Table I. *Estimation of $A_{c,tot}$ from Equation 1 for S. olneyi stands growing in 351 and 680 μmol mol^{-1} of CO_2 in air*

Columns 1 and 2 use values measured for the 351 and 680 μmol mol^{-1} CO_2 concentration chambers, respectively, to calculate $A_{c,tot}$ following Equation 1 for June 12, 1988. In column 3, $A_{c,tot}$ is recalculated using the values of column 2 but assuming no increase in ϕ_{abs} with CO_2 elevation. Columns 4 and 5 examine the effects of an approximately 65% decrease in Q_{tot} on the estimated $A_{c,tot}$ using the measured parameters for the two chamber types.

	1	2	3	4	5
c_a (μmol mol^{-1})	351	680	680	351	680
k (dimensionless)[a]	0.27	0.27	0.27	0.27	0.27
α (dimensionless)[b]	0.85	0.85	0.85	0.85	0.85
ϕ_{abs} (dimensionless)[b]	0.065	0.078	0.065	0.065	0.078
A_{sat} (μmol m^{-2} s^{-1}) (29)	12.5	19.8	19.8	12.5	19.8
s (dimensionless) (9)	5.93	6.78	6.78	5.93	6.78
Q_{tot} (mol m^{-2} s^{-1}) (9)	58.9	58.9	58.9	20.0	20.0
R (μmol m^{-2} s^{-1})[c]	1.17	1.17	1.17	1.17	1.17
$A_{c,tot}$ (mol m^{-2} s^{-1})[d]	0.63	1.06	0.90	0.04	0.17
$A_{c,tot}$ (mol m^{-2} s^{-1})[e] (9)	0.61	1.07			

[a] Calculated from Refs. 27 and 9. [b] Parameter determined in this study. [c] Calculated from data from Refs. 9 and 10. [d] Estimated value of $A_{c,tot}$. [e] Measured value of $A_{c,tot}$.

[2] Abbreviations: c_a, the concentration of CO_2 in the ambient air (μmol mol^{-1}); A, rate of CO_2 uptake per unit of projected area of stem (μmol m^{-2} s^{-1}); RuBP, ribulose-1,5-bisphosphate; A_{sat}, A at light saturation (μmol m^{-2} s^{-1}); Q, photosynthetically active photon flux (μmol m^{-2} s^{-1}); Q_{abs}, Q absorbed per unit of projected stem area; ϕ_{abs}, the maximum quantum yield, *i.e.* ratio of CO_2 molecules absorbed per photon absorbed; Q_{wall}, Q on the wall of the Ulbricht sphere; F_v, variable component of F_m; F_m, maximum emission of PSII chlorophyll fluorescence (arbitrary units); LCP, the light compensation point of photosynthesis (μmol m^{-2} s^{-1}); $A_{c,tot}$, daily integral of net canopy photosynthetic CO_2 uptake (mol m^{-2} d^{-1}); Q_{tot} the photon flux accumulated over 1 d (mol m^{-2} d^{-1}); h, time between sunrise and sunset (s d^{-1}); k, canopy or foliar light extinction coefficient (dimensionless); R, dark respiration rate per unit of projected area of stem (μmol m^{-2} s^{-1}); s, stem area index, *i.e.* stem surface area overlying a unit of ground area (dimensionless); α, the absorptance of the stem surface, *i.e.* the ratio of the absorbed flux to the incident flux (dimensionless).

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