

Table S1. Total transport input (L_{in}) and steady-state emission intensity (C_{stable}) of seven farmland soils at $14 \text{ m}\cdot\text{s}^{-1}$

Sampling site	Particle-aggregate group	$L_{in} (\text{g}\cdot\text{m}^{-2}, \text{mean} \pm \text{SE})$	$C_{stable} (\text{mg}\cdot\text{m}^{-3})$
DK	Group 2	135.32 ± 12.76	76.39
WC	Group 2	62.43 ± 5.23	48.08
WY	Group 0	59.19 ± 2.58	70.79
UFB	Group 1	50.01 ± 4.27	50.41
GY	Group 1	38.99 ± 3.89	45.40
DM	Group 0	38.31 ± 3.81	27.78
LH	Group 1	14.52 ± 0.97	43.85

Table S2. Fitted kinetic parameters of static settling of wind-eroded dust from different farmland soils.

Sampling site	Soil type	$a_{\infty} (\text{mg}\cdot\text{cm}^{-2})$	$k (\text{h}^{-1})$	$\tau (\text{h})$	$J_0 (\text{mg}\cdot\text{cm}^{-2}\cdot\text{h}^{-1})$	R^2
DK	Group 2	0.091	1.873	0.534	0.171	0.822
WC	Group 2	0.047	4.129	0.242	0.195	0.218
WY	Group 0	0.073	2.970	0.344	0.212	0.544
DM	Group 0	0.050	1.591	0.629	0.080	0.775
UFB	Group 1	0.057	2.831	0.353	0.160	0.372
GY	Group 1	0.036	2.844	0.352	0.095	0.833
LH	Group 1	0.057	0.975	1.026	0.055	0.956

Table S3. Indicators of static settling of wind-eroded dust from different farmland soils

Sampling site	Particle-aggregate group	$a_{0.5} (\text{mg}\cdot\text{cm}^{-2})$	$M_4 (\text{mg}\cdot\text{cm}^{-2})$	$M_{0.5}/M_4$	$1 - M_{0.5}/M_4$
DK	Group 2	0.061	0.097	0.633	0.367
WC	Group 2	0.042	0.051	0.829	0.171
WY	Group 0	0.059	0.077	0.769	0.231
DM	Group 0	0.033	0.052	0.636	0.364
UFB	Group 1	0.046	0.065	0.698	0.302
GY	Group 1	0.026	0.036	0.729	0.261
LH	Group 1	0.025	0.057	0.430	0.570