

Appendix tables captions

Table 1 pH and nutrients standard of the Second Soil Fertilizer Classification

Classification standard	pH	Total phosphate (TP, g/kg)	Total nitrogen (TN, g/kg)	Soil organic material (OM, g/kg)
I	< 4.5	> 1.0	> 2.0	> 40
II	4.5–5.5	0.8–1.0	1.5–2.0	30–40
III	5.5–6.5	0.6–0.8	1.0–1.5	20–30
IV	6.5–7.5	0.4–0.6	0.75–1.0	10–20
V	7.5–9.0	0.2–0.4	0.5–0.75	6–10
VI	> 9.0	< 0.2	< 0.5	< 6

Notes: 1) I, II, III, IV, V, and VI means ultra-acidic, acidic, medium-acidic, neutral, medium-alkaline, and alkaline, respectively; 2) I, II, III, IV, V, and VI means ultra-high, high, medium-high, medium-low, low, and very low for TP, TN and OM content, respectively

Table 2 The bivariate correlation analysis (*r*-value) between the measured parameters (*n* = 45)

Parameters	pH	TP	TN	OM	TOC	C/N	T-Mn	T-Cu	T-Cd	T-Pb	T-Zn	A-Mn	A-Cu	A-Cd	A-Pb	A-Zn	R-Mn	R-Cu	R-Cd	R-Pb	R-Zn
pH	1	0.214	0.259	0.281	0.299	-0.015	-0.092	0.035	0.081	0.114	0.239	-0.204	0.056	-0.092	-0.196	0.256	0.025	0.123	0.013	-0.239	0.232
TP		1	0.360	0.360	0.369*	-0.334	0.020	-0.055	-0.069	-0.277	0.188	0.274	0.076	-0.048	0.085	0.390*	0.225	0.083	0.125	0.186	0.389*
TN			1	0.657*	0.652**	-0.517**	-0.327	-0.398*	-0.372*	-0.306	0.098	0.299	-0.009	0.154	0.238	0.511**	0.284	0.105	0.408*	0.328	0.510**
OM				1	0.996**	-0.095	-0.467**	-0.482**	-0.505**	-0.255	-0.100	0.264	0.181	-0.081	0.069	0.585**	0.525**	0.312	0.319	0.106	0.600**
TOC					1	-0.097	-0.431*	-0.471*	-0.512**	-0.256	-0.113	0.271	0.181	-0.096	0.056	0.585**	0.520**	0.312	0.308	0.094	0.600**
C/N						1	0.011	-0.187	-0.092	0.076	-0.127	-0.243	-0.091	-0.275	-0.096	-0.270	-0.123	-0.104	-0.244	-0.143	-0.257
T-Mn							1	0.207	0.149	0.077	0.111	0.065	-0.110	-0.118	-0.017	-0.319	-0.598**	-0.171	-0.256	-0.062	-0.330
T-Cu								1	0.829**	0.376	0.104	-0.289	-0.133	-0.016	-0.065	-0.297	-0.091	-0.292	-0.442*	-0.156	-0.318
T-Cd									1	0.428	0.213	-0.437*	-0.078	0.057	-0.096	-0.222	-0.251	-0.191	-0.465*	-0.170	-0.241
T-Pb										1	0.141	-0.286	0.093	0.250	0.018	0.044	-0.135	0.056	-0.117	-0.253	0.018
T-Zn											1	-0.058	-0.062	-0.372*	-0.228	-0.042	-0.164	-0.005	-0.423*	-0.262	-0.113
A-Mn												1	-0.025	0.047	0.155	-0.075	0.327	-0.026	0.283	0.229	-0.074
A-Cu													1	0.000	-0.195	0.026	0.009	0.955**	-0.014	-0.205	0.026
A-Cd														1	0.667**	0.352	-0.060	-0.025	0.679**	0.594**	0.367*
A-Pb															1	0.366*	-0.050	-0.195	0.470*	0.949**	0.380*
A-Zn																1	0.225	0.180	0.439*	0.332	0.996**
R-Mn																	1	0.037	0.157	0.027	0.239
R-Cu																		1	0.059	-0.197	0.177
R-Cd																			1	0.495**	0.467**
R-Pb																				1	0.356
R-Zn																					1

Notes: 1) *: $P < 0.05$; **: $P < 0.01$. 2) TP, TN, OM, TOC, C/N, T-Mn, T-Cu, T-Cd, T-Pb, T-Zn, A-Mn, A-Cu, A-Cd, A-Pb, A-Zn, R-Mn, R-Cu, R-Cd, R-Pb, R-Zn indicate total phosphate, total nitrogen, soil organic material, total organic carbon, the ratio of TOC/TN, total Mn, total Cu, total Cd, total Pb, total Zn, available Mn, available Cu, available Cd, available Pb, available Zn, the activation ratios of Mn, Cu, Cd, Pb and Zn, respectively. 3) All the zero (0) before the dot was omitted

Table 3 The available Mn, Zn, and Cu standard of the Second Soil Fertilizer Classification

Classification standard	Available Mn (mg/kg)	Available Cu (mg/kg)	Available Zn (g/kg)
I	> 30.0	> 3.0	> 1.8
II	15.0–30.0	1.0–3.0	1.0–1.8
III	5.0–15.0	0.5–1.0	0.2–1.0
IV	1.0–5.0	0.3–0.5	0.1–0.2
V	< 1.0	< 0.3	< 0.1

Notes: I, II, III, IV, and V means ultra-high, high, medium, low, and very low for available Mn, Cu and Zn