

Table S3. Sorption and desorption parameters with statistical indices estimated by Weber-Morris (WMM) nonlinear kinetics model describing the sorption/desorption processes of acetamiprid and thiachloprid in experimental soils.

Sorption					Desorption				
Fitted/statistical parameter	S1	S2	S3	S4	Fitted/statistical parameter	S1	S2	S3	S4
Acetamiprid									
$I_{\text{sor}}^{(a)}$	64.65	49.19	57.44	60.12	$I_{\text{des}}^{(c)}$	74.32	50.76	66.74	67.99
(mg/kg)	(±5.72)	(±3.52)	(±6.12)	(±5.56)	(mg/kg)	(±0.33)	(±0.46)	(±0.28)	(±0.89)
$k_{\text{sor}}^{(b)}$	1.5228	0.8680	1.1771	1.2236	$k_{\text{des}}^{(d)}$	0.5048	1.0661	0.9409	0.8867
(mg/kg/h ^{1/2})	(±0.0834)	(±0.0346)	(±0.3218)	(±0.1235)	(mg/kg/h ^{1/2})	(±0.0438)	(±0.1348)	(±0.0945)	(±0.0825)
$R^2^{(e)}$	0.9172	0.7143	0.7370	0.8626	$R^2^{(e)}$	0.6170	0.6819	0.9682	0.9576
SRMSE ^(f)	0.1864	0.2956	0.2903	0.2055	SRMSE ^(f)	0.3896	0.2986	0.0654	0.0765
err-% ^(g)	14.97	23.73	23.31	16.51	err-% ^(g)	32.68	24.03	5.96	7.88
Thiacloprid									
$I_{\text{sor}}^{(a)}$	94.13	62.05	75.38	84.60	$I_{\text{des}}^{(c)}$	97.74	74.02	85.55	93.26
(mg/kg)	(±5.68)	(±7.83)	(±10.11)	(±9.21)	(mg/kg)	(±0.87)	(±1.26)	(±1.48)	(±0.85)
$k_{\text{sor}}^{(b)}$	0.6949	2.0069	1.9362	1.2941	$k_{\text{des}}^{(d)}$	0.1931	0.7762	0.6209	0.2605
(mg/kg/h ^{1/2})	(±0.0935)	(±0.2534)	(±0.4587)	(±0.1124)	(mg/kg/h ^{1/2})	(±0.0745)	(±0.1225)	(±0.0978)	(±0.0371)
$R^2^{(e)}$	0.7325	0.4635	0.5851	0.5524	$R^2^{(e)}$	0.5974	0.8860	0.7987	0.7477
SRMSE ^(f)	0.3061	0.4025	0.3204	0.3312	SRMSE ^(f)	0.3578	0.1682	0.2356	0.2576
err-% ^(g)	24.58	35.31	29.36	30.11	err-% ^(g)	30.12	14.78	18.56	20.46

(a). (b). (c). (d) – sorbed/desorbed parameters obtained by modelling with with Weber-Morris model (WMM);^(e) – coefficient of multiple determination ^(f) – Scaled Root Mean Squared Error; ^(g) – minimum error level of χ^2 test