

Text S1: experimental method

1. Chemicals used

We have a list the chemicals used in the study, including the names of the materials, chemical formulas, their origins, and purities.

Name	Chemical formula	Purities	Origins
hydrochloric acid	HCl	Guaranteed Reagent	Sinopharm Chemical Reagent Co.Ltd.
nitric acid	HNO ₃	Guaranteed Reagent	Nanjing Chemical Reagent Co., Ltd.
perchloric acid	HClO ₄	Guaranteed Reagent	Nanjing Chemical Reagent Co., Ltd.
hydrofluoric acid	HF	Guaranteed Reagent	Nanjing Chemical Reagent Co., Ltd.
lead nitrate	Pb(NO ₃) ₂	Analytial Reagent	Sinopharm Chemical Reagent Co.Ltd.
sodium hypochlorite hydrogen	NaClO	Analytial Reagent	Sinopharm Chemical Reagent Co.Ltd.
peroxide dipotassium	H ₂ O ₂	Guaranteed Reagent	Nanjing Chemical Reagent Co., Ltd.
phosphate potassium hydrogen	K ₂ HPO ₄	Analytial Reagent	Sinopharm Chemical Reagent Co.Ltd.
phosphate	KH ₂ PO ₄	Analytial Reagent	Sinopharm Chemical Reagent Co.Ltd.

2. Pb Quantification in soil

Weigh the 0.20 g soil sample (through a 0.2 mm sieve) accurately into the polytetrafluoroethylene crucible, soak it with a little water, add 5 ml HCl, heat it on the electric hot plate of the fume bonnet, and when it has evaporated to 2-3 ml, add 5 ml concentrated HNO₃, 2 ml HF, 2 ml HClO₄ successively, and heat it on the electric hot plate for about 1h after covering. Shake the crucible frequently to get a good silicon flux effect. Open the lid and continue heating until thick white HClO₄ smoke rises, cover the black organic carbide to decompose completely when the black organic matter is on the crucible, open the lid to expel the white smoke and vapour until the liquid is thick. The above decarburization process was repeated according to the decomposition situation. After cooling, the inner wall of the crucible was rinsed with 1% HNO₃, filtered into a 25 ml colorimetric tube, the volume was fixed at 25 ml and finally determined with an atomic spectrophotometer.

3. Pb Quantification in different Tissues

Weigh 5g of the plant sample, add 5ml HNO₃, and let it stand overnight. Then add 2ml H₂O₂, followed by 4ml H₂O₂. After shaking well, heat at 90°C for 1 hour. Then add 5ml HNO₃ and continue heating at 150°C for one hour. After that, switch to heating at 120°C until the sample is completely dissolved. Allow it to cool, and then make up to 25ml with the addition H₂O₂. Shake well for the test. Pb content was quantified by inductively coupled plasma mass spectrometry (ICP-MS, Agilent 7500A, Santa Clara, CA, USA).