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Soil Research

Supplementary Material

Investigating phosphate-adsorption behaviour on a real ferrallitic-ferritic soil using a pluralistic approach under non-controlled conditions

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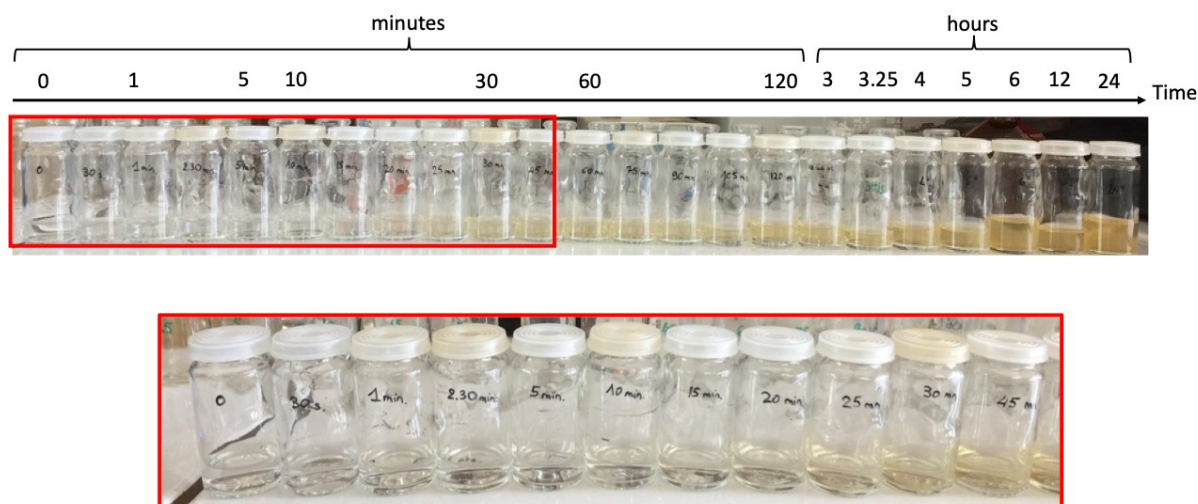
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SUPPLEMENTARY MATERIAL

Appendix 1. Supernatants extracted throughout the kinetics experiment



The picture shows aliquots of adsorption supernatants extracted and filtered at different times over the duration of the adsorption kinetics. The initial P concentration was 30 mgP/L and the kinetics duration was of 24 hours. Different shades of orange colouration could be observed with time. The red frame picture focused on samples extracted from 0 to 45 minutes.

Appendix 2. Summary of the characteristic bands and relative areas for the phosphate binding complexes identified by ATR-FTIR, for C_0 from 10 to 2000 mgP/L

C_0 (mgP/L)	Monodentate complex		Bidentate complex		Iron phosphate precipitates		Ternary complex	
	Bands (cm ⁻¹)	Relative areas (%)	Bands (cm ⁻¹)	Relative areas (%)	Bands (cm ⁻¹)	Relative areas (%)	Bands (cm ⁻¹)	Relative areas (%)
10	949, 1084	3	923, 966, 1008, 1111	90	1054, 1159	7		

Investigating Phosphate Adsorption Mechanisms

20	951, 1049	23.54	1000	53.44	1074, 1162	23.03		
30	955, 1044, 1089	34.45	936, 1003	43.38	1056, 1162	21.66		
40	958, 1020, 1044, 1099	78.34	998	21.66	1173	0.01		
50	958, 1041, 1097	54.40	924, 973, 1005	30.40	1053, 1159	15.20		
75	965, 1047, 1099	37.70	980, 1004, 1118	18.53	1171	0.35	1033	43.42
100	913, 955, 1040, 1097	36.92	932, 976, 1005	26.37	1157	0.12	1035	36.59
150	955, 1042, 1100	65.28	934, 972, 1000, 1121	34.00	1051	3.96		
200	949, 1093	11.66	936, 969, 1002	32.21	1078	23.26	1034	32.87
250	957, 1041, 1097	38.80	933, 967, 1005, 1123	29.95	1054	5.26	1033	25.99
500	951, 1047, 1105	67.84	931, 967, 1002, 1138	32.16				
750	956, 1102	22.40	934, 1002, 1122	12.13	1178	0.07	1033	65.40

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1000	918, 964, 1044, 1101	59.59	931, 968, 1002	27.13			1038	13.27
1250	959, 1040, 1093	58.20	931, 966, 1004	30.69			1034	11.11
1500	953, 1040, 1105	43.39	931, 973, 1000	16.45			1032	40.16
1750	962, 1043, 1105	59.42	931, 972, 1002	24.26			1033	16.32
2000	964, 1024, 1041, 1107	69.96	931, 972, 995	9.66			1035	20.38