

Supplementary data for the article:

Marković, J.; Jović, M. D.; Smičiklas, I. D.; Šljivić-Ivanović, M. Z.; Onjia, A. E.; Trivunac, K.; Popović, A. R. Cadmium Retention and Distribution in Contaminated Soil: Effects and Interactions of Soil Properties, Contamination Level, Aging Time and in Situ Immobilization Agents. *Ecotoxicology and Environmental Safety* **2019**, *174*, 305–314. <https://doi.org/10.1016/j.ecoenv.2019.03.001>

Supplementary material

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SM 1. Physicochemical properties and pseudo-total concentrations of Al, Ba, Cd, Cr, Cu, Fe, K, Li, Mn, Ni, Pb and Zn in the investigated soil samples (Marković et al., 2016, Journal of Geochemical Exploration 165, 71–80; Smičiklas et al., 2015, Geoderma 253–254, 21–29).

Sample	S1	S2	S3	S4	S5	S6	S7	S8
Essential soil property								
Sand ^a	25.4	26.1	30.3	28.5	34.7	38.7	48.8	24.8
Silt ^b	31.2	43.8	31.3	32.7	31.4	38.6	12.2	25.1
Clay ^c	43.4	30.1	38.4	38.8	33.9	22.7	39.0	50.1
Texture	Clay	Clay loam	Clay loam	Clay loam	Clay loam	Loam	Sandy loam	Clay
pH _{KCl}	6.8	6.9	4.7	6.1	3.6	5.3	3.4	6.9
CaCO ₃ ^d	0.41	11.1	/	/	/	/	/	11.7
CEC ^e	36.9	22.5	34.4	23.8	23.4	35.0	32.5	47.8
TOC ^d	3.24	1.18	1.50	2.14	1.69	4.75	0.82	2.93
P ₂ O ₅ ^f	30.0	15.8	0.14	5.52	13.2	0.01	2.11	10.8
K ₂ O ^f	43.0	21.1	17.0	38.4	31.6	8.80	35.2	30.4
Soil type	Humic Fluvisol	Fluvisol	Eutric Cambisol	Mollic Leptosol	Stagnosol	Leptosol	Dystric Cambisol	Rendzic Leptosols
Pseudo-total concentrations^g								
Al	1413	1419	1853	1879	2214	1669	1851	1532
Ba	78.5	83.2	326	100	86.8	56.8	65.6	114
Cd	0.189	0.164	0.192	0.201	0.149	0.158	0.0750	0.133
Cr	43.5	40.9	62.5	24.4	45.0	501	20.7	24.6
Cu	54.8	45.9	47.4	31.3	31.7	141	40.1	33.4
Fe	11811	14461	23572	14101	11448	24354	12336	11977
K	4417	1811	5059	3480	1472	609	1760	4396
Li	13.7	15.1	22.1	12.9	12.8	15.6	10.6	18.4
Mn	216	704	1837	1247	2408	1380	217	675
Ni	69.0	73.7	62.1	22.6	61.4	529	18.4	28.1
Pb	22.6	34.6	44.4	21.7	35.6	27.5	10.0	19.7
Zn	56.6	53.2	54.7	35.6	31.5	34.9	28.3	36.9

^a>0.02mm, %; ^b0.02-0.002mm, %; ^c<0.002mm, %; ^d %; ^e cmol/kg; ^f mg/100g; ^g μg/g dry weight.

11 **SM 2.** Chemical analysis of annealed bovine bones (B₄₀₀).

Element	Al	As	B	Ba	Ca	Cd	Co	Cr	Cu
Unit	µg/g	µg/g	µg/g	µg/g	mg/g	µg/g	µg/g	µg/g	µg/g
Value	1.61	<0.010	4.77	77.4	325	0.006	0.024	5.06	1.43
Element	Fe	K	Li	Mg	Mn	Mo	Na	Ni	P
Unit	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	mg/g
Value	58.6	344	1.69	5836	2.39	0.199	851	0.473	217
Element	Pb	S	Sb	Se	Sr	V	Zn		
Unit	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g		
Value	4.95	163	0.280	0.368	215	0.218	69.0		

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31 **SM3.** Statistically significant correlations between Cd sorption parameters and soil properties.

Sorption parameter	Soil property	r	p
q _m	pH	0.755	0.030
	CEC	0.806	0.016
K _L	pH	0.755	0.000
K _F	pH	0.759	0.029
	CEC	0.776	0.024
n	pH	0.723	0.043
	CEC	0.811	0.015

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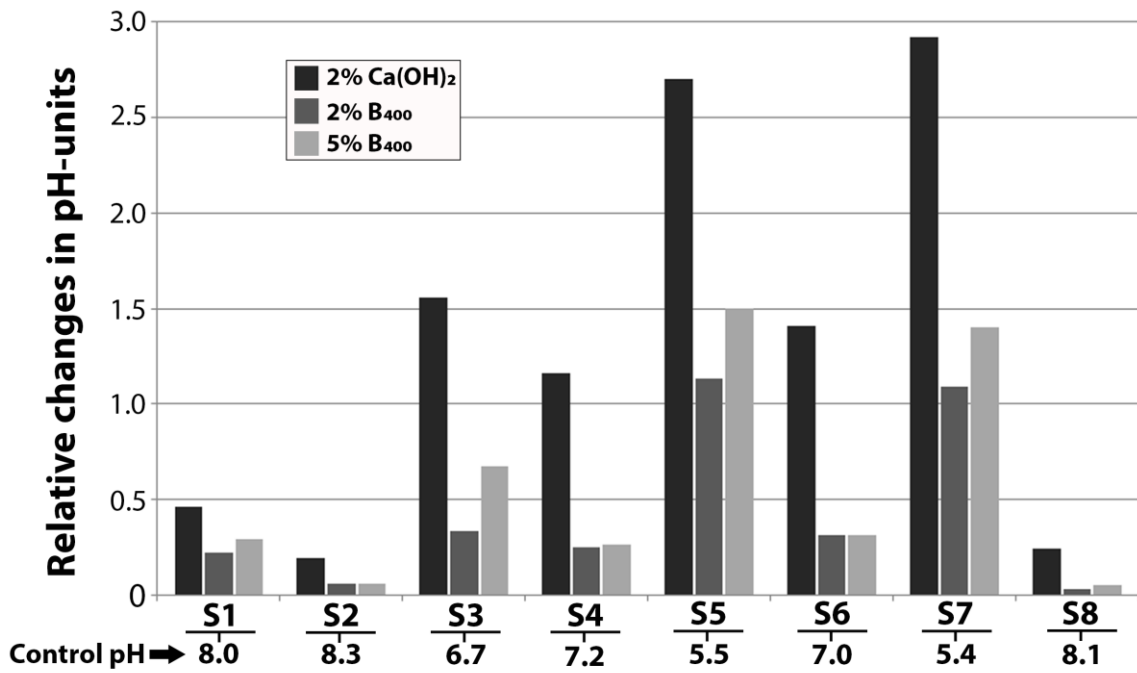
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52 **SM 4.** The changes in soil pH (measured in deionized H₂O, soil-to-solution ratio 1:2) after 2 months
 53 incubation with additives (2% Ca(OH)₂, 2% and 5% B₄₀₀) relative to the pH of non-amended soils
 54 contaminated with 5×10⁻⁶ mol/L Cd solution (control).

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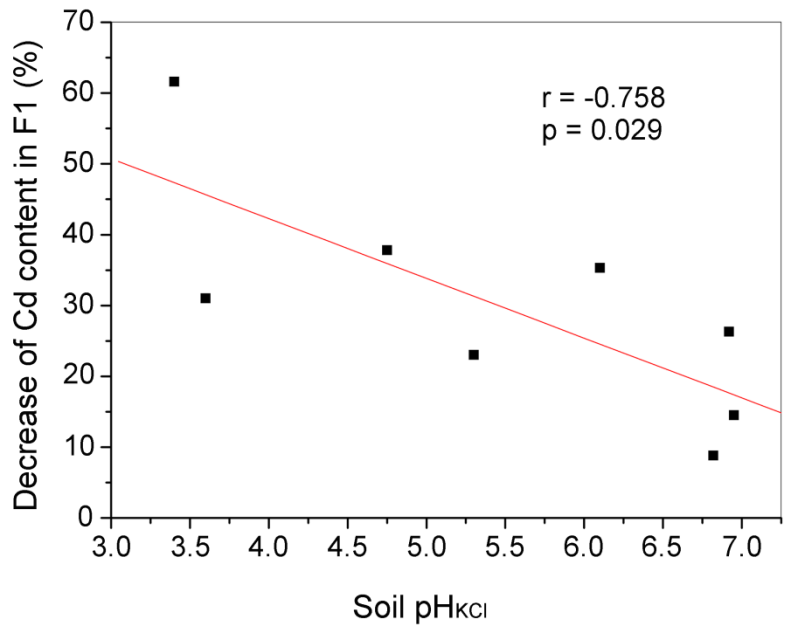
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68 **SM 5.** The decrease in exchangeable Cd content in contaminated soil samples amended with 2%

69 $\text{Ca}(\text{OH})_2$ in relation to the pH of the unamended soil.