Supplementary Materials

Multi-Elemental Characterization of Soils in the Vicinity of Siderurgical Industry: Levels, Depth Migration and Toxic Risk

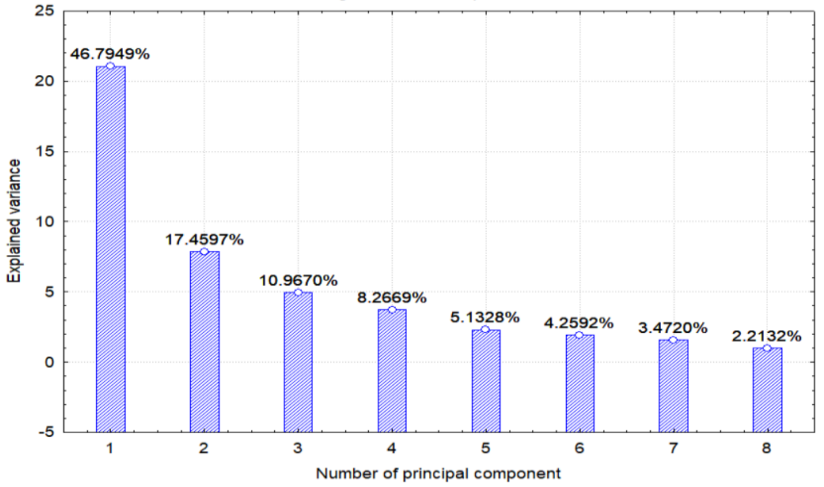
Antoaneta Ene [1,*], Florin Sloată [1], Marina V. Frontasyeva [2], Octavian G. Duliu [3,4], Alina Sion [1], Steluta Gosav [1] and Diana Persa [3]

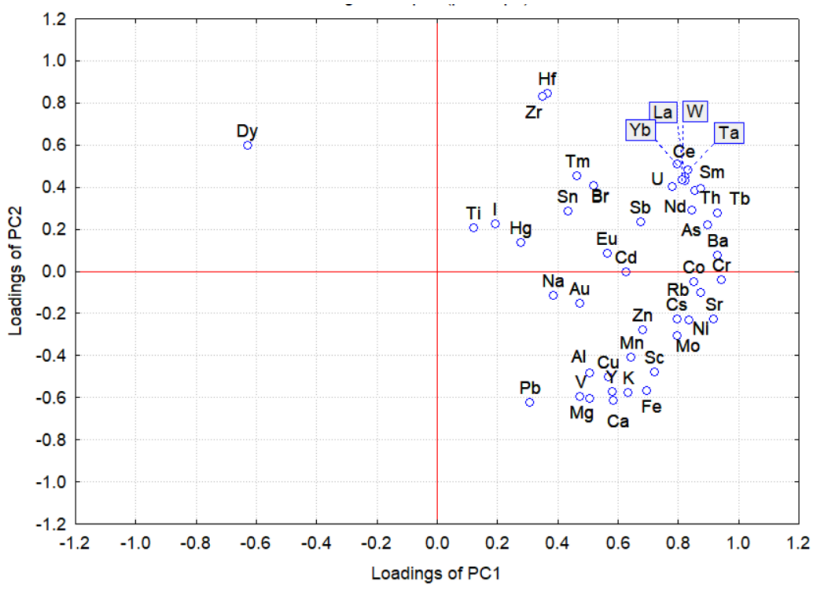
[1] INPOLDE Research Center, Department of Chemistry, Physics and Environment, Faculty of Sciences and Environment, Dunarea de Jos University of Galati, 47 Domneasca St., 800008 Galati, Romania; sloata.florin@gmail.com (F.S.); alina.sion@ugal.ro (A.S.); sgosav@ugal.ro (S.G.)
[2] Joint Institute for Nuclear Research, 6 Joliot Curie St., 141980 Dubna, Russian Federation; marina@jinr.ru
[3] Geological Institute of Romania, 1 Caransebes St., 012271 Bucharest, Romania; o.duliu@fizica.unibuc.ro (O.G.D.); diana.persa@igr.ro (D.P.)
[4] Department of Structure of Matter, Earth and Atmospheric Physics, Astrophysics, Faculty of Physics, University of Bucharest, 405 Atomistilor St., 077125 Magurele, Ilfov, Romania
* Correspondence: antoaneta.ene@ugal.ro

Principal Component Analysis (PCA)

0-5 cm depth

Component	Principal Components Analysis Eigenvalues (Soluri_0-5.sta) Number of components is 4 Principal Components Analysis sum of variance 45.0000			
	Eigenvalues	% Total variance	Cumulative eigenvalue	Cumulative %
1	21.05769	46.79486	21.05769	46.79486
2	7.85687	17.45972	28.91456	64.25458
3	4.93516	10.96702	33.84972	75.22160
4	3.72013	8.26694	37.56984	83.48854





Loading of PC1 for each variable

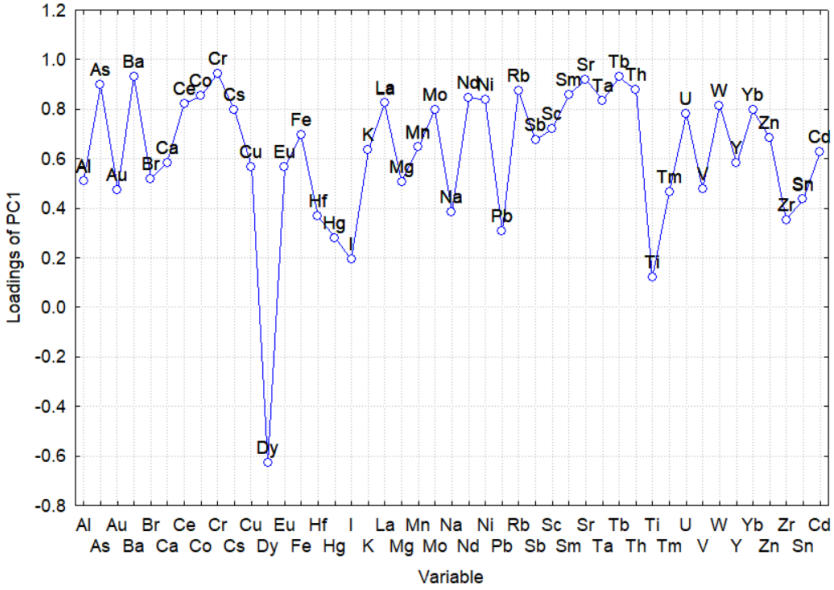
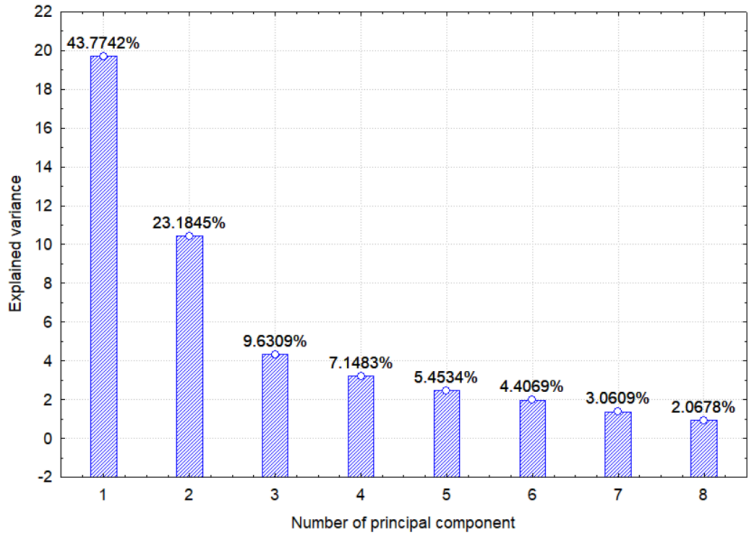


Figure S1. Explained variance for the principal components and plot of the PC2 loadings as a function of PC1 loadings.

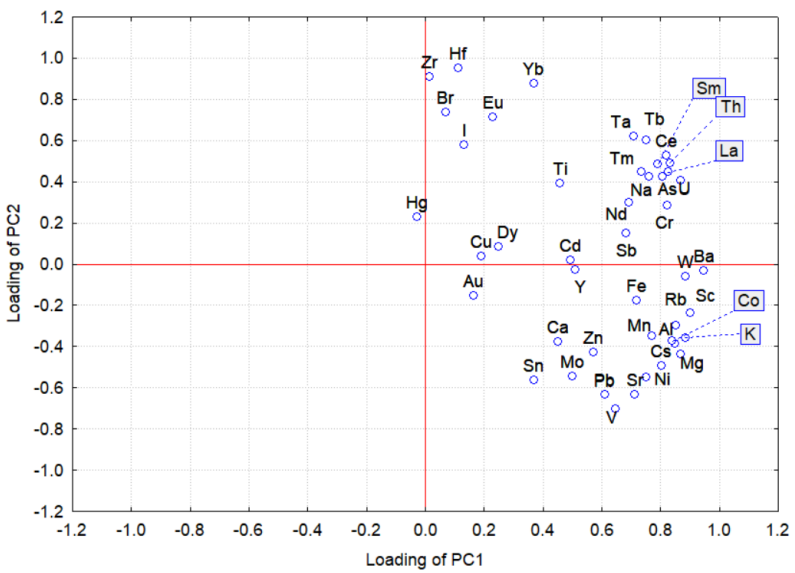
5-20 cm depth

Principal Components Analysis Eigenvalues (Soluri_5-20.sta)
Number of components is 4
Principal Components Analysis sum of variance 45.0000

Component	Eigenvalues	% Total variance	Cumulative eigenvalue	Cumulative %
1	19.69841	43.77425	19.69841	43.77425
2	10.43303	23.18450	30.13144	66.95875
3	4.33392	9.63094	34.46536	76.58969
4	3.21673	7.14829	37.68209	83.73797



Loading of PC1 for each variable



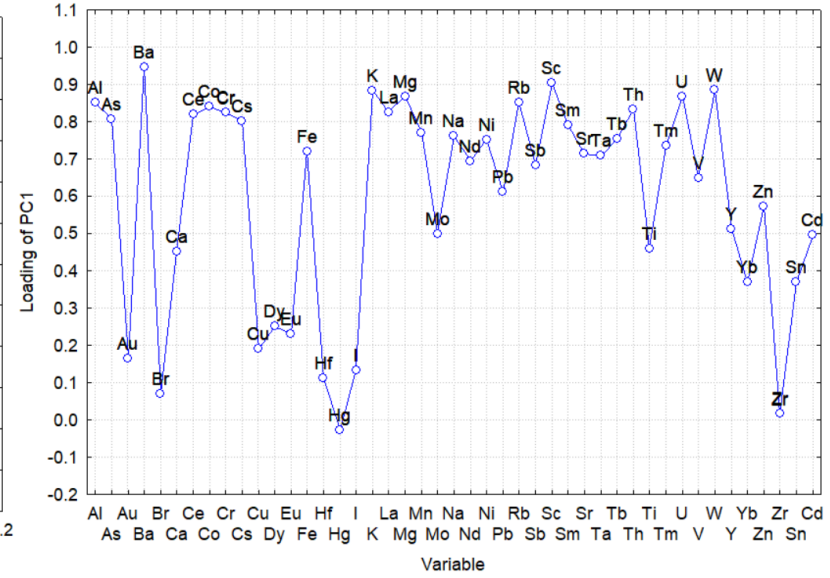
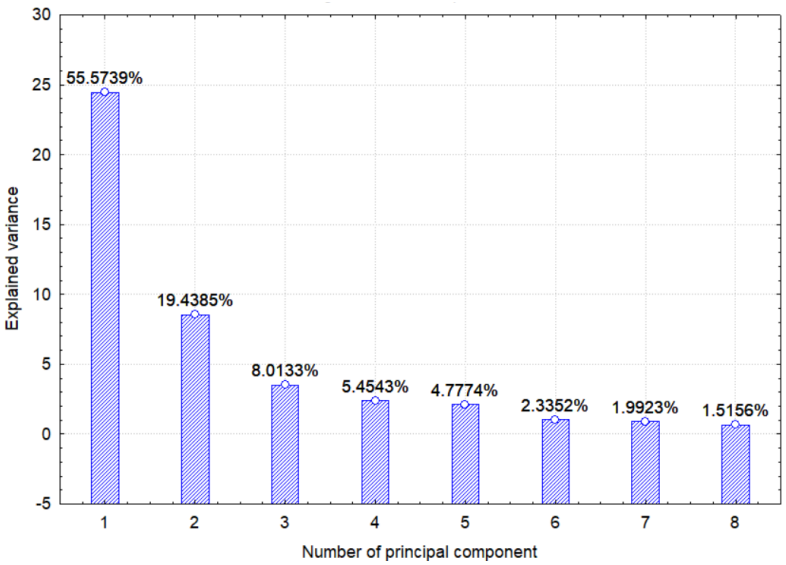


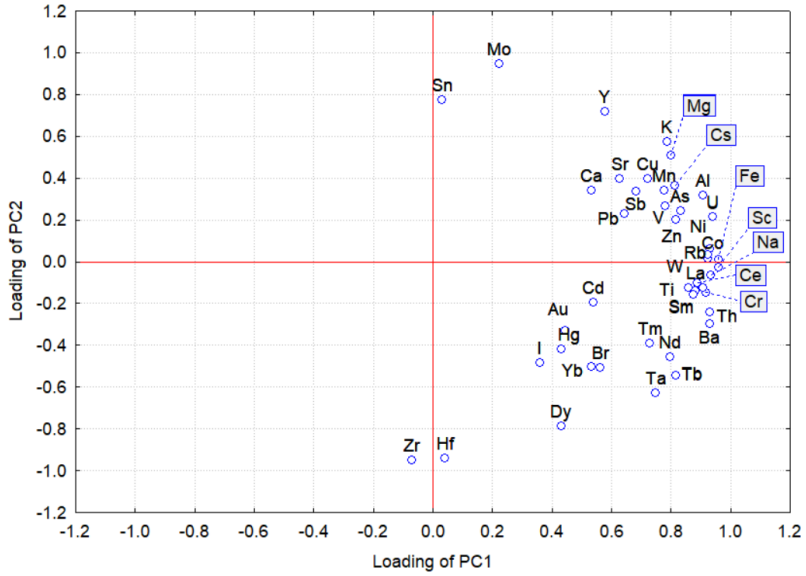
Figure S1. continued

20-30 cm depth

Component	Principal Components Analysis Eigenvalues (Soluri_20-30.sta) Number of components is 4 Principal Components Analysis sum of variance 44.0000 **Eigenvalues**	% Total variance	Cumulative eigenvalue	Cumulative %
1	24.45253	55.57393	24.45253	55.57393
2	8.55295	19.43851	33.00547	75.01244
3	3.52584	8.01326	36.53131	83.02570
4	2.39990	5.45432	38.93121	88.48002



Loading of PC1 for each variable



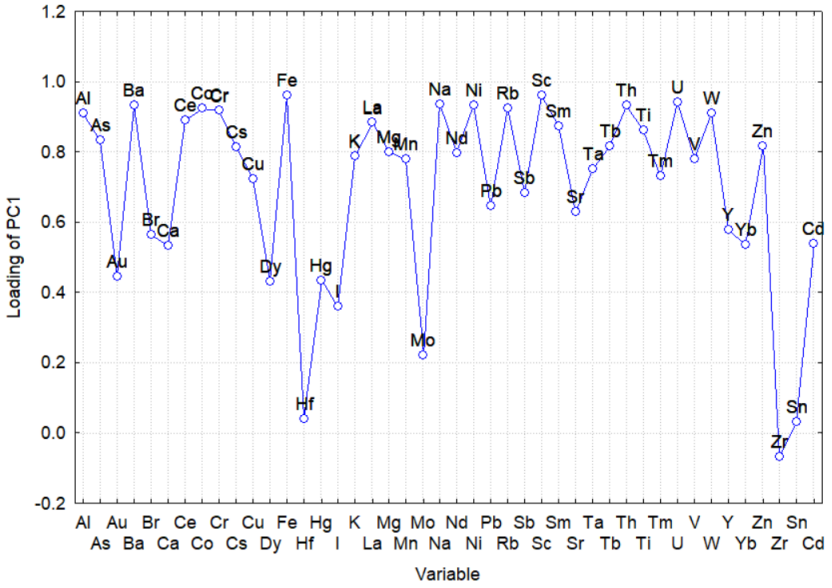


Figure S1. continued

Cluster Analysis (CA)

0-5 cm depth

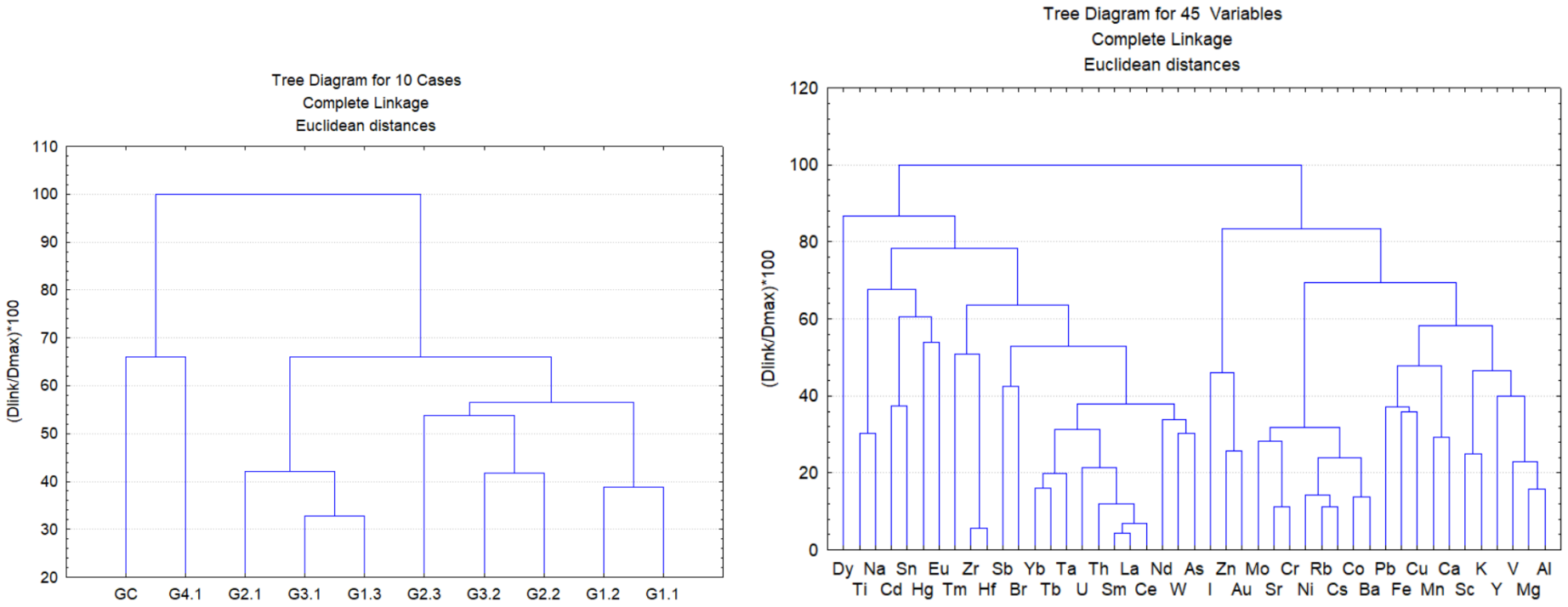


Figure S2. Dendrograms obtained with the Tree Clustering algorithm for the 10 soil samples and 45 variables in three soil layers.

5-20 cm depth

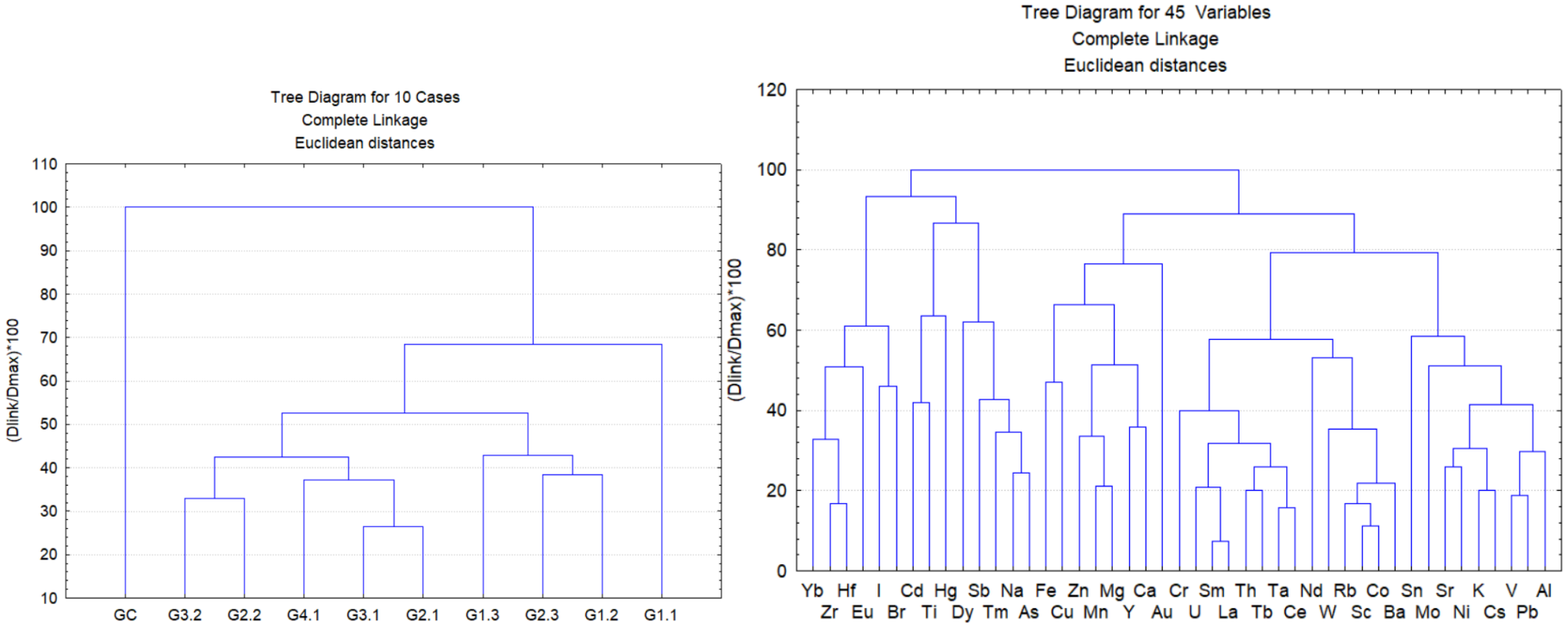


Figure S2. continued

20-30 cm depth

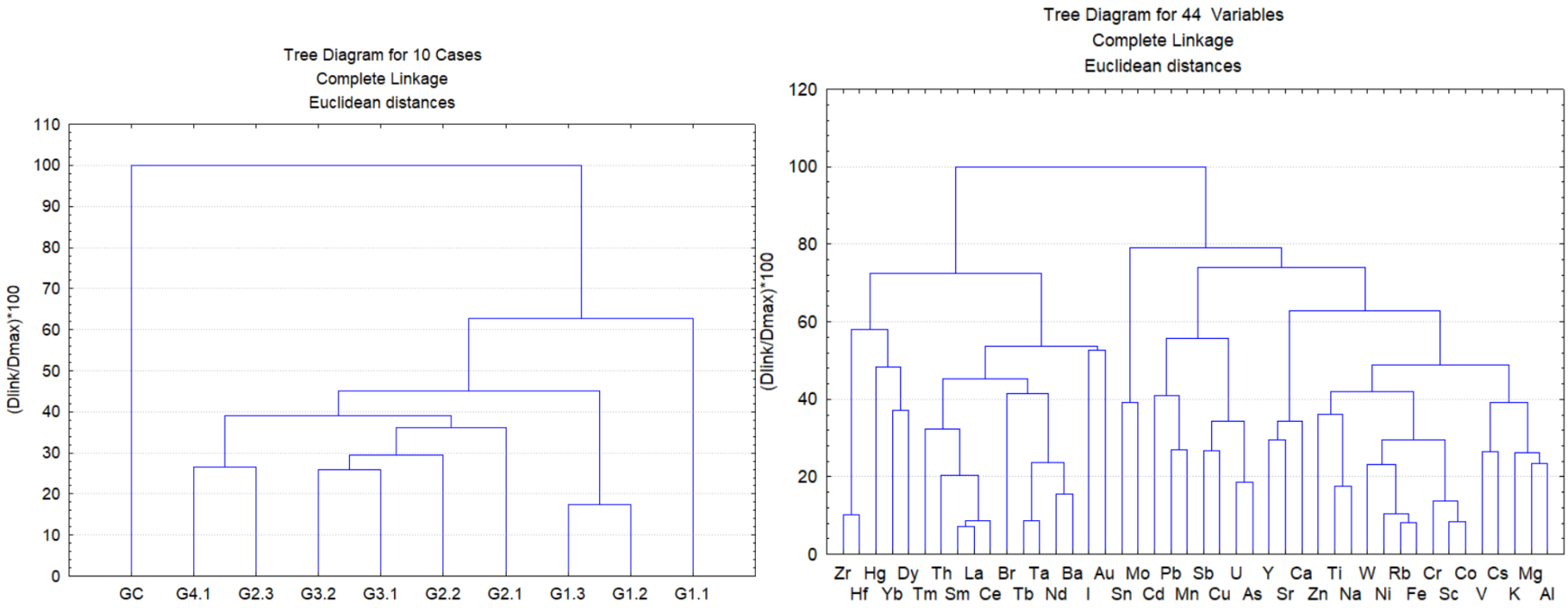


Figure S2. continued