	3	21.33	2.82	12.23	26.23	53.57	0.00	0.67	2.79	2.87	13.46	94.60
8	Total Al	A	k82	2	30	10	3	47642.6	1962.2	44438.0	50343.3	20.88	0.00	743.8	1914.6	2054.0	4.31	86.89
8	Total Al	B	hk82;k84;k48	4	24	8	3	27010.0	862.5	25250.0	28123.3	41.91	0.00	230.8	852.2	882.9	3.27	93.17
8	Total Al	C	k82	2	30	10	3	42922.7	2120.7	39473.7	46956.7	27.06	0.00	706.0	2081.1	2197.6	5.12	89.68
8	Total Al	D	k84	2	30	10	3	77065.5	9097.6	58310.7	83873.3	265.42	0.00	967.2	9080.4	9131.8	11.85	98.88
8	Total Al	E	k32	2	27	9	3	666.9	135.6	473.7	893.3	45.41	0.00	34.8	134.1	138.5	20.77	93.67
8	Total Ca	A	hk82;k32	3	27	9	3	8607.7	931.4	7710.0	10451.0	64.56	0.00	200.8	924.2	945.7	10.99	95.49
8	Total Ca	B	hk82;h84k;k40	4	24	8	3	1430.6	54.0	1346.7	1505.0	17.87	0.00	22.1	52.5	57.0	3.98	84.90
8	Total Ca	C	h82	2	30	10	3	76593.8	3338.3	70803.3	81043.7	14.03	0.00	1543.9	3217.1	3568.4	4.66	81.28
8	Total Ca	D	hk82;h84	3	27	9	3	1322.2	154.7	1140.7	1575.3	13.82	0.00	72.1	149.0	165.5	12.52	81.04
8	Total Ca	E	hk32;hk84;k48;k40	5	18	6	3	1073.6	51.6	1016.7	1141.0	42.81	0.00	13.7	51.0	52.8	4.91	93.30
8	Total Fe	A	k3	2	30	10	3	28129.9	2486.6	22624.0	30570.0	136.34	0.00	368.9	2477.5	2504.8	8.90	97.83
8	Total Fe	B	k82	2	30	10	3	13468.2	558.0	12684.3	14330.0	32.13	0.00	170.5	549.2	575.1	4.27	91.21
8	Total Fe	C	k14	2	30	10	3	23571.2	1022.7	22416.7	25564.3	12.42	0.00	502.7	980.6	1102.0	4.68	79.19
8	Total Fe	D	h82	2	30	10	3	35844.7	1329.1	33578.7	37836.3	14.57	0.00	603.1	1282.7	1417.4	3.95	81.90
8	Total Fe	E	k32;h7	2	24	8	3	443.8	80.4	357.0	568.7	14.17	0.00	37.0	77.5	85.9	19.35	81.44

Group	Element	sample	Labx	Step	Ntot	Nlab	Neff	Mgen	Sgen	Min	Max	Fval	Pval	sRep	sLab	sRpr	CV	Plab
8	Total K	A	h82	2	30	10	3	15145.5	530.7	14280.0	15960.0	6.70	0.02	355.0	489.5	604.7	3.99	65.53
8	Total K	B	h82	2	30	10	3	13761.0	427.9	12942.3	14210.0	16.38	0.00	183.1	414.7	453.3	3.29	83.68
8	Total K	C	h82	2	30	10	3	15974.9	454.5	15296.7	16533.3	20.34	0.00	174.6	443.2	476.4	2.98	86.57
8	Total K	D	h82	2	30	10	3	26262.5	815.1	25046.7	27450.0	16.05	0.00	352.3	789.3	864.4	3.29	83.38
8	Total K	E	k32;k48	3	21	7	3	236.0	45.8	171.0	275.7	54.12	0.00	10.8	45.3	46.6	19.75	94.65
8	Total Mg	A	k82h	2	30	10	3	6818.8	430.4	6234.0	7570.7	18.13	0.00	175.0	418.3	453.5	6.65	85.10
8	Total Mg	B	hk82;k48;84h	3	24	8	3	1703.2	39.1	1645.3	1770.0	11.23	0.00	20.2	37.3	42.4	2.49	77.32
8	Total Mg	C	h82k	2	30	10	3	3785.4	221.7	3541.0	4193.3	31.39	0.00	68.5	218.1	228.7	6.04	91.02
8	Total Mg	D	hk82;h48	3	27	9	3	6443.4	166.6	6146.3	6708.3	16.40	0.00	71.3	161.4	176.5	2.74	83.69
8	Total Mg	E	hk84	2	27	9	3	516.9	42.9	463.3	598.1	52.01	0.00	10.3	42.5	43.7	8.46	94.45
8	Total Mn	A	hk82	2	30	10	3	629.1	69.1	515.0	757.0	38.75	0.00	19.2	68.2	70.8	11.26	92.64
8	Total Mn	B	hk82;k48	3	27	9	3	145.2	10.9	121.7	158.0	57.17	0.00	2.5	10.8	11.1	7.63	94.93
8	Total Mn	C	hk82	2	30	10	3	396.3	36.3	312.7	449.3	33.65	0.00	10.8	35.8	37.4	9.43	91.59
8	Total Mn	D	hk82;k14;h84	3	24	8	3	1148.0	36.2	1095.7	1190.0	12.73	0.00	17.6	34.8	39.0	3.40	79.64
8	Total Mn	E	k32	2	27	9	3	20.0	2.1	17.3	23.0	17.07	0.00	0.9	2.0	2.2	11.04	84.27
8	Total Na	A	hk82;k84h	3	27	9	3	11705.3	501.2	11201.7	12500.0	30.03	0.00	158.4	492.8	517.7	4.42	90.63
8	Total Na	B	hk82	2	30	10	3	5079.5	158.9	4867.0	5325.0	17.63	0.00	65.5	154.3	167.7	3.30	84.72
8	Total Na	C	hk84;hk82;hk3;14k	5	21	7	3	984.6	45.9	918.1	1045.0	21.57	0.00	17.1	44.8	47.9	4.87	87.27
8	Total Na	D	k82h;hk3;h84	4	24	8	3	3303.0	214.6	3100.7	3730.0	25.51	0.00	73.6	210.3	222.8	6.75	89.09
8	Total Na	E		1	27	9	3	147.9	103.0	37.8	358.6	537.48	0.00	7.7	102.9	103.2	69.78	99.44
9	Reactive Al	A	k38;h67;h64	3	72	24	3	2590.0	192.0	2343.3	2966.7	22.65	0.00	69.9	187.7	200.3	7.73	87.83
9	Reactive Al	B	h67;h83;h64	4	72	24	3	1372.1	129.3	1080.0	1658.7	43.58	0.00	33.9	127.8	132.2	9.64	93.42
9	Reactive Al	C	k48;h67	2	75	25	3	771.3	161.7	336.0	1113.0	120.55	0.00	25.5	161.0	163.0	21.13	97.55
9	Reactive Al	D	k14;k38;k3	4	72	24	3	1725.6	569.2	37.1	3077.7	572.64	0.00	41.2	568.7	570.2	33.04	99.48
9	Reactive Al	E		1	75	25	3	229.3	89.2	6.3	315.0	544.33	0.00	6.6	89.1	89.3	38.96	99.45
9	Reactive Fe	A	h67;h10	3	75	25	3	5637.4	535.8	4396.8	6497.3	19.89	0.00	208.1	522.2	562.1	9.97	86.29
9	Reactive Fe	B	64k;h67	2	75	25	3	2857.9	225.4	2419.4	3333.7	35.12	0.00	65.9	222.2	231.8	8.11	91.92
9	Reactive Fe	C	k35;h67	2	75	25	3	1763.3	311.5	1158.9	2483.3	69.77	0.00	64.6	309.2	315.9	17.92	95.82
9	Reactive Fe	D	h10;k3;h67	3	72	24	3	3781.9	758.1	2507.1	5516.7	129.97	0.00	115.2	755.1	763.9	20.20	97.73
9	Reactive Fe	E	k64	2	75	25	3	305.3	99.0	7.6	423.4	263.51	0.00	10.6	98.8	99.3	32.54	98.87

Legend

Name variable	Description
Group	Group number
Element	Element code
Sample	Sample
Labx	Excluded laboratories and evaluation (1st run)
Step	N° of exclusion steps. Only the output of the last step is provided.
Ntot	Total number of observation (after outliers have been excluded)
Nlab	Total number of laboratories (after outliers have been excluded)
Neff	Average number of replicates, corrected for imbalances
Mgen	Average value of the measurements
Sgen	General standard deviation

Name variable	Description
Min	Minimum value
Max	Maximum value
Fval	F-test for laboratory effect
Pval	p-value for the F-test
SRep	Within laboratory standard deviation
SLab	Between laboratory standard deviation
SRepr	Reproducibility standard deviation
CV	Coefficient of variation of the reproducibility standard deviation CV = rRepr/Mgen*100
Plab	Percentage of the between laboratory variance in the total variance PLab=sqrt($sLab^2$/$sRepr^2$)*100