Table S1. Dried *U. barbata* samples digestion conditions for ICP-MS mineral analysis

Step	Temperature (°C)	Power of microwave digestion system (W)	Time (min)	Fan level
Power ramp	-	1450	15	1
Power hold	180	1450	45	1
Cooling	70	0	-	3

For calibration standard solutions (Cal.Std.) preparation, the suitable standard solutions are registered in Table S2.

Table S2. ICP-MS Standard solutions

Solution	Concentration	Manufacturer
Arsenic Standard Solution	1000 μg/mL	Perkin Elmer
Lead Standard Solution	1000 μg/mL	Perkin Elmer
Cadmium Standard Solution	1000 μg/mL	Perkin Elmer
Mercury Standard Solution	10 μg/mL	Perkin Elmer
Aluminium Standard Solution	1000 μg/mL	Perkin Elmer
Calcium Standard Solution	1000 μg/mL	Perkin Elmer
Iron Standard Solution	1000 μg/mL	Perkin Elmer
Magnesium Standard Solution	1000 μg/mL	Perkin Elmer
Manganase Standard Solution	1000 μg/mL	Perkin Elmer
Zinc Standard Solution	1000 μg/mL	Perkin Elmer
Silver Standard Solution	1000 μg/mL	Perkin Elmer
Barium Standard Solution	1000 μg/mL	Perkin Elmer
Cobalt Standard Solution	1000 μg/mL	Perkin Elmer
Chromium Standard Solution	1000 μg/mL	Perkin Elmer
Cooper Standard Solution	1000 μg/mL	Perkin Elmer
Lithium Standard Solution	1000 μg/mL	Perkin Elmer
Nickel Standard Solution	1000 μg/mL	Perkin Elmer
Thallium Standard Solution	1000 μg/mL	Perkin Elmer
Vanadium Standard Solution	1000 μg/mL	Perkin Elmer
Molybdenum Standard Solution	1000 μg/mL	Perkin Elmer
Palladium Standard Solution	1000 μg/mL	Perkin Elmer
Platinum Standard Solution	1000 μg/mL	Perkin Elmer
Antimony Standard Solution	1000 μg/mL	Perkin Elmer
NexION Setup Solution (Be, Ce, Fe, In, Li, Mg, Pb, U)	1 μg/L	Perkin Elmer
NexION KED Mode Setup Solution (Be, Ce, Fe, In, Li, Mg, Pb, U)	1 μg/L	Perkin Elmer

Four intermediary stock solutions (Sol. I – Sol. IV) were prepared as follows:

Sol. I (As, Pb, Cd, Hg) 1 mg/L: In a 20 mL volumetric flask were added: 0.2 mL 65% HNO_3, 0.02 mL solution As 1000 mg / L, 0.02 mL solution Pb 1000 mg / L, 0.02 mL solution Cd 1000 mg / L and 2 mL solution Hg 10 mg / L; then, the obtained solution was brought to the mark with ultrapure water.

Sol. II (Ca, Fe, Mg, Mn, Zn) 10 mg/L: In a 50 mL volumetric flask were added: 0.5 mL 65% HNO_3, 0.5 mL solution Ca 1000 mg / L, 0.5 mL solution Fe 1000 mg / L, 0.5 mL solution Mg 1000 mg / L, 0.5 mL solution Mn 1000 mg / L and 0.5 mL solution Zn 1000 mg / L; then, the flask content was brought to the mark with ultrapure water.

Sol. III (Al) 10 mg/L: In a 50 mL volumetric flask were added 0.5 mL 65% HNO_3, 0.5 mL solution Al 1000 mg/L, and ultrapure water up to the mark.

Sol. IV (Ag, Ba, Co, Cr, Cu, Li, Ni, Tl, V, Mo, Pd, Pt, Sb) 1 mg/L: In a 50 mL volumetric flask were added: 0.5 mL 65% HNO_3, 0.05 mL solution Ag 1000 mg / L, 0.05 mL solution Ba 1000 mg / L, 0.05 mL solution Co 1000 mg / L, 0.05 mL solution Cr 1000 mg / L, 0.05 mL solution Cu, 0.05 mL solution Li 1000 mg / L, 0.05 mL solution Ni 1000 mg / L, 0.05 mL solution Tl 1000 mg / L, 0.05 mL solution V 1000 mg / L, 0.05 mL solution Mo 1000 mg / L, 0.05 mL solution Pd 1000 mg / L, 0.05 mL solution Pt 1000 mg / L and 0.05 mL solution Sb 1000 mg / L; then, the obtained solution was brought to the mark with ultrapure water.

The four intermediate stock solutions (Sol. I – Sol. IV) were used for Cal.Std. Solutions (E1-E5) preparation. Thus, in each 25 mL volumetric flask were added 4 mL 65% HNO_3, different volumes (mL) of Sol. I – Sol. IV (as registered in table S4) and ultrapure water up to the mark.

Table S3. Preparation of calibration standard solutions (E1-E5)

Solution	E1	E2	E3	E4	E5
			Volume (mL)		
65% HNO_3	4.000	4.000	4.000	4.000	4.000
Sol. I	0.025	0.125	0.250	0.375	0.625
Sol. II	0.125	0.250	0.500	0.750	1.250
Sol. III	0.025	0.125	0.250	0.375	0.500
Sol. IV	0.025	0.125	0.250	1.250	2.500

Table S4. Concentrations of calibration standard solutions (E1-E5) for different elements

Element	E1 (μg/L)	E2 (μg/L)	E3 (μg/L)	E4 (μg/L)	E5 (μg/L)
As, Pb, Cd, Hg	1	5	10	15	25
Ca, Fe, Mg, Mn, Zn	50	100	200	300	500
Al	10	50	100	150	200
Ag, Ba, Co, Cr, Cu, Li, Ni, Tl, V, Mo, Pd, P, Sb	1	5	10	50	100

Table S5. Calibration Curve Range, R^2, LOD, and LOQ (μg/L and μg/g) for each element.

Element	m/z	Calibration Curve Range		R^2	LOD		LOQ estimated value	
		μg/L	μg/g		μg/L	μg/g	μg/L	μg/g
Ag	107	1 – 100	0.1 – 10	0.999997	0,058	0,006	1,000	0,100
Al	27	10 – 200	1 – 20	0.999872	2,863	0,286	10,00	1,000
As	75	1 – 25	0.1 – 2.5	0.999861	0,345	0,035	1,000	0,100
Ba	138	1 – 100	0.1 – 10	0.999992	0,067	0,007	1,000	0,100

Ca	43	50 – 500	5 – 50	0.996738	4,924	0,492	50,00	5,000
Cd	111	1 – 25	0.1 – 2.5	0.999853	0,147	0,015	1,000	0,100
Co	59	1 – 100	0.1 – 10	0.999982	0,060	0,006	1,000	0,100
Cr	52	1 – 100	0.1 – 10	0.999976	0,090	0,009	1,000	0,100
Cu	63	1 – 100	0.1 – 10	0.999995	0,057	0,006	1,000	0,100
Fe	57	50 – 500	5 – 50	0.998754	3,392	0,339	50,00	5,000
Li	7	1 – 100	0.1 – 10	0.999932	0,198	0,020	1,000	0,100
Mg	24	50 – 500	5 – 50	0.999858	2,523	0,252	50,00	5,000
Mn	55	50 – 500	5 – 50	0.999801	1,911	0,191	50,00	5,000
Ni	60	1 – 100	0.1 – 10	0.999986	0,096	0,010	1,000	0,100
Pb	208	1 – 25	0.1 – 2.5	0.999646	0,053	0,005	1,000	0,100
Tl	205	1 – 100	0.1 – 10	0.999985	0,025	0,002	1,000	0,100
V	51	1 – 100	0.1 – 10	0.999991	0,103	0,010	1,000	0,100
Zn	66	50 – 500	5 – 50	0.999791	1,996	0,200	50,00	5,000
Hg	202	1 – 25	0.1 – 2.5	0.999751	0,198	0,020	1,000	0,100
Mo	98	1 – 100	0.1 – 10	0.999995	0,097	0,010	1,000	0,100
Pd	106	1 – 100	0.1 – 10	0.999998	0,064	0,006	1,000	0,100
Pt	195	1 – 100	0.1 – 10	0.999998	0,027	0,003	1,000	0,100
Sb	121	1 – 100	0.1 – 10	0.999984	0,138	0,014	1,000	0,100

m/z - mass-to-charge ratio, LOD – Detection limit, LOQ – Quantification limit, R^2 – correlation coefficient

Figure S2 represents the calibration curves for 23 elements in ICP-MS analysis, where:

- Apparent concentration is each (E1-E5) calibration standard solution concentration (μg/L)
- Net intensity is the intensity of the signal received by the ICP detector, corresponding to the number of metal ions striking the detector every second (measured in count per second = CPS) from each (E1-E5) calibration standard solution
- Eqn.=linear equation
- Cor.Coeff.= coefficient of correlation (R^2)
- BEC = background equivalent concentration (μg/L)
- DL=detection limit or limit of detection (LOD, μg/L) (https://resources.perkinelmer.com/labsolutions/resources/docs/WHP_Atomic_Spectroscopy-Effects_on_Accuracy_and_Detection_Limits_013559_01.pdf)