

Supplemental Table S2. Indirect effects of each leaf anatomical traits through other traits on photosynthetic parameters.

Parameters	LT	UCT	UET	PT	ST	LET	LCT	<i>d</i>	TSP
IQY	-0.511	0.350	0.294	0.144	0.155	-0.230	-0.386	0.278	-0.182
AQY	-0.403	0.330	0.265	0.120	0.085	-0.171	-0.497	0.126	-0.063
α	-0.453	0.344	0.281	0.131	0.116	-0.200	-0.454	0.194	-0.118
P_{\max}	0.043	-0.112	-0.113	-0.255	0.092	-0.085	-0.003	-0.529	0.516
I_{sat}	0.358	-0.479	-0.111	-0.161	-0.441	-0.079	-0.642	-0.862	0.739
I_c	0.012	-0.477	-0.256	-0.194	0.092	-0.022	0.196	-0.156	0.182
R_D	-0.277	-0.033	-0.001	-0.089	0.241	-0.338	0.262	0.168	-0.049
R_d	-0.369	-0.110	0.382	0.508	-0.080	-0.227	0.325	-0.075	-0.080
V_{cmax}	0.076	-0.173	0.132	-0.165	-0.069	-0.379	0.377	0.114	-0.059
J_{max}	-0.202	-0.423	-0.002	-0.025	0.009	-0.204	0.195	-0.079	0.275
TPU	-0.264	0.372	0.424	0.486	-0.275	-0.469	-0.226	0.227	-0.082
I^*	0.152	0.089	0.014	0.048	-0.389	0.217	-0.240	-0.210	-0.035
g_i	-0.338	0.252	0.309	-0.153	0.318	-0.487	-0.080	0.014	-0.223
C_i	-0.138	0.267	-0.044	0.225	0.196	0.111	0.120	0.692	-0.536
g_s	0.020	0.216	-0.135	-0.201	0.146	-0.096	-0.073	-0.172	0.297
VPD	-0.309	0.019	-0.126	0.061	0.435	0.081	0.433	0.628	-0.432
A	-0.003	0.208	-0.077	-0.191	0.129	-0.088	-0.062	-0.242	0.307
E	-0.020	0.180	-0.254	-0.254	0.374	0.008	0.112	-0.020	0.203
WUE	0.212	-0.058	0.198	-0.064	-0.399	-0.257	-0.262	-0.599	0.458

LT – leaf thickness, UCT – upper cuticle thickness, UET – upper epidermal thickness, PT – palisade tissue thickness, ST – spongy tissue thickness, LET – lower epidermal thickness, LCT – lower cuticle thickness, *w* – guard cell width, *l* – guard cell length, *d* – stomatal density, TSP – total stomatal pore area, IQY – intrinsic quantum yield, AQY – apparent quantum yield, α – the absolute value of slope between $I = 0$ and $I = I_c$, P_{max} – maximum photosynthetic rate [$\mu\text{mol}(\text{CO}_2) \text{m}^{-2} \text{s}^{-1}$], I_{sat} – light saturation point [$\mu\text{mol}(\text{photon}) \text{m}^{-2} \text{s}^{-1}$], I_c – light compensation point [$\mu\text{mol}(\text{photon}) \text{m}^{-2} \text{s}^{-1}$], R_D – dark respiration [$\mu\text{mol}(\text{CO}_2) \text{m}^{-2} \text{s}^{-1}$], C_i – Inter-cellular CO_2 concentration ($\mu\text{mol mol}^{-1}$), V_{cmax} – Maximal Rubisco carboxylation rate ($\mu\text{mol m}^{-2} \text{s}^{-1}$), J_{max} – Maximal electron transport rate ($\mu\text{mol m}^{-2} \text{s}^{-1}$), T_p – Rate of triose phosphate export from the chloroplast ($\mu\text{mol m}^{-2} \text{s}^{-1}$), R_d – Day respiration ($\mu\text{mol m}^{-2} \text{s}^{-1}$), I^* – CO_2 compensation point in the absence of dark respiration (Pa), g_i – Internal (mesophyll) conductance to CO_2 transport ($\mu\text{mol m}^{-2} \text{s}^{-1} \text{Pa}^{-1}$), K_{oc} – A composite parameter (Pa): $K_{\text{oc}} = K_c \left(1 + \theta/K_0\right)$.