Table 1 Analysis of determinants of soybean yield when grown under ambient and elevated [CO_2]

Measure (units)[a]	Y	W[b,c]	S_t	ε_i	ε_c	ε_p[c]
	MJ m^{-2} (t ha^{-1})	MJ m^{-2} (t ha^{-1})	MJ m^{-2}	(Dimensionless: 0–1)		
380 ppm	10.6 (4.60)	17.7 (8.76)	620	0.89	0.032	0.60
550 ppm	12.2 (5.29)	20.9 (10.40)	620	0.89	0.038	0.58
% difference	15.0	18.2	0	0	18.8	−2.7

Component analysis of the yield of soybean (Glycine max L., cv. 93B15) grown in 2002 at SoyFACE (soybean Free Air Concentration Enrichment facility, Urbana, Illinois), based on Equation 1. Yields are based on four control and four elevated CO_2 plots. The analysis is based on the data of Morgan et al. (84) and Dermody et al. (24).

[a]Abbreviations are as given for Equation 1.

[b]W is the total dry matter content in both energy and mass.

[c]W and ε_p were modified from Dermody et al. (24) to include root biomass, which was 18.5% of the total biomass, with the proportion unaffected by the CO_2 treatment. The energy content of the seeds was assumed to be 23 MJ/kg and the remainder of the biomass, 17 MJ/kg (24).