

Occurrence of perchlorate in groundwater, paired farmland soil, lettuce, and rhizosphere soil from Chengdu, China

Yulu Tang¹, Bifeng Zhong^{2,3}, Bing Qu¹, Shujin Feng¹, Sanglan Ding¹, Shijun Su¹, Zhi Li*¹, Zhiwei Gan*¹

1. College of Architecture and Environment, Sichuan University, Chengdu 610065, China
2. Genetic Improvement of Horticultural Crops (Southwest Region), Ministry of Agriculture, Chengdu 610066, China
3. Sichuan Provincial Key Laboratory for Water-saving Agriculture in the South of China, Chengdu 610066, China

The first two authors contributed equal to the study.

Supplementary Materials

Table S1

Quality control parameters for the analysis of perchlorate.

QC samples (ng/mL)	N	mean (ng/mL)	RSD (%)	recovery (SD) (%)	matrix effect (SD) (%)
Standard solution (5)	6	4.99	3	99.8 (0.05)	\
Standard solution (50)	6	48.99	3	98.0 (0.9)	\
Procedural blank	6	n.d. ^a	\	\	\
Reagent blank	6	n.d.	\	\	\
Spiked farmland soil samples (20)	2	19.21	\	96.1(0.13)	92.5
Spiked rhizosphere soil samples (10)	1	\	\	105.2	93.2

n.d: not detected.

Table S2

Perchlorate levels in the investigated samples.

Sampling sites	Groundwater Concentration	Farmland soil Concentration	Lettuce Concentration	Rhizosphere soil
----------------	------------------------------	--------------------------------	--------------------------	---------------------

	($\mu\text{g}/\text{kg}$)	($\mu\text{g}/\text{kg}$)	($\mu\text{g}/\text{kg}$)	Concentration ($\mu\text{g}/\text{kg}$)
S1	4.63	107	23.8	15.3
S2	2.05	LOQ	7.67	6.61
S3	1.87	52.1	109	5.17
S4	0.113	9.74	5.22	2.07
S5	13.9	4.43	9.27	3.35
S6	1.63	6.36	7.98	7.91
S7	0.415	32.4	5.50	13.3
S8	0.632	4.94	4.32	17.9
S9	18.6	7.94	6.10	17.7
S10	11.3	9.12	5.56	4.17
S11	47.8	15.1	15.2	12.3
S12	25.1	96.0	36.9	27.8
S13	9.51	15.0	7.86	55.1
S14	5.21	180	13.0	95.1
S15	2.60	20.1	11.4	52.2
S16	10.9	142	53.3	440
S17	60.2	135	23.3	11.4
S18	32.0	45.7	43.7	109
S19	22.9	26.4	LOQ	18.1
S20	4.85	18.5	15.7	22.7
S21	16.7	113	29.8	50.0
S22	0.688	249	314	1010
S23	LOQ	7.18	LOQ	12.0
S24	0.954	23.3	8.16	56.7
S25	1.50	24.9	9.10	11.4
S26	LOQ	12.8	19.2	36.1
S27	LOQ	115	54.4	92.1
S28	LOQ	17.0	6.31	10.5

n.d.: not detected; LOQ: below the limit of quantification.