

Appendix:. List of abbreviations. Values in parenthesis are those used in the analysis

Term	Units	Definition
c	nm s^{-1}	Speed of light (3×10^{17})
CO_2	$\mu\text{mol mol}^{-1}$	Atmospheric CO_2 concentration (380)
C	$\mu\text{mol mol}^{-1}$	Intercellular CO_2 concentration (266)
d_{pr}	–	Decrease in ϵ_c caused by photorespiration

Appendix (Continued)

Term	Units	Definition
h	J s	Planck's constant (6.626×10^{-34})
I	$\mu\text{mol m}^{-2} \text{s}^{-1}$	Photon flux density
k	J K^{-1}	Boltzmann's constant (1.38×10^{-23})
k_c^c	s^{-1}	Number of carboxylation reactions per active site of Rubisco per second
k_c^o	s^{-1}	Number of oxygenation reactions per active site of Rubisco per second
K_m^c	$\mu\text{mol mol}^{-1}$	Rubisco Michaelis–Menten constant for CO_2 (683 at 30 °C)
K_m^o	mmol mol^{-1}	Rubisco Michaelis–Menten constant for O_2 (353 at 30 °C)
O_2	mmol mol^{-1}	Atmospheric O_2 concentration (210)
O	mmol mol^{-1}	Intercellular O_2 concentration (210)
NAD-ME	–	NAD-Malic Enzyme subtype C4 photosynthesis
PSII	–	Photosystem II
T_s	K	Temperature at sun's surface (5800)
ϕ	–	The ratio of oxygenations to each carboxylation
τ	–	The specificity of Rubisco for CO_2 relative to O_2 (91.3 at 25 °C)
λ	nm	Wavelength
ϵ_c	–	Energy conversion efficiency