Table 2. Estimates of the daily canopy carbon gain (A_c') after Zhu *et al.* (2004b) and assuming the hypothetical replacement of the average form of Rubisco from C_3 crop species with Rubiscos from other species

Species	A_c' (mmol m^{-2} d^{-1})	A_c' (%)	A_{sat} (μmol m^{-2} s^{-1})
Current average C_3 crop ($k^c_c = 2.5$, $\tau = 92.5$)	1040	100	14.9
Griffithsia monilis ($k^c_c = 2.6$, $\tau = 167$)	1430	127%	21.5
Amaranthus edulis ($k^c_c = 7.3$, $\tau = 82$)	1250	117%	28.3
A. edulis/current ($k^c_c = 2.5$, $\tau = 92.5$)	1360	131%	28.3

Reported values for k^c_c and τ of these species (Jordan & Ogren 1984; Seemann *et al.* 1984; Whitney *et al.* 2001) are listed. The final row extends to the results of Zhu *et al.* (2004b) to simulate the gain that can be achieved if a form of Rubisco with a high k^c_c (*A. edulis*) can be expressed in the sunlit leaves and if a form with high τ (current C_3 average) can be expressed in the shade leaves.

k^c_c, maximum catalytic rate of Rubisco; τ, specificity of Rubisco for CO_2 relative to O_2; A_{sat}, maximum rate of photosynthesis; Rubisco, ribulose 15-biphosphate carboxylase/oxygenase.