

Plants

Code	Product	Unit
Trees and bushes		
BCR-100	Beech leaves - Trace elements	30 g
Certified values		
Al.....	0.435 g/kg	Cr 0.0080 g/kg
Ca.....	5.30 g/kg	K..... 9.94 g/kg
Cl.....	1.49 g/kg	Mg..... 0.878 g/kg
		N 26.29 g/kg
		P 1.55 g/kg
		S 2.69 g/kg
Indicative values for Cd, Cu, Fe, Mn, Mo, Pb, Zn		
NIST-1575a	Pine needles - Trace elements and minor constituents	50 g
Certified values		
P.....	0.107 %	Ba..... 6.0 mg/kg
K.....	0.417 %	Cd..... 0.233 mg/kg
Ca.....	0.25 %	Cl..... 421 mg/kg
Al.....	580 mg/kg	Cu..... 2.g/kg
		Fe..... 46 mg/kg
		Hg..... 0.0399 mg/kg
		Rb..... 16.5 mg/kg
		Zn..... 38 mg/kg
NIST-1515	Apple leaves - Trace elements	50 g
Dried leaves from Golden Delicious and Rome varieties.		
Certified values		
Al.....	286 mg/kg	Fe 83 mg/kg
As.....	0.038 mg/kg	Hg..... 0.044 mg/kg
B.....	27 mg/kg	K..... 1.61 %
Ba.....	49 mg/kg	Mg 0.271 %
Ca.....	1.526 %	Mn 54 mg/kg
Cd.....	0.013 mg/kg	Mo 0.094 mg/kg
Cl.....	579 mg/kg	N..... 2.25 %
Cu.....	5.64 mg/kg	Na..... 24.4 mg/kg
		Ni 0.91 mg/kg
		P 0.159 %
		Pb 0.470 mg/kg
		Rb 10.2 mg/kg
		Se 0.050 mg/kg
		Sr 25 mg/kg
		V 0.26 mg/kg
		Zn..... 12.5 mg/kg
Indicative values for Au, Br, Ce, Co, Cr, Eu, Gd, I, La, Nd, S, Sb, Sc, Sm, Sn, Tb, Th, U, W, Yb		
NIST-1547	Peach leaves - Trace elements	50 g
Dried leaves from the Coronet variety.		
Certified values		
Al.....	249 mg/kg	Fe 218 mg/kg
As.....	0.060 mg/kg	Hg..... 0.031 mg/kg
B.....	29 mg/kg	K..... 2.43 %
Ba.....	124 mg/kg	Mg..... 0.432 %
Ca.....	1.56 %	Mn 98 mg/kg
Cd.....	0.026 mg/kg	Mo 0.060 mg/kg
Cl.....	360 mg/kg	N..... 2.94 %
Cu.....	3.7 mg/kg	Na..... 24 mg/kg
		Ni 0.69 mg/kg
		P 0.137 %
		Pb 0.87 mg/kg
		Rb..... 19.7 mg/kg
		Se 0.120 mg/kg
		Sr 53 mg/kg
		V 0.37 mg/kg
		Zn..... 17.9 mg/kg
Indicative values for Br, Ce, Co, Cr, Eu, Gd, I, La, Nd, S, Sb, Sc, Sm, Sn, Tb, Th, U, Yb		
New NIM-GBW07602	Bush branches and leaves - Trace elements	35 g
Certified values		
Ag.....	0.027 µg/g	Eu..... 0.037 µg/g
Al.....	0.214 %	F..... 24 µg/g
As.....	0.95 µg/g	Fe..... 1020 µg/g
B.....	34 µg/g	Hf..... 0.14 µg/g
Ba.....	19 µg/g	K..... 0.85 %
Be.....	0.056 µg/g	La..... 1.23 µg/g
Bi.....	0.027 µg/g	Li..... 2.4 µg/g
Br.....	2.4 µg/g	Mg..... 0.287 %
Ca.....	2.22 %	Mn 58 µg/g
Cd.....	0.14 µg/g	Mo 0.26 µg/g
Ce.....	2.4 µg/g	N..... 1.20 %
Co.....	0.39 µg/g	Na..... 1.10 %
Cr.....	2.3 µg/g	Ni..... 1.7 µg/g
Cs.....	0.27 µg/g	P..... 830 µg/g
Cu.....	5.2 µg/g	Pb..... 7.1 µg/g
		Rb 4.2 µg/g
		S 0.32 %
		Sb 0.045 µg/g
		Sc..... 0.31 µg/g
		Se 0.184 µg/g
		Si..... 0.58 %
		Sm 0.19 µg/g
		Sr..... 345 µg/g
		Th..... 0.37 µg/g
		Ti..... 95 µg/g
		V 2.4 µg/g
		Yb 0.063 µg/g
		Zn..... 20.6 µg/g
Indicative values for Cl, Nd, Tb, U, W, Y		

Code	Product	Unit
New NIM-GBW07603	Bush branches and leaves - Trace elements	35 g
	Certified values	
	Ag 0.027 µg/g	Eu 0.037 µg/g
	Al 0.214 %	F 24 µg/g
	As 0.95 µg/g	Fe 1020 µg/g
	B 34 µg/g	Hf 0.14 µg/g
	Ba 19 µg/g	K 0.85 %
	Be 0.056 µg/g	La 1.23 µg/g
	Bi 0.027 µg/g	Li 2.4 µg/g
	Br 2.4 µg/g	Mg 0.287 %
	Ca 2.22 %	Mn 58 µg/g
	Cd 0.14 µg/g	Mo 0.26 µg/g
	Ce 2.4 µg/g	N 1.20 %
	Co 0.39 µg/g	Na 1.10 %
	Cr 2.3 µg/g	Ni 1.7 µg/g
	Cs 0.27 µg/g	P 830 µg/g
	Cu 5.2 µg/g	Pb 7.1 µg/g
		Rb 4.2 µg/g
		S 0.32 %
		Sb 0.045 µg/g
		Sc 0.31 µg/g
		Se 0.184 µg/g
		Si 0.58 %
		Sm 0.19 µg/g
		Sr 345 µg/g
		Th 0.37 µg/g
		Ti 95 µg/g
		V 2.4 µg/g
		Yb 0.063 µg/g
		Zn 20.6 µg/g
	Indicative values for Cl, Nd, Tb, U, W, Y	
BCR-683	Beech wood - PCP and PAHs	60 g
	Compound	Certified value mg/kg
		Uncertainty mg/kg
	Pentachlorophenol	3.6..... 0.5
	Benzo(a)anthracene	6.5..... 0.7
	Benzo(a)pyrene	3.4..... 0.4
	Benzo(e)pyrene	9.3..... 1.0
	Benzo(b)fluoranthene	5.8..... 0.6
	Benzo(k)fluoranthene	2.58..... 0.29
New ERM-CD100	Wood - Trace elements and pentachlorophenol (PCP)	74 g
	The certified reference material ERM-CD100 is intended for the verification of a correct implementation of standardised analytical methods for waste wood characterisation such as CEN/TR 14823 for the determination of PCP or digestion methods according to EN 13657 for the determination of trace elements. Furthermore, it can be used for the validation of modified or new analytical procedures.	
	Arsenic (As)	3.1 ± 0.5 mg/kg
	Cadmium (Cd)	3.02 ± 0.24 mg/kg
	Chromium (Cr)	36.4 ± 2.6 mg/kg
	Copper (Cu)	22.9 ± 1.7 mg/kg
		Mercury (Hg)
		0.60 ± 0.14 mg/kg
		Lead (Pb)
		39 ± 4 mg/kg
		Pentachlorophenol
		7.9 ± 0.6 mg/kg
	Additional information	
	The moisture content of the bottled wood material at the time of certification was (7.48 ± 0.14) %, corresponding to a drying temperature of (103 ± 2) °C.	
New IC-INCT-OBTL-5	Oriental basma tobacco leaves - Trace elements	50 g
	Certified values	
	Al 0.198 ± 0.028 %	Co 0.981 ± 0.067 mg/kg
	Ca 3.996 ± 0.142 %	Cs 0.288 ± 0.02 mg/kg
	K 2.271 ± 0.076 %	Cu 10.1 ± 0.4 mg/kg
	Mg 0.853 ± 0.034 %	Er 0.101 ± 0.006 mg/kg
	P 0.17 ± 0.012 %	Eu 0.06 ± 0.004 mg/kg
	S 0.455 ± 0.091 %	Hf 0.291 ± 0.024 mg/kg
	Ag 0.053 ± 0.011 mg/kg	Hg 0.021 ± 0.001 mg/kg
	As 0.668 ± 0.086 mg/kg	La 1.69 ± 0.09 mg/kg
	B 33.6 ± 2.2 mg/kg	Mn 180 ± 6 mg/kg
	Ba 67.4 ± 3.8 mg/kg	Mo 0.414 ± 0.062 mg/kg
	Br 87.4 ± 5.4 mg/kg	Nd 1.33 ± 0.11 mg/kg
	Cd 2.64 ± 0.14 mg/kg	Ni 8.5 ± 0.49 mg/kg
	Ce 2.99 ± 0.18 mg/kg	Pb 2.01 ± 0.31 mg/kg
		Rb 19.1 ± 1 mg/kg
		Sb 0.076 ± 0.013 mg/kg
		Sc 0.64 ± 0.027 mg/kg
		Sm 0.264 ± 0.013 mg/kg
		Sr 105 ± 5 mg/kg
		Ta 0.042 ± 0.004 mg/kg
		Tb 0.035 ± 0.002 mg/kg
		Th 0.503 ± 0.043 mg/kg
		V 4.12 ± 0.55 mg/kg
		Yb 0.115 ± 0.023 mg/kg
		Zn 52.4 ± 1.8 mg/kg
	Indicative values for Au, Be, Cl, Cr, Dy, Fe, Gd, Ho, Li, Lu, Na, Pr, Ti, Tl, Tm, U and Y	
New IC-INCT-PVLT-6	Tobacco leaves - Trace elements	50 g
	Certified values	
	Ca 2.297 ± 0.078 %	Ce 0.743 ± 0.051 mg/kg
	K 2.64 ± 0.09 %	Co 0.154 ± 0.007 mg/kg
	Mg 0.241 ± 0.009 %	Cu 5.12 ± 0.2 mg/kg
	P 0.242 ± 0.015 %	Er 0.019 ± 0.003 mg/kg
	S 0.378 ± 0.059 %	Eu 0.014 ± 0.003 mg/kg
	Ag 0.019 ± 0.004 mg/kg	Hf 0.161 ± 0.008 mg/kg
	Al 252 ± 49 mg/kg	Hg 0.023 ± 0.002 mg/kg
	As 0.138 ± 0.01 mg/kg	La 0.54 ± 0.027 mg/kg
	B 33.4 ± 1.9 mg/kg	Li 3.35 ± 0.67 mg/kg
	Ba 41.6 ± 1.9 mg/kg	Mn 136 ± 5 mg/kg
	Br 19.5 ± 1 mg/kg	Mo 0.396 ± 0.029 mg/kg
	Cd 2.23 ± 0.12 mg/kg	Nd 0.322 ± 0.024 mg/kg
		Ni 1.49 ± 0.14 mg/kg
		Pb 0.972 ± 0.147 mg/kg
		Rb 5.97 ± 0.28 mg/kg
		Sb 0.037 ± 0.004 mg/kg
		Sc 0.06 ± 0.003 mg/kg
		Sm 0.058 ± 0.004 mg/kg
		Sr 133 ± 6 mg/kg
		Ta 0.011 ± 0.001 mg/kg
		Tb 0.008 ± 0.001 mg/kg
		Th 0.089 ± 0.007 mg/kg
		V 0.405 ± 0.056 mg/kg
		Zn 43.6 ± 1.4 mg/kg
	Indicative values for Bi, Cl, Cr, Cs, Fe, Na, Pr, Sn, Ti, Tl, U and Y	

Plants

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Grasses and crops		
BCR-129	Hay powder - Trace elements Certified values Ca 6.4 g/kg I 0.167 mg/kg K 33.8 g/kg Mg 1.45 g/kg N 37.2 g/kg P 2.36 g/kg S 3.16 g/kg Zn 32.1 mg/kg Kjeldahl-N 34.2 g/kg	30 g
New ERM-CD281	Rye grass - Trace elements Certified values As 0.042 ± 0.01 mg/kg B 5.5 ± 0.5 mg/kg Cd 0.12 ± 0.007 mg/kg Cr 24.8 ± 1.3 mg/kg Cu 10.2 ± 0.5 mg/kg Hg 0.0164 ± 0.0022 mg/kg Mn 82 ± 4 mg/kg Mo 2.22 ± 0.12 mg/kg Ni 15.2 ± 0.6 mg/kg Pb 1.67 ± 0.11 mg/kg Sb 0.042 ± 0.007 mg/kg Se 0.023 ± 0.004 mg/kg Sn 0.062 ± 0.011 mg/kg Zn 30.5 ± 1.1 mg/kg	vial
New IAEA-372	Grass - Radionuclides Certified values (dry mass basis) ⁴⁰ K 1060 ± 56.7 Bq/kg ¹³⁷ Cs 11320 ± 360 Bq/kg	100 g
NIST-2695	Vegetation - Fluoride Two samples of timothy grass with fluoride concentrations above natural levels. <u>Low level</u> Certified value Fluoride 64.0 µg/g <u>High level</u> Certified value Fluoride 277 µg/g	2 x 25 g
IAEA-V-9	Cellulose (cotton) - Trace elements Certified values Ba 9 mg/kg Ca 240 mg/kg Cl 600 mg/kg Cr 0.11 mg/kg Cu 0.59 mg/kg Hg 0.06 mg/kg Mg 53 mg/kg Mn 0.15 mg/kg Mo 0.034 mg/kg Na 56 mg/kg Ni 0.09 mg/kg Pb 0.25 mg/kg Sr 0.65 mg/kg Indicative values for Al, Br, Fe, V	25 g
BCR-402	White clover - Trace elements Collected from an area with soil especially rich in selenium, resulting in a high selenium content Certified values As 0.093 mg/kg Co 0.178 mg/kg Mo 6.93 mg/kg Se 6.70 mg/kg Indicative values for Cr, Fe, Ni, Zn	25 g
IAEA-156	Clover - Radioactive isotopes Recommended values ¹³⁴ Cs 132 Bq/kg ¹³⁷ Cs 264 Bq/kg ⁴⁰ K 657 Bq/kg ⁹⁰ Sr 14.8 Bq/kg	250 g
Aquatic plants		
BCR-060	Aquatic plant (<i>Lagarosiphon major</i>) - Trace elements Certified values Al 4180 mg/kg Cd 2.20 mg/kg Cu 51.2 mg/kg Hg 0.34 mg/kg Mn 1759 mg/kg Pb 63.8 mg/kg Zn 313 mg/kg Indicative values for Ag, As, Au, B, Br, CaO, Ce, Cl, Co, Cr, Cs, Eu, F, Fe ₂ O ₃ , K ₂ O, La, MgO, Mo, N, Na ₂ O, Ni, P ₂ O ₅ , Rb, S, Sb, Sc, Se, SiO ₂ , Sn, Ta, Tb, TiO ₂ , Tl, U, V, W	25 g
BCR-596	Aquatic plant (<i>trapa natans</i>) - Chromium Certified value Cr 36.3 mg/kg	25 g
BCR-414	Plankton - Trace elements Certified values As 6.82 µg/g Cd 0.383 µg/g Cr 23.8 µg/g Cu 29.5 µg/g Hg 0.276 µg/g Mn 299 µg/g Ni 18.8 µg/g Pb 3.97 µg/g Se 1.75 µg/g V 8.10 µg/g Zn 111.6 µg/g	5 g

Code	Product	Unit
BCR-670	Aquatic plant (<i>Lemna minor</i>) - Trace elements Certified values Ce 0.99 mg/kg La 0.487 mg/kg Tb 14.0 µg/kg Dy 79 µg/kg Lu 6.3 µg/kg Th 0.159 mg/kg Er 44.0 µg/kg Nd 0.473 mg/kg Tm 5.70 µg/kg Eu 23.2 µg/kg Pr 0.121 mg/kg U 82 µg/kg Gd 98 µg/kg Sc 0.191 mg/kg Y 0.46 mg/kg Ho 15.8 µg/kg Sm 94 µg/kg Yb 40 µg/kg Indicative values for: As, Cd, Cr, Cs, Cu, Fe, Mo, Ni, Pb, Sb, Se and Zn	10 g
NIES03	Chlorella (green algae) - Trace elements The material was prepared from spray-dried chlorella (<i>Chlorella pyrenoidosa</i>) obtained from a commercial source. Certified values Ca 0.49 % Fe 0.185 % Mn 69 µg/g Co 0.87 µg/g K 1.24 % Sr 40 µg/g Cu 3.5 µg/g Mg 0.33 % Zn 20.5 µg/g Indicative values for Cd, P, Pb, Sc	36 g
NIST-4359	Seaweed - Radioactivity NIST-4359 contains low levels of anthropogenic and natural radioactivity. Certified values for ⁴⁰ K, ¹³⁷ Cs, ²¹⁰ Pb, ²¹⁰ Po, ²²⁸ Ra, ²³² Th, ²³⁴ U, ²³⁵ U, ²³⁸ U, ²³⁸ Pu, ²³⁹ Pu, ^{239,240} Pu, ²⁴¹ Am Indicative values for further isotopes	300 g
New NIES26	Algae - Microcystines, trace elements Certified values Microcystins ¹⁾ 4.5 ± 0.4 mg/g Ca 0.56 ± 0.02 % Mg 0.44 ± 0.03 % Sr 4.5 ± 0.3 mg/kg Fe 0.086 ± 0.006 % Na 0.12 ± 0.02 % Zn 13 ± 2 mg/kg K 0.90 ± 0.05 % Mn 39 ± 3 mg/kg Indicative values for S, P, Co, Cu, Ni, Pb ¹⁾ The microcystins were determined in accordance with the manual for examination of substances requiring investigation by the Ministry of Environment, Japan (March 2003). This method followed those in reports for the determination of total microcystins. The microcystins were oxidatively decomposed to MMPB, which was determined using HPLC-mass spectrometry, or gas chromatography-mass spectrometry after esterification.	54 mg
IAEA-392	Algae - Trace elements Algae material (type: <i>Scenedesmus obliquus</i> 208) Recommended values Ca 2680 ± 67.4 mg/kg Mg 2376 ± 78.8 mg/kg Ni 0.571 ± 0.028 mg/kg Cu 23.2 ± 1.74 mg/kg Mn 67.5 ± 1.54 mg/kg Pb 0.574 ± 0.019 mg/kg Fe 497 ± 13.6 mg/kg Na 680 ± 23.0 mg/kg Zn 128 ± 2.0 mg/kg Indicative values for As, Cd, Cr, K	20 g
IAEA-413	Algae - Trace elements Algae material (type: <i>Chlorella Boehm</i>) Recommended values (based on dry mass) As 127 ± 6.6 mg/kg Fe 1370 ± 39 mg/kg Ni 113 ± 4.9 mg/kg Ca 3143 ± 112 mg/kg K 10740 ± 270 mg/kg Pb 242 ± 7 mg/kg Cd 204 ± 8.5 mg/kg Mg 4058 ± 117 mg/kg Zn 169 ± 3.3 mg/kg Co 4.24 ± 0.25 mg/kg Mn 158 ± 3.4 mg/kg Cr 377 ± 14 mg/kg Na 375 ± 20 mg/kg Indicative values for further elements	10 g
Miscellaneous		
LGC7162	Strawberry leaves - Trace elements The raw material was collected from a private farm in the Czech Republic. The mixture was cut and jet milled to pass a 250 µm nylon sieve. The resulting powder was homogenised, separated in 20 g portions and placed in 60 mL bottles. Certified Values Ca 1.53 g/100 g Ba 107 mg/kg Mo 0.32 mg/kg Mg 0.377 g/100 g Cd 0.17 mg/kg Hg 0.027 mg/kg N 2.01 g/100 g Co 0.47 mg/kg Ni 2.6 mg/kg P 0.260 g/100 g Cr 2.15 mg/kg Sr 64 mg/kg K 1.96 g/100 g Fe 818 mg/kg Zn 24 mg/kg S 0.174 g/100 g Pb 1.8 mg/kg As 0.28 mg/kg Mn 171 mg/kg	20 g
NIST-1573a	Tomato leaves - Trace elements Certified values Al 598 mg/kg Cu 4.70 mg/kg P 0.216 % As 0.112 mg/kg Hg 0.034 mg/kg Rb 14.89 mg/kg B 33.3 mg/kg K 2.70 % Sb 0.063 mg/kg Cd 1.52 mg/kg Mn 246 mg/kg Se 0.054 mg/kg Ca 5.05 % N 3.03 % V 0.57 mg/kg Co 0.57 mg/kg Na 136 mg/kg Zn 82 mg/kg Cr 1.99 mg/kg Ni 1.59 mg/kg Indicative values for Eu, Gd, Mg, Pb, S, Sc, Sm, Sr, Th, U	50 g

Plants

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NIST-RM 8491	Sugar cane bagasse - Whole biomass feedstocks This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucuronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8492	Eastern cottonwood - Whole biomass feedstocks This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucuronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8493	Monterey pine - Whole biomass feedstocks This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucuronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8494	Wheat straw - Whole biomass feedstocks This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucuronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
BCR-482	Lichen - Trace elements Certified values Al..... 1103 mg/kg Cr 4.12 mg/kg Ni 2.47 mg/kg As..... 0.85 mg/kg Cu 7.03 mg/kg Pb 40.9 mg/kg Cd 0.56 mg/kg Hg 0.48 mg/kg Zn 100.6 mg/kg	15 g
IAEA-336	Lichen - Trace elements Recommended values As..... 0.63 mg/kg Fe 430 mg/kg Se 0.22 mg/kg Ba 6.4 mg/kg Hg 0.2 mg/kg Sm 0.106 mg/kg Br 12.9 mg/kg K 1840 mg/kg Sr 9.3 mg/kg Ce 1.28 mg/kg La 0.66 mg/kg Th 0.14 mg/kg Co 0.29 mg/kg Mn 63 mg/kg Zn 30.4 mg/kg Cs 0.11 mg/kg Na 320 mg/kg Cu 3.6 mg/kg Sb 0.073 mg/kg Information values for Al, Cd, Cl, Cr, Eu, Lu, Nd, P, Pb, Rb, Sc, Tb, V, Yb	20 g
BCR-273	Single cell protein The material consists of about 10 g single cell protein powder in a sealed argon filled ampoule. Certified values Ca 11.97 g/kg K 2.22 g/kg P 26.8 g/kg Fe 0.156 mg/kg N 121.6 g/kg Indicative values for Mg, N (Kjeldahl), Na, S	10 g
BCR-274	Single cell protein - Trace elements Certified values As..... 132 µg/kg Cu 13.1 µg/kg Se 1.03 mg/kg Cd 30 µg/kg Mn 51.9 mg/kg Zn 42.7 µg/g Co 39 µg/kg Pb 44 µg/kg Indicative values for F, I, Ni	10 g
New NIES23	Tea leaves - Elements Certified values Mg 0.169 ± 0.012 % Ca 0.249 ± 0.021 % Cu 9.48 ± 0.76 mg/kg P 0.472 ± 0.032 % Mn 704 ± 52 mg/kg Zn 31.9 ± 2.2 mg/kg K 2.03 ± 0.11 % Ni 7.89 ± 0.57 mg/kg Sr 3.93 ± 0.25 mg/kg Indicative values for S, Na, Al, Cs and Ba.	35 g

WEPAL plant reference materials

The Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL) runs international sample exchange programmes for continuous quality control of analytical data as produced by chemical laboratories. There are almost 700 laboratories who take part in one or more of WEPAL's regular ring-tests programmes.

The WEPAL plants reference samples are supplied with certificates including consensus values, indicative values and values for information, based on the results of the proficiency programme. The certificates are available on request.

	Code	Product	Unit
New	WEPAL-IPE-101	Coast cross (grass) / <i>Cynodon dactylon</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-103	Banana (seeds) / <i>Musa paradisiaca</i> (seeds) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-105	Elephant grass / <i>Pennisetum purpureum schum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-108	Parsley / <i>Petroselinum crispum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-110	Clover (Honey-stalk) / <i>Melilotus officinalis desr.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-111	Chive(s) / <i>Allium schoenoprasum l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-113	Rosa (plant) / <i>Rosa l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-114	Rosa (plant) / <i>Rosa l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-115	Rosa (plant) / <i>Rosa l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-116	Rosa (plant) / <i>Rosa l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-117	Rosa (plant) / <i>Rosa l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-118	Rosa (plant) / <i>Rosa l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-119	Rosa (plant) / <i>Rosa l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-120	Mushroom / <i>Agaricus bisporus</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-126	Maize (plant) / <i>Zea mays</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-131	Potato (bulb) / <i>Solanum tuberosum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-132	Broccoli / <i>Brassica oleracea l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-136	Bokashi / Bokashi - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-137	French bean / <i>Phaseolus vulgaris l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-138	Kiwi (leaf + stalk) / <i>Actinidia chinensis pl.</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-140	Dandelion (root) / <i>Radix taraxaci tot.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-141	Thyme / <i>Folia thymus vulgaris cong</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-143	Valerian root / <i>Valeriana officinalis</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-145	Valerian (root) / <i>Radix valerianae tot.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-149	Luzerne / <i>Medicago sativum</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-151	Grass / <i>Poaceae</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-152	Lucerne/ <i>Medicago savitum</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-162	Stinging nettle / <i>Urtica dioica</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-164	Chrysanthemum / <i>Chrysanthemum l.</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-165	Oil palm (leaf) / <i>Elaeis guineensis</i> - Inorganic composition (please ask for detailed information)	20 g
	Code	Product	Unit
New	WEPAL-IPE-167	French bean / <i>Phaseolus vulgaris</i> - Inorganic composition (please ask for detailed information)	20 g

Plants

	Code	Product	Unit
New	WEPAL-IPE-168	Sunflower / <i>Heliantus annuus</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-174	Tulip (tuber) / <i>Tulipa l.</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-176	Reed / <i>Phragmites communis</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-178	Green pea / <i>Pisum sativum</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-192	String bean (pods) / <i>Phaseolus vulgaris</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-200	Maize (shoots) / <i>Zea mays</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-548	Barley (grain) / <i>Hordeum vulgare</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-551	Peas (grain) / <i>Pisum sativum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-556	Wheat (grain) / <i>Triticum aestivum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-561	Summer barley (grain) / <i>Hordeum vulgare</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-565	Summer barley (grain) / <i>Hordeum distichon</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-568	Summer wheat (grain) / <i>Triticum aestivum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-599	Sprouts / <i>Brassica oleracea var. gemmifera</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-605	Summer barley / <i>Hordeum vulgare</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-606	Winter rye / <i>Secale cereale l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-638	Maize (plant) / <i>Zea mays L.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-677	Maize (plant) / <i>Zea mays</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-680	Barley (straw) / <i>Hordeum vulgare</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-681	Sugar-beet (pulp) / <i>Beta vulgaris</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-682	Wheat (straw) / <i>Triticum aestivum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-684	Wheat (grain) / <i>Triticum aestivum</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-686	Grass / <i>Poaceae</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-722	Amaryllis (leaf) / <i>Hippeastrum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-723	Maize (plant) / <i>Zea mays</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-732	Cucumber (fruit) / <i>Cucumis sativus</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-753	Cucumber (fruit) / <i>Cucumis sativus</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-761	Pine (needles) / <i>Pinus radiata</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-763	Lily (bulb) / <i>Lilium</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-767	Amaryllis (shoot) / <i>Hippeastrum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-768	Amaryllis (bulb) / <i>Hippeastrum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-775	Endive mixture / <i>Cichorium endiva l.</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-776	Lettuce / <i>Lactuca sativa</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-778	Celery (turnip) / <i>Apium graveolens</i> (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-780	Oats (grain) / <i>Avena sativa</i> - Inorganic composition (please ask for detailed information)	10 g

Plants

	Code	Product	Unit
New	WEPAL-IPE-783	Wheat (grain) / <i>Triticum aestivum</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-790	Scots pine (needles) / <i>Pinus silvestris</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-791	Crocus (tuber) / <i>Crocus vernus</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-792	Lettuce / <i>Lactuca sativa</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-814	Peanut (plant) / <i>Arachis hypogaea</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-815	Sunflower (plant) / <i>Helianthus annuus</i> l, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-816	Caster-oil (shoot) / <i>Ricinus communis</i> l, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-817	Cucumber (fruit) / <i>Cucumis sativus</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-820	Endive / <i>Cichorium endiva</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-827	Lily (bulb) / <i>Lilium</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-846	Carrots (shoot) / <i>Daucus carota</i> l, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-853	Carrots (leaf) / <i>Daucus carota</i> l, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-858	Forrest Litter - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-873	Gladiolus (leaf) / <i>Gladiolus</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-874	Gladiolus (bulb) / <i>Gladiolus</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-879	Conifers / <i>Coniferae</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-883	Carnation (straw) / <i>Dianthus</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-884	Yam / <i>Dioscorea</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-885	Maize (leaves) / <i>Zea mays</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-896	Artichoke / <i>Cynara scolymus</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-898	Cabbage / <i>Brassica oleracea</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-899	Cabbage (leaf) / <i>Brassica oleracea</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-900	Beet spinach / <i>Beta vulgaris</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-901	Maize (flour) / <i>Zea mays</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-903	Broadbeans / <i>Vicia faba</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-904	Broadbeans (bark) / <i>Vicia faba</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-920	Curly Kail (leaf) / <i>Brassica oleracea Laciniata</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-929	Banana (fruit) / <i>Musa paradisiaca</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-933	Lucerne / <i>Medicago sativum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-936	Iceberg lettuce (mixture) / <i>Lactuca sativa</i> l, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-937	Crocus (tuber) / <i>Crocus vernus</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-941	Gherkin (mixture) / <i>Sicyos</i> l, - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-944	Wintercarrots (mixture) / <i>Daucus carota</i> l, var, (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-945	Apple (leaf Mixture) / <i>Malus</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-946	Wintercarrots (leaf) / <i>Daucus carota</i> l, var, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-947	Gladiolus (mixture) / <i>Juncaceae</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-950	Melon / <i>Cucumis melo</i> l, - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-951	Aubergine (leaf+fruit) / <i>Solanum melongena</i> l, - Inorganic composition (please ask for detailed information)	10 g

Plants

	Code	Product	Unit
New	WEPAL-IPE-952	Grass (mixture) / <i>Poaceae</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-954	Seaclub-rush / <i>Scirpus maritimus</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-955	Cord grass / <i>Spartina anglica</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-956	Sea aster / <i>Aster tripolium</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-962	Wheat (straw) / <i>Triticum L.</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-965	Tall fescue / <i>Festuca arundinacea</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-966	Lucerne / <i>Medicago sativum</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-968	Maize (stalk) / <i>Zea mays</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-971	Potato (mixture) / <i>Solanum tuberosum</i> - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-975	Lucerne / <i>Medicago sativum</i> - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-976	Pansy / <i>Herba violae tric, tot.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-977	Angelica / <i>Radix angelicae totum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-978	Lucerne / <i>Medicago sativum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-979	Dandelion (leaf) / <i>Folia taraxaci</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-981	Grape (stalk) / <i>Vitis labrusca</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-982	Lettuce / <i>Lactuca sativa l, Castelfranco</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-984	Spinach / <i>Spinacia oleracea</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-986	Rubber plant (leaves) / <i>Ficus elastica roxburghii</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-987	Lucerne / <i>Medicago sativum</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-988	Mangrove (leaf) / <i>Ceriops candolleana</i> (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-990	Alfalfa farine de Lucerne / <i>Medicago sativa</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-991	Juniper-shoot / <i>Juniperus l.</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-992	Saw-dust - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-996	Red-chicory / <i>Cycorium intibus l.</i> (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-997	Red-chicory / <i>Cycorium intibus l.</i> (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-998	Potato (tuber) / <i>Solanum tuberosom</i> - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-999	Acacia (leaf) / <i>Robina pseudo</i> - Inorganic composition (please ask for detailed information)	10 g

