

Table S1. Microwave programs for soil and CRM Soil (a) and olive and CRM Leaves (b)

(a)

Power	1600 Watt
Temperature Ramp	10 min (from R.T. to 200°C)
Working Temperature	200 °C
Working Time (at 200°C)	50 min

(b)

First step (Open vessel + HNO₃)

Working Time	60 min
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Second step (Closed vessel in microwave + H₂O₂)

Power	1600 Watt
Temperature Ramp	10 min (from R.T. to 200°C)
Working Temperature	200 °C
Working Time (at 200°C)	50 min

Table S2. Average amounts, standard deviations and recover percentage of REE in the INCT-OBTL-5 and 2586 CRM samples (in bold the certified values the others are informative ones). LOQ, in nanomoles Kg⁻¹, and R² from calibration curve.

	INCT-OBTL-5 nanomoli/kg					SRM 2586 micromoli/kg					LOQ	R ²
	C _{av}	σ	RSD%	CRM	REC%	C _{av}	σ	RSD%	CRM	REC%		
Y	11888.4	314.9	2.6	10831.2	110	234.2	4.9	2.1	230.6	101.5	0.85	0.99998
La	11785.5	496.8	4.2	12167	97	193.5	5.8	3.0	194.4	99.5	1.23	0.99996
Ce	20274.8	1054.3	5.2	21341.9	95	409.4	18.4	4.5	407.6	100.4	1.54	0.99999
Pr	2384.7	106.5	4.4	2278.2	105	47.3	1.4	2.9	48.1	98.3	0.3	0.99998
Nd	8918.2	339.8	3.8	9223.3	97	188.9	2.8	1.5	188.6	100.1	0.62	0.99997
Sm	1702.1	46.5	2.8	1755.3	97	41.3	0.70	1.7	40.0	103.1	0.22	0.99997
Eu	415.9	6.2	1.5	396.1	105	8.1	0.15	1.8	8.8	92.0	0.18	0.99996
Gd	1699.3	37.4	2.2	1544.8	110	37.5	0.34	0.9	38.4	97.6	0.22	0.9928
Tb	212.7	2.5	1.2	218.4	97	4.3	0.03	0.8	5.0	84.4	0.08	0.99998
Dy	1157.5	13.5	1.2	1132.3	102	27.9	0.25	0.9	28.9	96.6	0.21	0.99999
Ho	217.7	3	1.4	209.2	104	6.1	0.07	1.2	6.7	90.6	0.14	0.99997
Er	609.7	12	1.7	603.7	101	19.9	0.26	1.3	19.7	100.9	0.16	0.99998
Tm	78.7	1.8	1.9	80.5	98	2.5	0.04	1.5	3.0	81.6	0.09	0.99998
Yb	647.4	28.9	4.8	664.7	97	10.9	0.23	2.1	11.9	90.8	0.14	0.99999
Lu	71.6	1.6	2.3	95.4	75	2.3	0.03	1.1	*	*	0.15	0.99999

Table S3. Average amounts in micromoles Kg⁻¹ and standard deviations of REE in Campo Carboj soil samples.

	Pseudo-total		Bioavailability (DTPA)	
	average	± std. dev.	average	± std. dev.
La	142.2	17.0	15.2	4.6
Ce	314.9	27.9	26.6	3.4
Pr	33.5	4.1	4.1	1.2
Nd	129.3	16.9	17.4	5.0
Sm	24.1	3.0	3.6	1.0
Eu	5.0	0.7	0.8	0.2
Gd	23.9	3.1	3.8	1.0
Tb	2.9	0.4	0.5	0.1
Dy	13.6	1.9	2.5	0.6
Y	128.8	19.5	24.8	6.2
Ho	2.5	0.3	0.4	0.1
Er	6.7	1.0	1.1	0.2
Tm	0.8	0.1	0.14	0.03
Yb	5.0	0.7	0.8	0.2
Lu	0.7	0.1	0.12	0.02

Figure S1. UCC-normalised REE pattern of all Campo Carboj olive samples

