

Supplementary material

Table S1. Probability levels of significance from ANOVA (RCBD design) for several traits measured in a glasshouse experiment (Experiment 1) for 8 Australian turfgrasses (2 cultivars/species × 4 species) conducted at The University of Queensland in April–May 2007

Traits included cumulative evapotranspiration (ET), cumulative clipping yield (CY), water use efficiency (WUE) and relative water use efficiency (WUE_r). DOT = days of treatment. (Source of variation for blocks was excluded from table). ns indicates not significant at the 0.05 probability level, * indicates significant at the 0.05 probability level and ** indicates significant at the 0.01 probability level

Source of variance	Cumulative ET			Cumulative CY			WUE	WUE _r
	6 DOT	18 DOT	30 DOT	6 DOT	18 DOT	30 DOT		
Species (S)	ns	*	**	**	**	**	**	*
Genotype within Species	ns	ns	ns	*	*	**	**	**
water treatment (WT)	ns	*	**	ns	ns	**	**	
S*WT	ns	ns	*	ns	ns	*	*	

Table S2. Probability levels of significance from ANOVA for several traits measured in a field experiment (Experiment 2) for 8 Australian turfgrasses (2 cultivars/species × 4 species) conducted in an open compound at The University of Queensland in January–March 2008

Traits included survival period (SP), cumulative evapotranspiration (ET), cumulative clipping yield (CY), water use efficiency (WUE), canopy temperature, verdure dry weight, total root dry mater (RDM) and RDM below 20 cm of soil profile. DOT = days of treatment. ns indicates significant at the probability level $P > 0.05$, * indicates significant at the probability level $0.01 < P \leq 0.05$ and ** indicates significant at the probability level $P \leq 0.01$

Source of variance	Cumulative ET					Cumulative CY				WUE		Canopy temperature			Dry matter production				
	SP	Irrigated		Drought			SP	Irrigated		Drought	Irrigated	Drought	WUE _r	0 DOT	3 DOT	6 DOT	Verdure	RDM	
		12 DOT	6 DOT	18 DOT	31 DOT	12 DOT		12 DOT	Total RDM									below 20 cm	
Species (S)	**	**	*	**	*	ns	**	**	**	**	**	**	ns	**	**	**	ns	*	
Genotype within Species	*	**	**	*	ns	ns	**	**	**	**	*	*	**	ns	*	**	**	**	
Soil Type (ST)	**	**	ns	**	**	**	ns	ns	**	ns	ns	ns	ns	ns	ns	ns	**	**	
Cutting Height (CH)	**	**	**	**	ns	ns	**	ns	ns	**	ns	**	**	**	**	**	**	**	
S*ST	*	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
S*CH	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	*	ns	ns	ns	
ST*CH	ns	**	ns	**	**	**	ns	ns	ns	ns	ns	ns	ns	ns	**	ns	ns	ns	
S*ST*CH	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	

Table S3. Correlation between Experiments 1 and 2 for measures of cumulative evapotranspiration (ET), water use efficiency (WUE) and relative water use efficiency (WUE_r) among 8 Australian turfgrasses (2 cultivars/species × 4 species)

Values given are correlation coefficients ($n = 8$) among traits measured under the same treatment (sandy soil × 5 cm clipping height) and (a) when similar cumulative ET occurred between the experiments under irrigated condition and (b) when average soil water content was similar between the experiments under drought condition. Correlations for WUE and WUE_r are given in part (c). DOT = days of treatment. ns indicates not significant at the 0.05 probability level, * indicates significant at the 0.05 probability level and ** indicates significant at the 0.01 probability level.

(a)		Experiment 1 – Irrigated cumulative ET				
		6 DOT	12 DOT	18 DOT	24 DOT	30 DOT
Experiment 2 Irrigated cumulative ET	ns	0.78*	0.71*	0.84**	0.81**	
(b)		Experiment 1 – Drought cumulative ET				
		6 DOT	12 DOT	18 DOT	24 DOT	30 DOT
Experiment 2 Drought cumulative ET	ns	0.78*	0.78*	0.72*	0.71*	
(c)		Experiment 1 – WUE				
			Irrigated WUE	Drought WUE	WUE _r	
Experiment 2 WUE	Irrigated WUE	0.28*	ns	ns		
	Drought WUE	ns	0.78*	ns		
	WUE _r	ns	0.71*	0.78*		

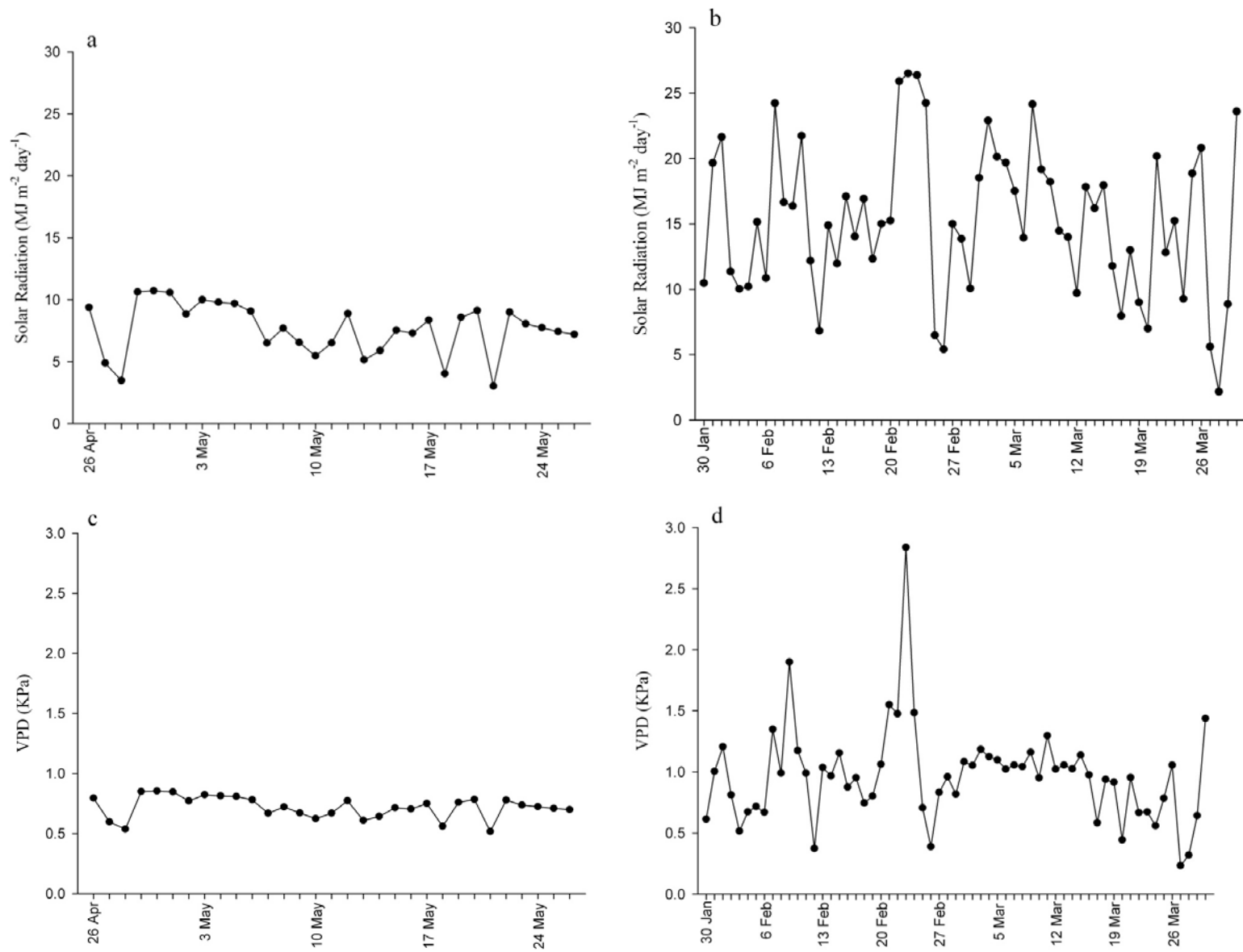


Fig. S1. Daily solar radiation (a) inside the glasshouse during the period of Experiment 1 (April–May 2007) and (b) in the compound during the period of Experiment 2 (January–March 2008) and daily vapor pressure deficit (VPD) in the period of (c) Experiment 1 and (d) Experiment 2.