

Supporting Information:

Water-soluble chitosan promotes remediation of Pb-contaminated soil by *Hylotelephium spectabile*

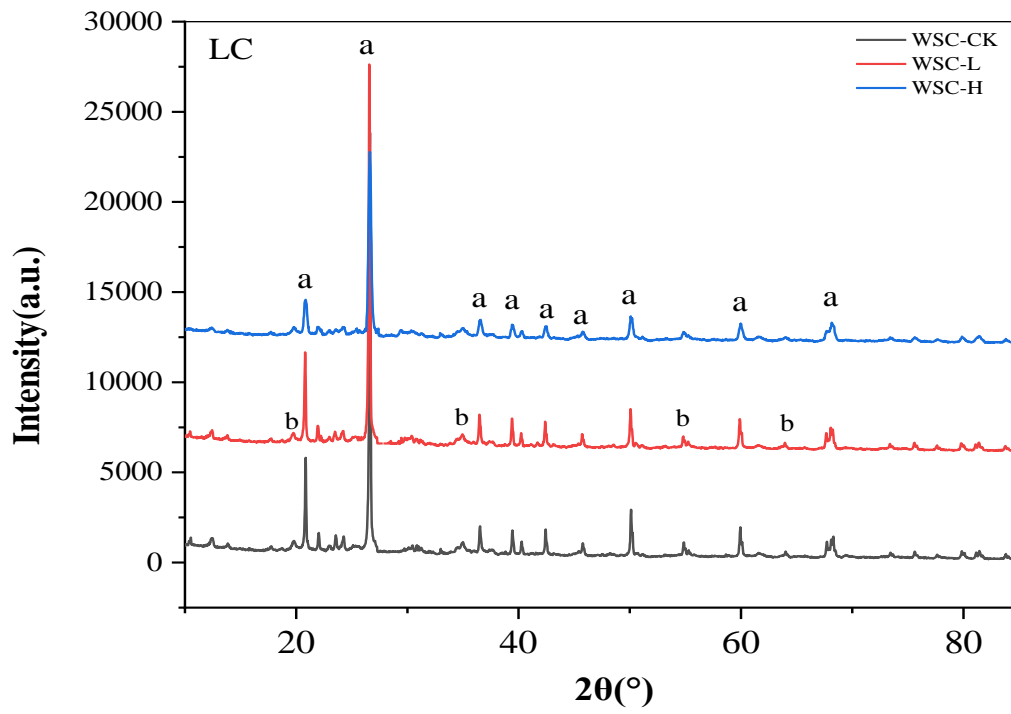


Fig. S1. XRD of LC soil under different treatments. a is the characteristic peak of quartz; b is the characteristic peak of montmorillonite.

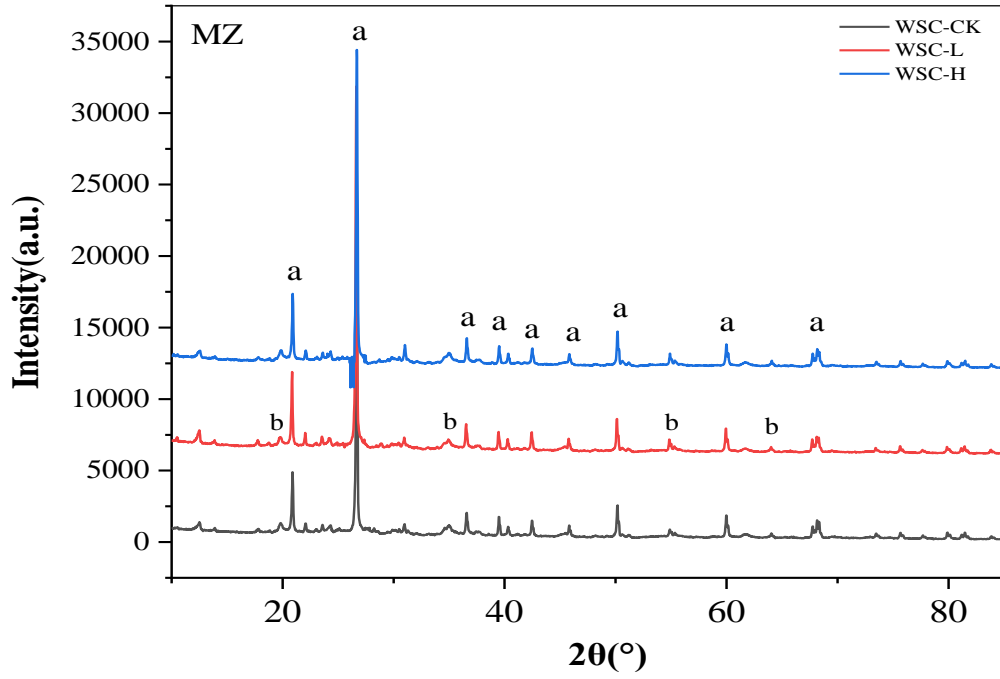


Fig. S2. XRD of MZ soil under different treatments. a is the characteristic peak of quartz; b is the characteristic peak of montmorillonite.

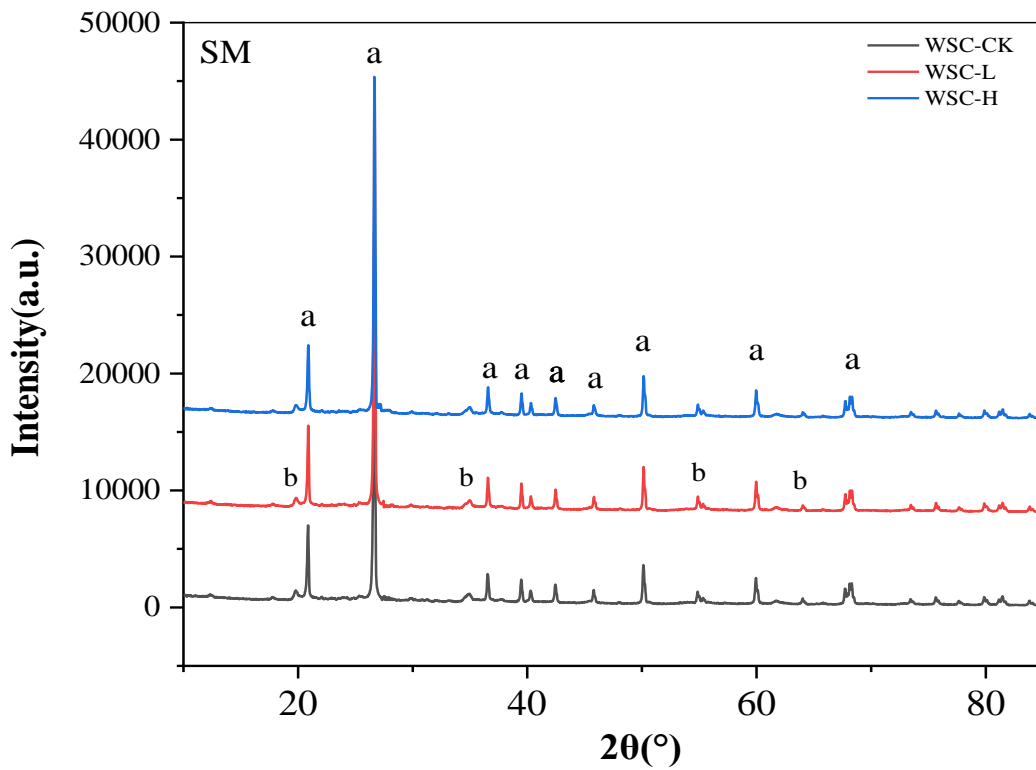


Fig. S3. XRD of SM soil under different treatments. a is the characteristic peak of quartz; b is the characteristic peak of montmorillonite.

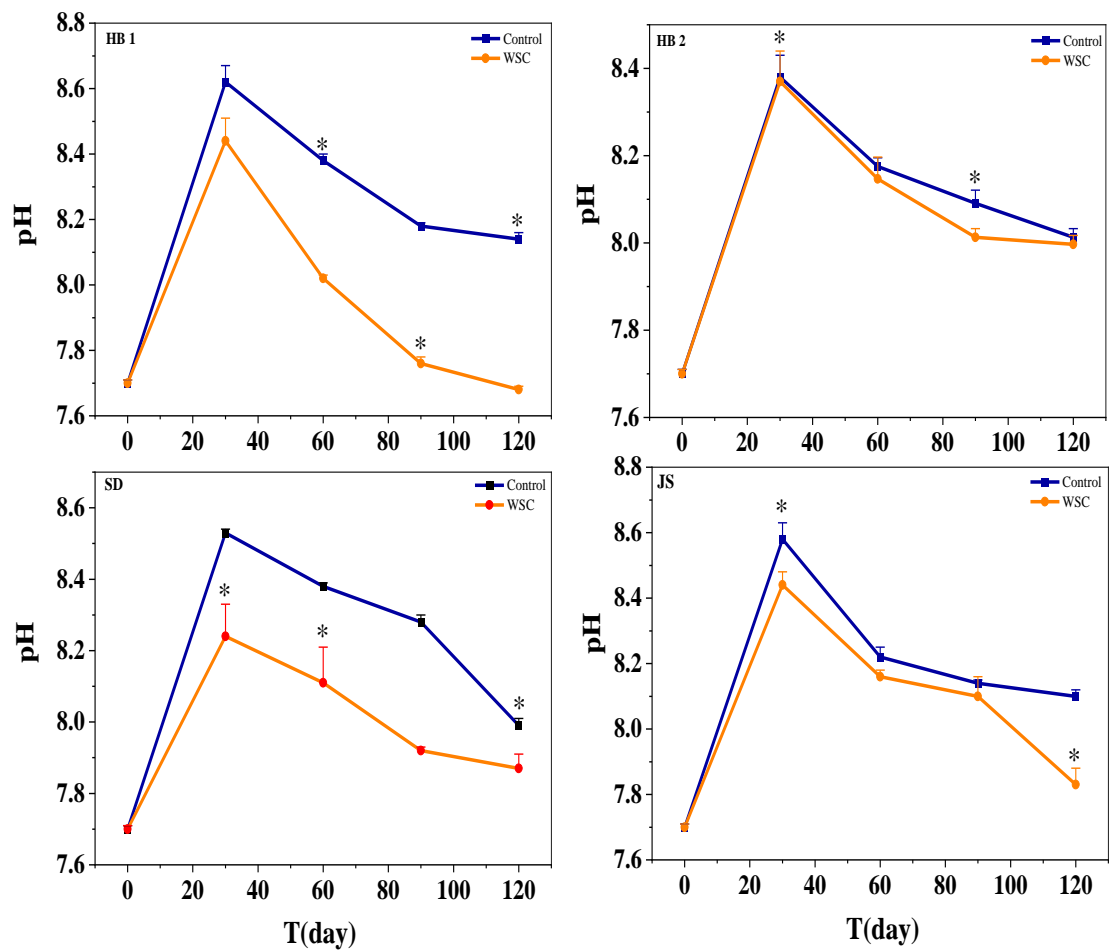


Fig. S4. Soil pH of different Population groups. Data marked by the asterisk represent statistically

significant differences at $p < 0.05$ based on LSD test. Values are mean \pm SE (n = 4).

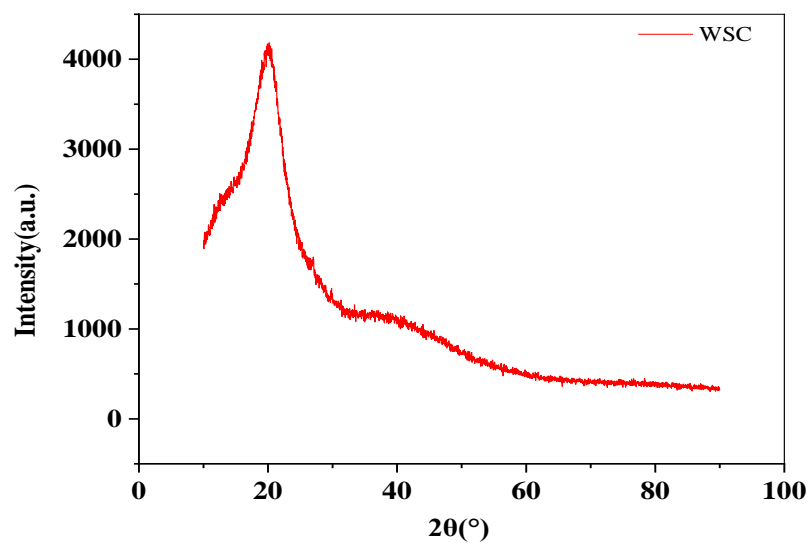


Fig. S5. XRD of WSC

Table S1 Basic Properties of four Pb contaminated soils in pot experiments.

Sources of polluted soil	Soil types	Pb content (mg kg ⁻¹)	pH
Jiyuan, Henan Province (JY)	Cinnamon soil	173.06	7.7
Luancheng, Hebe Province (LC)	Meadow cinnamon soil	32.09	7.5
Shimen, Hunan Province (SM)	Red soil	46.23	6.2
Mianzhu, Sichuan Province (MZ)	Waterlogged paddy soil	12.83	6.1

Table S2 Basic physical and chemical properties of soil in field trials.

Soil Index	Numerical
pH	7.7
Cation exchange capacity (mmol/kg)	20.1
Organic matter (g/kg)	19.4
Total nitrogen (g/kg)	1.18
Total phosphorus (g/kg)	0.86
Total potassium (g/kg)	26.6
Alkali hydrolyzed nitrogen (mg/kg)	83.7
Available phosphorus (mg/kg)	23.0
Available potassium (mg/kg)	140.0
Total lead (mg/kg)	173.06
Total arsenic (mg/kg)	18.38

Table S3 Peaking results of FTIR spectra of LC soil (1020cm⁻¹) and (3440cm⁻¹).

LC	Peak Area	Center Grvty	Proportion of peak	Peak Area	Center Grvty	Proportion of peak
	(1020 cm ⁻¹)	(1020 cm ⁻¹)	area (1020 cm ⁻¹)	(3440 cm ⁻¹)	(3440 cm ⁻¹)	area (3440 cm ⁻¹)
WSC-CK	191.92	1022.85	35.66	95.91	3464.57	24.84
WSC-L	228.70	1021.14	37.51	131.77	3471.90	25.97
WSC-H	320.01	1027.81	42.92	136.09	3467.10	28.14

Table S4 Peaking results of FTIR spectra of MZ soil (1020cm⁻¹) and (3440cm⁻¹).

MZ	Peak Area	Center Grvty	Proportion of peak	Peak Area	Center Grvty	Proportion of peak
	(1020 cm ⁻¹)	(1020 cm ⁻¹)	area (1020 cm ⁻¹)	(3440 cm ⁻¹)	(3440 cm ⁻¹)	area (3440 cm ⁻¹)
WSC-CK	108.99	1018.93	36.90	52.47	3463.30	25.47
WSC-L	180.58	1015.71	38.50	91.68	3469.29	31.08
WSC-H	212.91	1016.95	42.68	101.80	3469.19	33.03

Table S5 Peaking results of FTIR spectra of SM soil (1020cm⁻¹) and (3440cm⁻¹).

SM	Peak Area	Center Grvty	Proportion of peak	Peak Area	Center Grvty	Proportion of peak
	(1020 cm ⁻¹)	(1020 cm ⁻¹)	area (1020 cm ⁻¹)	(3440 cm ⁻¹)	(3440 cm ⁻¹)	area (3440 cm ⁻¹)
WSC-CK	139.89	1028.30	38.11	84.01	3461.34	27.07
WSC-L	163.53	1032.57	42.50	121.34	3466.02	33.16
WSC-H	204.92	1029.64	45.68	182.32	3458.32	36.03