Electronic Supplementary Material (ESI) for Journal of Analytical Atomic Spectrometry.

Sample ID list: Samples #3, #6, #9 and #16 are from maize grains (*Zea mays*) grains. Samples #1 soy (*Glycine max*), #2 acerola (*Malpighia emarginata*), #4 persimmon *(Diospyros kaki*), #5 sorghum (*Sorghum bicolor*), #7 macadamia (*Macadamia sp.*), #8 teak (*Tectona grandis*), #10 grass (*Poaceae sp.*), #11 palm tree (*Arecaceae sp.*), #12 eucalyptus (*Eucalyptus sp.*), #13 pau rei (*Pterygota brasiliensis*), #14 caja mirin (*Spondias mombin*) and #15 figueira (*Ficus sp.*) leaves.

Supplementary information 1. Results for macronutrients (g kg^{-1}) in plant materials determined (n=3) by ICP OES after sample digestion by CHDS, MWAD and NP procedures.

Sample	Method	Macronutrients concentration (g kg^{-1})					Sample	Macronutrients concentration (g kg^{-1})				
		P	K	Ca	Mg	S		P	K	Ca	Mg	S
	NP	2.53 ± 0.04	25.2 ± 0.4	8.2 ± 0.1	2.30 ± 0.02	2.62 ± 0.03		2.2 ± 0.2	3.3 ± 0.4	0.49 ± 0.03	0.8 ± 0.1	0.84 ± 0.03
1	MWAD	2.60 ± 0.07	27.2 ± 0.7	9.2 ± 0.5	2.49 ± 0.08	2.72 ± 0.05	9	2.2 ± 0.2	3.4 ± 0.2	0.54 ± 0.02	0.8 ± 0.1	0.83 ± 0.06
	CHDS	2.59 ± 0.03	25.6 ± 0.4	8.6 ± 0.3	2.38 ± 0.02	2.66 ± 0.07		2.3 ± 0.1	3.4 ± 0.1	0.57 ± 0.06	0.84 ± 0.04	0.86 ± 0.06
	NP	2.12 ± 0.03	20 ± 1	46 ± 2	10.9 ± 0.5	3.78 ± 0.08		2.47 ± 0.05	31.6 ± 0.8	4.9 ± 0.2	1.69 ± 0.05	2.01 ± 0.04
2	MWAD	2.09 ± 0.08	19.0 ± 0.6	42 ± 2	10.40 ± 0.5	3.6 ± 0.1	10	2.5 ± 0.2	32 ± 2	5.0 ± 0.5	1.7 ± 0.2	2.1 ± 0.1
	CHDS	1.93 ± 0.07	17.4 ± 0.7	39 ± 2	9.4 ± 0.3	3.4 ± 0.1		2.5 ± 0.1	32 ± 2	5.0 ± 0.3	1.9 ± 0.2	1.98 ± 0.07
	NP	2.21 ± 0.01	3.38 ± 0.03	0.19 ± 0.04	0.78 ± 0.02	0.84 ± 0.02		0.54 ± 0.02	7.04 ± 0.08	4.3 ± 0.3	1.53 ± 0.01	1.8 ± 0.2
3	MWAD	2.21 ± 0.05	3.61 ± 0.01	0.17 ± 0.01	0.82 ± 0.03	0.86 ± 0.07	11	0.54 ± 0.01	6.9 ± 0.2	4.4 ± 0.2	1.46 ± 0.01	1.86 ± 0.02
	CHDS	2.08 ± 0.08	3.3 ± 0.2	0.14 ± 0.03	0.73 ± 0.05	0.83 ± 0.04		0.58 ± 0.03	7.2 ± 0.3	4.8 ± 0.2	1.7 ± 0.1	2.04 ± 0.06
	NP	1.22 ± 0.01	34.0 ± 0.5	12.1 ± 0.1	3.4 ± 0.1	2.54 ± 0.05		0.95 ± 0.02	7.3 ± 0.3	9.0 ± 0.4	2.4 ± 0.1	1.13 ± 0.02
4	MWAD	1.18 ± 0.04	34 ± 3	12.0 ± 0.9	3.4 ± 0.2	2.5 ± 0.1	12	0.90 ± 0.02	6.7 ± 0.2	8.7 ± 0.05	2.3 ± 0.1	1.05 ± 0.01
	CHDS	1.19 ± 0.06	33 ± 2	11.8 ± 0.6	3.3 ± 0.1	2.5 ± 0.1		0.95 ± 0.07	7.2 ± 0.5	9.2 ± 0.8	2.5 ± 0.2	1.09 ± 0.07
	NP	4.6 ± 0.1	28 ± 2	4.5 ± 0.2	3.6 ± 0.2	1.71 ± 0.04		2.98 ± 0.07	16.9 ± 0.3	28.3 ± 0.8	8.3 ± 0.3	1.84 ± 0.04
5	MWAD	4.24 ± 0.03	26 ± 2	4.2 ± 0.1	3.4 ± 0.2	1.9 ± 0.4	13	3.0 ± 0.1	16.9 ± 0.4	29.0 ± 0.5	8.5 ± 0.1	1.82 ± 0.06
	CHDS	4.5 ± 0.3	28 ± 1	4.5 ± 0.3	3.7 ± 0.2	1.7 ± 0.1		3.0 ± 0.2	17 ± 1	28.0 ± 0.7	8.6 ± 0.5	1.8 ± 0.1
	NP	2.3 ± 0.1	3.6 ± 0.4	0.22 ± 0.08	0.8 ± 0.1	0.87 ± 0.05		1.53 ± 0.01	6.48 ± 0.03	23.3 ± 0.3	2.44 ± 0.02	2.69 ± 0.07
6	MWAD	2.21 ± 0.03	3.6 ± 0.2	0.17 ± 0.02	0.82 ± 0.04	0.88 ± 0.06	14	1.54 ± 0.05	6.5 ± 0.2	23.7 ± 1.2	2.7 ± 0.1	2.65 ± 0.05
	CHDS	2.1 ± 0.1	3.3 ± 0.2	0.19 ± 0.08	0.74 ± 0.05	0.84 ± 0.04		1.57 ± 0.06	6.6 ± 0.3	24.7 ± 1.5	2.6 ± 0.2	2.73 ± 0.06
	NP	0.57 ± 0.1	6.2 ± 0.3	6.7 ± 0.3	1.0 ± 0.3	1.2 ± 0.2		1.62 ± 0.01	15.0 ± 0.1	16.3 ± 0.2	2.01 ± 0.01	1.37 ± 0.02
7	MWAD	0.65 ± 0.03	6.4 ± 0.2	6.9 ± 0.2	1.29 ± 0.02	1.5 ± 0.1	15	1.57 ± 0.02	14.5 ± 0.4	15.8 ± 0.4	1.97 ± 0.04	1.33 ± 0.05
	CHDS	0.60 ± 0.04	5.9 ± 0.4	6.6 ± 0.5	1.2 ± 0.2	1.20 ± 0.08		1.58 ± 0.04	14.3 ± 0.5	15.9 ± 0.6	1.94 ± 0.06	1.33 ± 0.05
	NP	1.34 ± 0.03	14.4 ± 0.6	20 ± 1	3.4 ± 0.2	1.27 ± 0.04		2.08 ± 0.09	3.20 ± 0.08	0.42 ± 0.03	0.69 ± 0.04	0.76 ± 0.01*
8	MWAD	1.22 ± 0.06	13.1 ± 0.3	18.2 ± 0.3	3.08 ± 0.07	1.7 ± 0.4	16	1.91 ± 0.03	2.96 ± 0.06	0.55 ± 0.02	0.61 ± 0.01	0.69 ± 0.02
	CHDS	1.3 ± 0.2	13.7 ± 0.2	18.4 ± 0.8	3.3 ± 0.4	1.3 ± 0.2		2.00 ± 0.06	3.0 ± 0.1	0.54 ± 0.07	0.68 ± 0.05	0.72 ± 0.03

*Non-concordant values at 95% confidence level (t-test)

Supplementary information 2. Results for micronutrients (mg kg^{-1}) in plant materials determined (n=3) by ICP OES after sample digestion by CHDS, MWAD and NP procedures.

Sample	Method	Micronutrients concentration (mg kg^{-1})					Sample	Micronutrients concentration (mg kg^{-1})				
		B	Cu	Fe	Mn	Zn		B	Cu	Fe	Mn	Zn
	NP	-	6.9 ± 0.1	157 ± 1	148 ± 1	32.6 ± 0.2		-	1.7 ± 0.1	146 ± 10	5.7 ± 0.8	14 ± 1
1	MWAD	44 ± 4	6.1 ± 0.3	167 ± 5	157 ± 2	36 ± 2	9	21.8 ± 0.7	1.9 ± 0.2	156 ± 9	5.3 ± 0.2	14.3 ± 0.7
	CHDS	45.0 ± 0.9	6.4 ± 0.1	165 ± 12	156 ± 3	37 ± 2		20.6 ± 0.7	1.7 ± 0.1	140 ± 5	6.1 ± 0.8	15.3 ± 0.6
	NP	-	6.3 ± 0.1	199 ± 2	33.5 ± 0.2	17.1 ± 0.1		-	12.6 ± 0.3	328 ± 5	143 ± 1	36.0 ± 0.6
2	MWAD	62 ± 1	5.6 ± 0.1	197 ± 2	33.9 ± 0.2	20.7 ± 0.1	10	11.3 ± 0.3	12.3 ± 0.1	322 ± 6	138 ± 4	34.4 ± 0.3
	CHDS	62 ± 1	5.7 ± 0.1	191 ± 15	36 ± 2	21 ± 1		11.6 ± 0.1	12.2 ± 0.2	322 ± 5	143 ± 2	35.3 ± 0.4
	NP	-	2.1 ± 0.1	164 ± 26	5.0 ± 0.6	14.6 ± 0.8		-	2.66 ± 0.2	252 ± 20	150 ± 5	10.1± 0.7
3	MWAD	19 ± 2	1.83 ± 0.05	157 ± 29	4.2 ± 0.2	16 ± 1	11	14 ± 1	2.5 ± 0.1	272 ± 4	150 ± 1	9.7 ± 0.9
	CHDS	16.4 ± 0.5	2.3 ± 0.5	151 ± 6	4.9 ± 0.6	15.6 ± 0.6		16.5 ± 0.4	2.62 ± 0.05	272 ± 16	154 ± 3	11.0 ± 0.3
	NP	-	4.1 ± 0.1	156 ± 7	1408 ± 12	14.8 ± 0.2		-	6.3 ± 0.3	283 ± 10	768 ± 16	14.6 ± 0.7
4	MWAD	53.0 ± 0.9	3.79 ± 0.06	158 ± 4	1475 ± 9	18.24 ± 0.02	12	49.8 ± 0.2	5.7 ± 0.1	293 ± 7	754 ± 16	14.8 ± 0.9
	CHDS	52 ± 1	4.1 ± 0.1	156 ± 8	1474 ± 28	19 ± 1		50.6 ± 0.6	5.9 ± 0.2	306 ± 7	739 ± 7	15.7 ± 0.2
	NP	-	8.7 ± 0.1	205 ± 2	16.9 ± 0.07	21.6 ± 0.5		-	14.6 ± 0.2	212 ± 4	353 ± 7	23.9 ± 0.8
5	MWAD	6.0 ± 0.2	8.2 ± 0.2	197 ± 9	17.5 ± 0.9	25.1 ± 0.6	13	65 ± 2	14.3 ± 0.1	217 ± 1	345 ± 3	24 ± 1
	CHDS	5.8 ± 0.1	8.4 ± 0.1	203 ± 2	16.9 ± 0.1	24.2 ± 0.3		68 ± 1	14.8 ± 0.1	215 ± 5	348 ± 2	24.4 ± 0.4
	NP	-	1.9 ± 0.1	168 ± 19	5.1 ± 0.3	14.7 ± 0.4		-	10.5 ± 0.6	424 ± 7	76 ± 1	15.6 ± 0.3
6	MWAD	18 ± 2	1.91 ± 0.01	132 ± 4	4.2 ± 0.1	16.4 ± 0.2	14	46 ± 1	9.7 ± 0.2	400 ± 4*	76 ± 3	15.5 ± 0.7
	CHDS	15.9 ± 0.5	2.00 ± 0.04	163 ± 26	5.8 ± 0.5	16.3 ± 0.3		44 ± 1	10.2 ± 0.3	442 ± 26	76 ± 2	16.1 ± 0.1
	NP	-	4.2 ± 0.1	152 ± 9	937 ± 7	7.2 ± 0.3		-	5.6 ± 0.3	200 ± 2*	23.1 ± 0.3	12.5 ± 0.3
7	MWAD	39.4 ± 0.3	3.87 ± 0.03	156 ± 7	993 ± 26	10.4 ± 0.4	15	76 ± 1	5.3 ± 0.1	196 ± 6	23.5 ± 0.5	12.7 ± 0.4
	CHDS	37 ± 1	4.10 ± 0.09	167 ± 11	1024 ± 16	9.78 ± 0.06		76 ± 3	5.4 ± 0.2	205 ± 1	24.5± 0.4	13.7 ± 0.3
	NP	-	11.0 ± 0.2	572 ± 5	52 ± 1	22.6 ± 0.4		-	1.76 ± 0.05*	150 ± 2	6.0 ± 0.4	13.7 ± 0.2
8	MWAD	36 ± 1	10.0 ± 0.2	558 ± 13	55 ± 1	26.4 ± 0.2	16	21 ± 1	1.5 ± 0.1	158 ± 4	6.3 ± 0.9	13.5 ± 0.3
	CHDS	38 ± 4	11 ± 1	571 ± 61	58 ± 7	27 ± 3		21.6 ± 0.7	1.6 ± 0.1	151 ± 5	6.6 ± 0.5	13.3 ± 0.9

*Non-concordant values at 95% confidence level (t-test)