

Supplementary Information

Determination of trace heavy metal elements in litterfall by inductively coupled plasma optical emission spectrometry after extraction using choline chloride-based deep eutectic solvents

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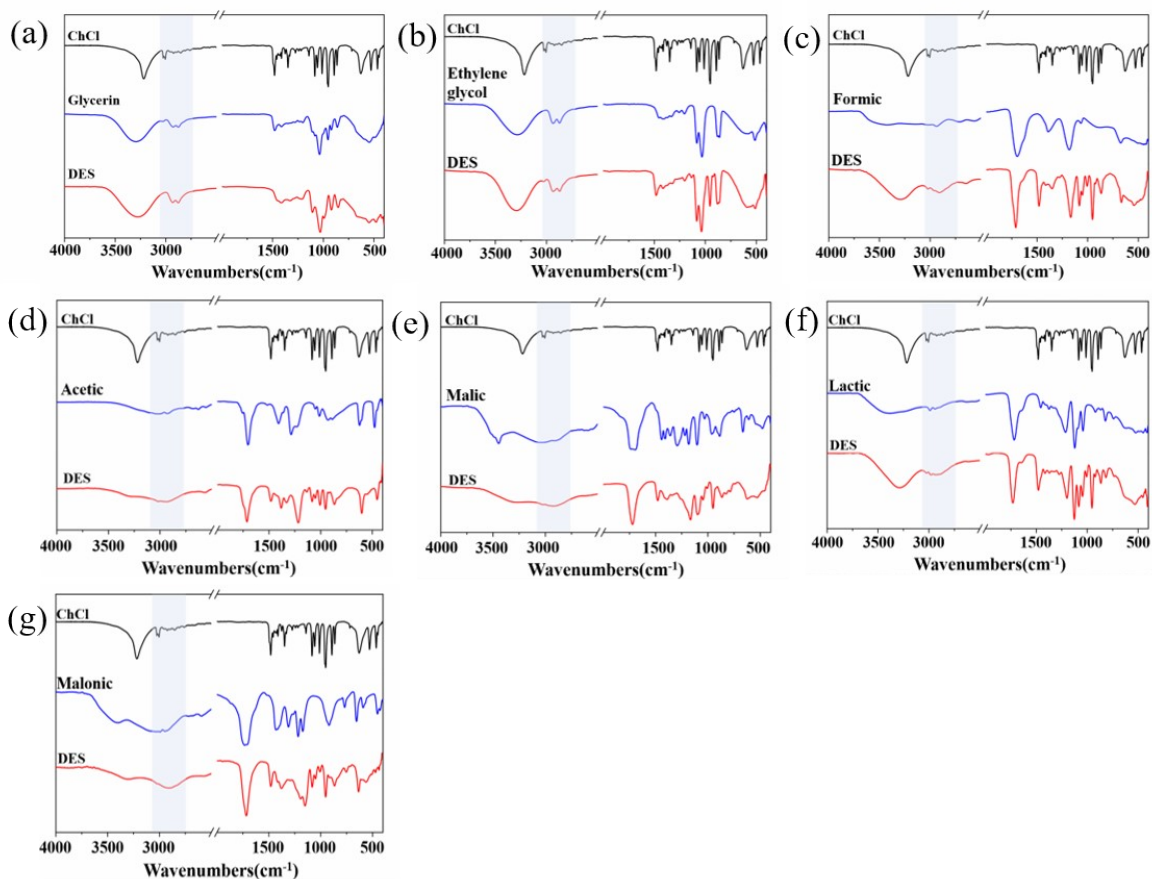


Fig. S1 (a) FT-IR spectra of ChCl , Glycerin acid and DES; (b) FT-IR spectra of ChCl , Ethylene acid and DES; (c) FT-IR spectra of ChCl , Formic acid and DES; (d) FT-IR spectra of ChCl , Acetic acid and DES; (e) FT-IR spectra of ChCl , Malic acid and DES; (f) FT-IR spectra of ChCl , Lactic acid and DES; (g) FT-IR spectra of ChCl , Malonic acid and DES.

Table S1 Comparative study of the new method with reported methods in the literature.

Sample	Element	Extraction solvent	Analytical technique	LOD ($\mu\text{g/g}$)	RSD (%)	Linear Range ($\mu\text{g/g}$)	Ref
Tap, mineral	Cu	aliquat 336 and lauric acid: menthol	FAAS	1.58	5.00	10–500	1
Tap, spring		N,N'-bis(2-salicylaldiminato)-1,8-diamino-3,6-dioxaoctane	FAAS	1.90	3.80	8–400	2
Fish-Muscle		Chloride, oxalic	ICP-OES	0.08	6.30	—	3
Tobacco leaves		choline chloride and malic acid	ICP-OES	0.90	2.50	2-1000	4
Bamboo litter		Choline chloride and maleic acid	ICP-OES	0.18	1.14	1-300	This work
Milk	Cd	sorbitol, menthol and mandelic acid	FAAS	0.38	4.10	1-40	5
Oil		glycolic acid and mandelic acid	FAAS	0.12	4.10	10-500	6
Lettuce		2-mercapto benzo thiazole (MBT), copper	GFAAS	0.02	—	—	7
Bamboo litter		choline chloride and maleic acid	ICP-OES	0.04	2.30	0.2-200	This work
Water	Fe	3-hydroxy-1-(3-hydroxyphenyl)-2-methylpyridin-4(1H)-one (3-OH-PMPO)	UV-160PC	5.00	4.20	10–750	8
Oysters		Suprapur nitric and hydrochloric acid	AFFS	0.46	3.80	—	9
Fish Muscle		Chloride, oxalic acid	ICP-OES	0.56	2.20	—	3
Bamboo litter		choline chloride and maleic acid	ICP-OES	0.70	2.30	1-1000	This work
Tobacco leaves	Zn	choline chloride and malic acid	ICP-OES	0.02	2.00	0.5–200	4
Fish		Choline chloride and Phenol	AFFS	0.04	1.70	—	10
Fish		APDC, HNO ₃ , Acetone	AFFS	0.03	6.00	—	11
Bamboo litter		choline chloride and maleic acid	ICP-OES	0.59	0.50	0.2-500	This work

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