

SUPPLEMENTARY MATERIAL TO
**Impact of drying, freezing and re-wetting events soil leachate in
acidic *versus* calcareous soils**

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Table S-Ia: Mean-M, standard deviation-SD, minimum-Min and maximum-Max values (N=4)
of averaged leachate pH, EC and ion concentrations for the control and treatment samples
(drying-re-wetting and freezing-re-wetting) of calcareous soil

Feature	Depth (cm)	M	SD	Min.	Max.	M	SD	Min.	Max.	M	SD	Min.	Max.	Sig. (≤0.05)
		Calcareous soil				Calcareous soil				Calcareous soil				
		control - gradual drying x re-wetting				drying x re-wetting				freezing x re-wetting				
pH	0-10	7.01	0.25	6.79	7.23	7.10	0.11	6.94	7.19	6.93	0.28	6.60	7.26	0.59
	10-20	7.38	0.16	7.24	7.53	7.77	0.14	7.59	7.88	7.47	0.01	7.41	7.60	0.06
EC (μS cm ⁻¹)	0-10	401	23.1	381	421	157	66.6	119	257	244	171	90.7	462	0.03
	10-20	813	258	606	1148	232	94.0	167	370	235	167.0	103	476	0.02
Al (mg L ⁻¹)	0-10	0.27	0.04	0.23	0.30	0.23	0.07	0.17	0.30	0.34	0.09	0.23	0.41	0.17
	10-20	0.11	0.01	0.10	0.12	0.11	0.00	0.11	0.12	0.13	0.02	0.11	0.15	0.13
Ca (mg L ⁻¹)	0-10	75.5	0.58	75.0	76.0	40.5	26.3	20.0	75.0	73.0	8.72	66.0	84.0	0.02
	10-20	157	33.6	124	204	86.3	79.8	37.0	204	84.2	49.3	47.0	151	0.05
Mg (mg L ⁻¹)	0-10	6.40	1.04	5.50	7.30	2.95	1.90	1.50	5.50	6.75	0.49	6.10	7.30	0.00
	10-20	7.35	1.21	6.20	8.90	3.70	3.51	1.60	8.90	3.80	2.09	2.20	6.60	0.11
Na (mg L ⁻¹)	0-10	12.8	11.8	2.60	23.0	1.75	0.61	1.30	2.60	2.00	-	2.00	2.00	0.22
	10-20	3.40	0.42	3.10	3.70	2.07	1.13	1.30	3.70	3.80	2.09	2.20	6.60	0.24
K (mg L ⁻¹)	0-10	1.55	0.17	1.40	1.70	2.65	0.84	1.40	3.20	1.11	0.40	0.89	1.70	0.01

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	10-20	1.60	1.82	1.40	1.80	1.65	0.17	1.50	1.90	0.93	0.38	0.62	1.40	0.07
Mn (mg L-1)	0-10	0.24	0.01	0.23	0.25	0.10	0.10	0.03	0.25	0.20	0.05	0.15	0.25	0.04
	10-20	0.75	0.01	0.07	0.09	0.03	0.04	0.01	0.09	0.03	0.03	0.10	0.70	0.10
Fe (mg L-1)	0-10	0.18	0.01	0.17	0.18	0.15	0.03	0.12	0.18	0.22	0.03	0.17	0.23	0.01
	10-20	0.11	0.00	0.11	0.12	0.11	0.01	0.09	0.12	0.11	0.01	0.10	0.12	0.75
F (mg L-1)	0-10	0.01	0.01	0.00	0.01	0.16	0.12	0.06	0.30	0.12	0.09	0.05	0.25	0.05
	10-20	0.00	0.00	0.00	0.01	0.09	0.02	0.07	0.10	0.09	0.03	0.06	0.14	0.01
Cl (mg L-1)	0-10	0.95	0.06	0.89	1.00	2.66	0.95	1.78	3.86	1.92	0.68	1.16	2.78	0.02
	10-20	0.58	0.49	0.08	1.01	3.15	0.98	2.12	4.11	2.89	0.91	2.10	3.88	0.03
NO ₂ (mg L-1)	0-10	0.01	0.00	0.01	0.01	0.24	0.09	0.15	0.36	0.21	0.09	0.13	0.31	0.00
	10-20	0.00	0.00	0.00	0.00	0.26	0.09	0.18	0.38	0.25	0.09	0.17	0.37	0.00
SO ₄ (mg L-1)	0-10	0.98	0.11	0.89	1.07	14.7	3.86	10.2	19.5	11.0	3.42	6.17	13.9	0.00
	10-20	0.37	0.30	0.05	0.63	16.0	4.06	12.1	19.8	15.9	4.09	11.8	19.7	0.00
NO ₃ (mg L-1)	0-10	6.47	2.18	4.59	8.36	4.79	3.29	1.24	9.13	2.48	1.20	1.33	3.66	0.05
	10-20	1.12	1.23	0.02	2.18	6.47	4.47	2.10	12.7	6.45	4.64	1.69	12.8	0.12
PO ₄ (mg L-1)	0-10	0.02	0.01	0.01	0.03	0.06	0.03	0.03	0.09	0.06	0.03	0.03	0.09	0.05
	10-20	0.03	0.02	0.01	0.06	0.06	0.03	0.03	0.09	0.06	0.03	0.03	0.09	0.37

Table S-Ib: Mean-M, standard deviation-SD, minimum-Min and maximum-Max values (N=4) of averaged leachate pH, EC and ion concentrations for the control and treatment samples (drying-re-wetting and freezing-re-wetting) of sandstone soils.

Feature	Depth (cm)	M	SD	Min.	Max.	M	SD	Min.	Max.	M	SD	Min.	Max.	Sig. (≤0.05)
		Sandstone soil				Sandstone soil				Sandstone soil				
		control - gradual drying x re-wetting				drying x re-wetting				freezing x re-wetting				
pH	0-10	4.24	0.21	4.10	4.54	4.37	0.08	4.26	4.43	4.13	0.07	4.06	4.22	0.04
	10-20	4.37	0.16	4.17	4.54	4.79	0.49	4.35	5.21	4.16	0.15	4.07	4.38	0.06
EC (μS cm-1)	0-10	104	35.9	69.1	135	125	49.5	88.6	194	111	15.3	98.2	128	0.72
	10-20	91.0	19.4	69.1	115	74.6	42.2	39.1	122	97.7	17.5	87.9	124	0.53
Al (mg L-1)	0-10	2.25	1.06	1.17	3.68	3.74	1.09	2.84	5.04	2.51	0.24	2.16	2.66	0.05
	10-20	1.63	0.52	1.17	2.21	1.14	0.23	0.95	1.42	1.62	0.44	1.10	1.99	0.22
Ca (mg L-1)	0-10	5.24	3.18	2.63	9.82	7.98	3.66	5.13	12.8	5.29	0.59	4.56	6.00	0.30
	10-20	5.46	1.85	3.54	7.94	5.14	2.48	3.16	8.30	3.61	1.78	2.07	5.26	0.43
Mg (mg L-1)	0-10	1.43	1.02	0.55	2.89	2.44	1.14	1.54	3.91	1.89	0.20	1.70	2.17	0.21
	10-20	1.52	0.55	1.02	2.29	1.46	0.75	0.87	2.43	1.21	0.40	0.87	1.57	0.74
Na (mg L-1)	0-10	1.33	0.45	0.83	1.86	1.80	0.91	1.23	3.14	2.18	0.71	1.16	2.82	0.29

	10-20	1.53	0.55	0.78	2.08	1.89	0.35	1.43	2.27	2.24	0.50	1.86	2.91	0.16
K (mg L ⁻¹)	0-10	0.89	0.76	0.01	1.55	1.29	1.82	0.01	3.86	0.38	0.75	0.01	1.51	0.59
	10-20	0.27	0.52	0.01	1.04	0.31	0.61	0.01	1.23	0.01	0.00	0.01	0.01	0.62
Mn (mg L ⁻¹)	0-10	2.39	1.91	0.74	5.14	4.88	1.89	3.33	7.17	2.78	0.42	2.43	3.39	0.05
	10-20	2.32	0.63	1.92	3.24	2.09	1.10	1.22	3.51	1.29	0.70	0.68	1.96	0.05
Fe (mg L ⁻¹)	0-10	0.53	0.64	0.01	1.46	1.16	0.44	0.79	1.64	1.25	0.19	0.98	1.37	0.05
	10-20	0.47	0.35	0.11	0.84	0.17	0.13	0.08	0.35	0.95	0.44	0.42	1.31	0.03
F (mg L ⁻¹)	0-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00
	10-20	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.94
Cl (mg L ⁻¹)	0-10	0.94	0.38	0.40	1.22	0.79	0.23	0.63	1.12	0.75	0.28	0.46	0.99	0.65
	10-20	0.77	0.46	0.23	1.22	0.68	0.11	0.55	0.83	0.35	0.32	0.08	0.68	0.21
NO ₂ (mg L ⁻¹)	0-10	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03
	10-20	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
SO ₄ (mg L ⁻¹)	0-10	1.70	1.09	0.51	3.14	1.04	0.26	0.88	1.43	0.85	0.16	0.72	1.08	0.05
	10-20	1.61	1.48	0.18	3.14	0.76	0.27	0.53	1.02	0.68	0.77	0.05	1.61	0.37
NO ₃ (mg L ⁻¹)	0-10	0.58	0.45	0.11	1.18	0.37	0.32	0.13	0.85	0.20	0.02	0.18	0.22	0.28
	10-20	0.61	0.61	0.08	1.18	0.13	0.03	0.09	0.16	0.24	0.37	0.02	0.79	0.28
PO ₄ (mg L ⁻¹)	0-10	0.14	0.11	0.04	0.29	0.05	0.02	0.03	0.08	0.03	0.01	0.02	0.04	0.03
	10-20	0.10	0.13	0.01	0.29	0.08	0.03	0.06	0.12	0.03	0.03	0.01	0.07	0.43