

Table S2 Descriptions and units of the symbols used in Table S1.

Symbol	Description	Unit
[urea]	Concentration of urea	kg N ha ⁻¹
[NH ₄ ⁺]	Concentration of ammonium	kg N ha ⁻¹
[NH _{3(l)}]	Concentration of NH ₃ in soil liquid phase	kg N ha ⁻¹
[NH ₄ HCO ₃]	Concentration of NH ₄ HCO ₃	kg N ha ⁻¹
[SOC]	Concentration of soil organic carbon	kg C kg soil ⁻¹
WFPS	Soil moisture factor in water-filled pore space	volume fraction, dimensionless
PORE	S oil porosity	volume fraction, dimensionless
T_{soil}	Soil temperature	°C
pH	Soil pH	—
S_{wind}	Wind speed	m s ⁻¹
lai	Leaf area index	m ² m ⁻²
cl	Soil clay fraction	%
P	Precipitation	cm
d_s	Depth of the simulated soil profile	m
d_l	Thickness of each soil layer	m
d_{soil}	Simulated soil depth	m
d_t	Time step of simulation	1 day or 3 hours
j	the j th soil layer	—
q	Total soil layer number	—