

Supplementary Materials

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

Dissanayake D A T W K*, Ranasinghe P, Mubarak M N A, Malavipathirana S. Navaratne A N

Journal of Environmental Monitoring and Assessments

Corresponding Author – D A T W K Dissanayake, thanuja@iti.lk, datwkdissanayake@gmail.com

Industrial Technology Institute, (Residue Analysis Laboratory), Colombo, (Western Province), Sri Lanka and
University of Peradeniya, (Postgraduate Institute of Science), Peradeniya(Central Province), Sri Lanka;

Table 5. A summary of the Freundlich Isotherm parameters obtained from the adsorption and desorption of glyphosate and AMPA

Soil	Freundlich Adsorption GLY					Freundlich Isotherm Desorption GLY					
	1/n	n	Kf	T	R ²	1/n	n	Kf	T	R ²	H
S1A	0.70	1.42	271	D	0.874	1.583	0.632	344	E	0.951	0.90
S1B	1.01	0.99	3146	A	0.885	1.281	0.783	2331	A	0.97	0.76
S1C	0.58	1.72	273	D	0.953	1.257	0.827	550	D	0.977	1.42
S2A	0.64	1.57	526	C	0.994	1.318	0.801	586	D	0.978	1.95
S2B	0.71	1.42	619	C	0.962	0.734	1.372	1835	A-B	0.965	1.98
S2C	0.55	1.82	462	C	0.967	1.005	0.995	1581	B	0.948	1.80
S3A	0.82	1.22	1059	B	0.991	0.604	1.677	2695	A	0.941	0.74
S3B	0.99	1.01	718	B	0.963	1.039	0.962	474	D	0.995	1.05
S3C	0.94	1.07	618	C	0.929	1.036	0.966	473	D	0.997	1.11
S4A	0.776	1.29	42	D	0.987	0.918	1.089	168	F	0.998	1.54
S4B	0.973	1.03	19	D	0.992	0.704	1.421	141	F	0.971	0.72
S4C	0.584	1.71	82	D	0.946	0.782	1.279	71	F	0.988	1.34
S5A	0.91	1.09	979	B	0.992	1.29	0.776	1286	C	0.992	1.39
S5B	0.92	1.05	963	B	0.994	1.425	0.702	1429	C	0.994	1.53
S5C	0.92	1.09	1020	B	0.993	1.295	0.773	1271	C	0.993	1.42
Soil	Freundlich ADS AMPA					Freundlich DES AMPA					
	1/n	n	Kf	T	R ²	1/n	n	Kf	T	R ²	H
S1A	0.74	1.015	269	D	0.985	0.804	1.244	340	C	0.942	1.09
S1B	0.976	1.024	1094	A	0.976	0.864	1.157	1150	A	0.952	1.00
S1C	0.966	1.036	207	D	0.966	0.863	1.159	235	D	0.987	1.05
S2A	0.98	1.02	360	B	0.98	1.02	0.98	645	B	0.974	1.04
S2B	0.974	1.027	519	C	0.974	1.265	0.791	300	D	0.953	1.30
S2C	0.571	1.752	357	B	0.978	0.659	1.518	1346	A	0.972	1.61
S3A	0.537	1.862	538	C	0.988	0.589	1.697	781	B	0.981	1.15
S3B	0.614	1.628	391	B	0.989	0.607	1.648	1188	A	0.999	1.10
S3C	0.933	1.071	557	E	0.981	0.581	1.721	461	C	0.993	0.99
S4A	0.957	1.045	84	F	0.985	0.922	1.085	30	E	0.982	0.96
S4B	0.934	1.071	11	F	0.995	0.874	1.144	32	E	0.976	0.62
S4C	0.98	1.02	12	F	0.98	1.02	0.98	645	B	0.974	0.94
S5A	0.966	1.036	207	D	0.966	0.863	1.159	235	D	0.987	0.89
S5B	0.988	1.012	212	D	0.986	0.873	1.146	264	D	0.986	0.88
S5C	0.975	1.026	225	D	0.979	0.858	1.165	298	D	0.985	0.88

1/n- Freundlich exponent, Kf-Freundlich coefficient, T- Tukeys' group R² - Coefficient of determination, H - Hysteresis, - Coefficients of Determination. All values reported are the mean values of nine replicates and the relative standard deviation within 20%