

Supplementary Materials

Mobility risk and desorption irreversibility of glyphosate and aminomethylphosphonic acid in highly weathered tropical soils of Sri Lanka

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Table 4 A summary of the results obtained from the adsorption and desorption kinetics of glyphosate and AMPA

Soil	Adsorption Equilibrium of Glyphosate			PSO Kinetics Glyphosate		Desorption Equilibrium Glyphosate			PSO NL Glyphosate	
	Kd	T	A%	K2	R2	Kd	T	D%	K2n	R2
S1A	439	C	98.8	0.004	1.000	980	D	0.51	6	0.985
S1B	939	A	99.8	0.004	1.000	1246	B	0.42	11	0.989
S1C	484	C-D	99.6	0.002	1.000	357	D-E	1.71	57	1.000
S2A	1788	B-C	99.1	0.002	1.000	834	D	0.63	9	1.000
S2B	1676	B	99.7	0.005	1.000	1372	D	0.46	42	1.000
S2C	1155	B-C	99.6	0.005	1.000	2263	C-D	0.22	28	0.998
S3A	3694	A	99.9	0.018	1.000	17345	A	0.03	8	0.999
S3B	1607	A	99.7	0.020	1.000	429	A-B	1.16	12	1.000
S3C	1985	A	99.8	0.032	1.000	428	A-B	1.22	11	1.000
S4A	20	D	75.6	0.0002	0.993	130	F	3.72	1428	0.933
S4B	15	D	88.6	0.0001	1.000	275	E	2.40	1052	1.000
S4C	19	D	79.1	0.0001	0.999	75	F	6.25	27	0.985
S5A	782	C-D	99.4	0.089	1.000	1641	C	0.33	45	1.000
S5B	805	C-D	99.3	0.094	1.000	2027	C	0.37	47	1.000
S5C	780	C-D	99.3	0.079	1.000	1738	C	0.31	52	1.001
Soil	Adsorption AMPA			PSO ADS		Desorption AMPA			PSO DES AMPA	
	Kd	T	A%	K ₂	R ²	Kd	T	D%	K _{2n}	R ²
S1A	424	D-E	98.8	0.006	1.000	326	D	1.60	4	0.988
S1B	1752	A-B	99.7	0.019	1.000	1418	B-C	0.40	39	0.992
S1C	241	E	98	0.003	1.000	261	D	2.10	12	0.995
S2A	624	C-D	99.2	0.010	1.000	240	D	2.10	20	0.971
S2B	896	B-C	99.4	0.007	1.000	592	C	0.90	16	0.995
S2C	551	C-D	99.1	0.006	1.000	285	D	1.90	19	0.985
S3A	2125	A	99.8	0.116	1.000	3936	A	0.10	11	0.993
S3B	1520	A-B	99.7	0.052	1.000	2746	A	0.20	12	0.991
S3C	1670	A-B	99.7	0.034	1.000	4278	A-B	0.10	13	0.993
S4A	32	F	86.4	0.0001	0.999	55	E	8.70	157	0.912
S4B	84	F	94.3	0.003	0.999	787	C	0.70	1300	0.988
S4C	54	F	82.3	0.0001	0.998	114	E	4.30	2540	0.932
S5A	234	E	97.9	0.005	1.000	317	D	1.60	35	0.990
S5B	230	E	96.5	0.005	0.986	312	D	1.60	40	0.988
S5C	242	E	97.8	0.005	1.000	328	D	1.70	41	0.987

Kd, Distribution coefficient ($\text{cm}^3 \text{g}^{-1}$), T- Tukey's group, A% -Adsorption percentage, K₂-pseudo second order rate constant, D%- Desorption percentage, K_{2n} – Non-linear pseudo-second-order rate constant, R² – Coefficients of determination. All values reported are the mean values of nine replicates, and the relative standard deviation is within 20%