

SUPPLEMENTARY MATERIAL

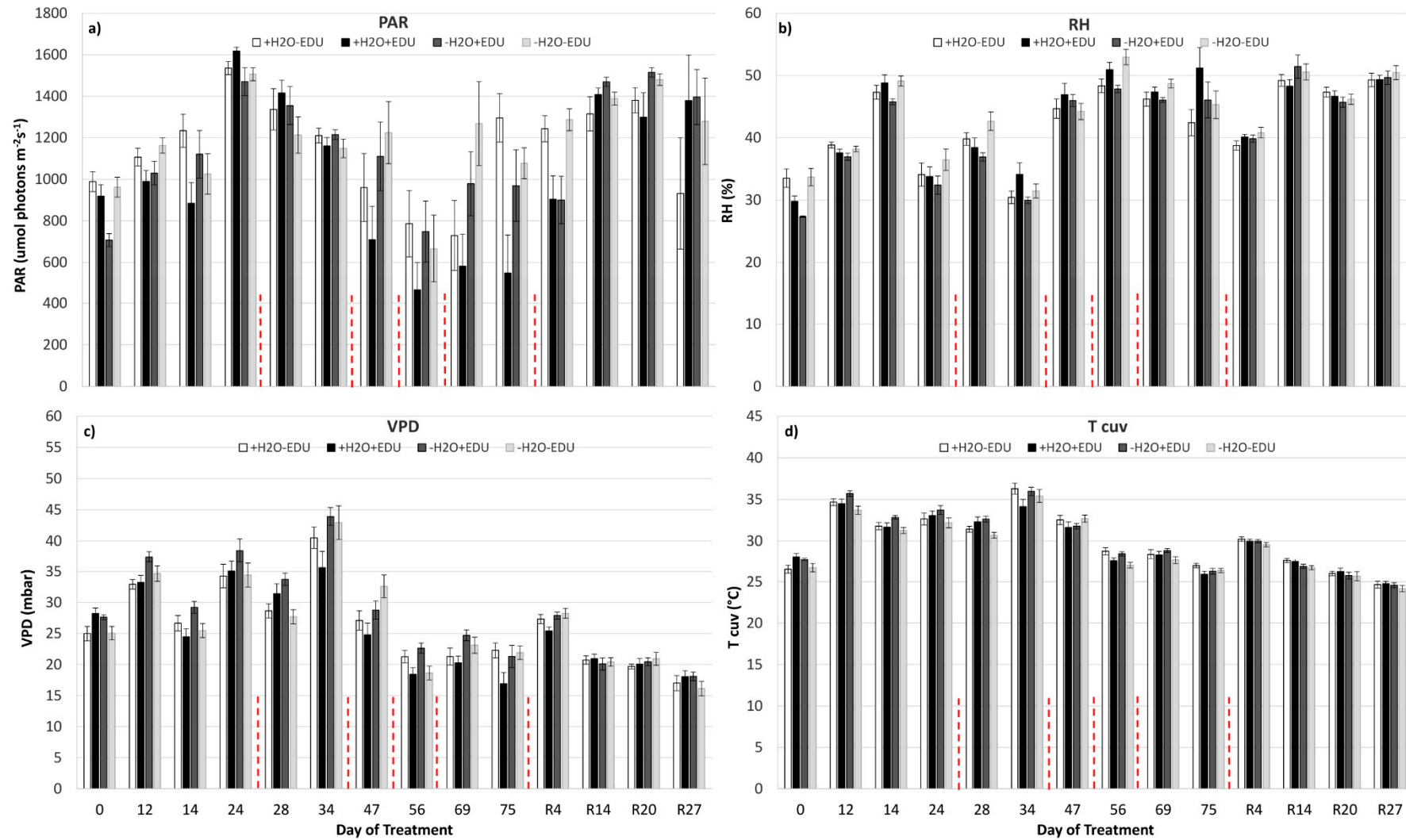


Figure S1. (a) Photosynthetic active radiation (PAR, $\mu\text{mol photons m}^{-2}\text{s}^{-1}$); (b) relative air humidity (RH, %); (c) Vapour Pressure Difference between leaf and air (VPD, mbar); (d) cuvette air temperature (T_{cuv} , °C), simultaneously measured with leaf-level gas exchanges. Vertical red dashed bars indicate the dates in which

the EDU treatments were applied. On the horizontal axis, the Day of Treatment is reported (0–75 = days from the last irrigation and R4, R14, R20, R27, days from rewatering of the water stressed mesocosms). For each measurement date, data are expressed as mean $\pm$ Standard Error ($9 < N < 30$, see Supplementary Table S1).

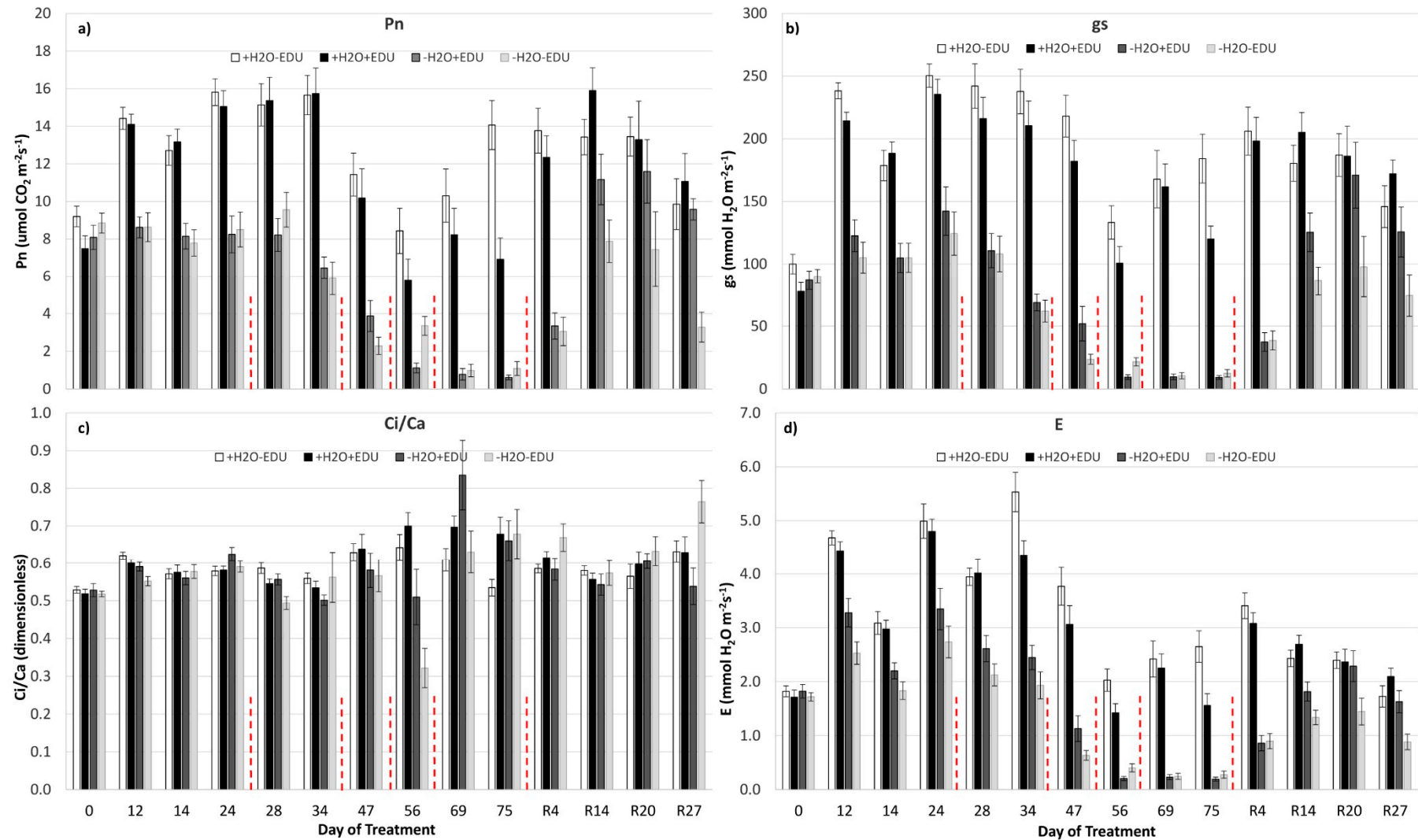


Figure S2. (a) Net photosynthesis (Pn, mmolCO₂ m⁻² s⁻¹); (b) stomatal conductance (gs, mmol H₂O m⁻² s⁻¹); (c) Ci/Ca ratio (dimensionless); (d) leaf transpiration (E, mmol H₂O m⁻² s⁻¹), measured during the experimental period. Vertical red dashed bars indicate the dates in which the EDU treatments were applied. On the horizontal axis, the Day of Treatment is reported (0–75 = days from the last irrigation and R4, R14, R20, R27, days from rewatering of the water stressed mesocosms). For each measurement date, data are expressed as mean ± Standard Error (9 < N < 30, see Supplementary Table S1).

Table S1. Average ± SE values of gas exchanges (Figure 3, Figure S2) and chlorophyll fluorescence parameters (Figure 4). For each sampling date and experimental set, the number of observations (N) is also reported.

DOT	Set	N	Pn		gs		E		Ci/Ca		Fv/Fm		FPSII		qP		qNP	
			(mmolCO ₂ m ⁻² s ⁻¹)		(mmolH ₂ O m ⁻² s ⁻¹)		(mmolH ₂ O m ⁻² s ⁻¹)		(dimensionless)									
			Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
0	+H2O-EDU	30	9.20	0.55	99.93	7.79	1.82	0.10	0.53	0.01	0.81	0.01	0.58	0.05	0.65	0.05	0.35	0.05
0	+H2O+EDU	24	7.49	0.68	77.75	7.16	1.71	0.13	0.52	0.01	0.82	0.02	0.60	0.03	0.66	0.03	0.34	0.03
0	-H2O-EDU	27	8.85	0.53	90.04	5.52	1.72	0.08	0.52	0.01	0.84	0.01	0.63	0.02	0.69	0.02	0.31	0.02
0	-H2O+EDU	27	8.09	0.64	86.81	7.43	1.82	0.13	0.53	0.02	0.81	0.02	0.72	0.00	0.77	0.01	0.23	0.01
12	+H2O-EDU	30	14.42	0.59	238.27	6.44	4.68	0.13	0.62	0.01	0.78	0.02	0.65	0.04	0.72	0.05	0.28	0.05
12	+H2O+EDU	24	14.10	0.54	214.33	6.86	4.44	0.17	0.60	0.01	0.79	0.02	0.55	0.05	0.62	0.05	0.38	0.05
12	-H2O-EDU	27	8.63	0.77	105.15	12.34	2.53	0.21	0.55	0.01	0.85	0.01	0.47	0.06	0.52	0.07	0.48	0.07
12	-H2O+EDU	24	8.62	0.56	122.63	12.66	3.28	0.26	0.59	0.01	0.82	0.01	0.56	0.03	0.63	0.03	0.37	0.03
14	+H2O-EDU	30	12.71	0.79	178.67	12.10	3.09	0.21	0.57	0.01	0.80	0.01	0.61	0.04	0.66	0.04	0.34	0.04
14	+H2O+EDU	23	13.17	0.67	188.39	9.20	2.97	0.16	0.58	0.02	0.81	0.01	0.53	0.05	0.59	0.05	0.41	0.05
14	-H2O-EDU	27	7.79	0.71	104.96	11.62	1.83	0.16	0.58	0.02	0.82	0.01	0.50	0.03	0.56	0.03	0.44	0.03
14	-H2O+EDU	21	8.15	0.68	104.86	11.64	2.20	0.15	0.56	0.02	0.83	0.01	0.60	0.03	0.67	0.02	0.33	0.02
24	+H2O-EDU	30	15.81	0.71	250.33	9.34	4.99	0.32	0.58	0.01	0.78	0.01	0.51	0.03	0.57	0.04	0.43	0.04
24	+H2O+EDU	24	15.05	0.84	235.46	12.05	4.80	0.23	0.58	0.01	0.78	0.01	0.45	0.03	0.52	0.04	0.48	0.04
24	-H2O-EDU	27	8.51	0.93	124.37	17.30	2.74	0.29	0.59	0.01	0.79	0.01	0.40	0.04	0.47	0.04	0.53	0.04
24	-H2O+EDU	24	8.25	0.98	142.29	19.36	3.35	0.39	0.62	0.02	0.78	0.01	0.49	0.03	0.57	0.03	0.43	0.03
28	+H2O-EDU	18	15.14	1.13	242.06	17.80	3.94	0.16	0.59	0.01	0.77	0.02	0.49	0.06	0.54	0.06	0.46	0.06
28	+H2O+EDU	18	15.37	1.23	216.00	17.01	4.01	0.27	0.55	0.01	0.79	0.01	0.51	0.02	0.60	0.02	0.40	0.02
28	-H2O-EDU	15	9.56	0.93	108.13	14.25	2.12	0.20	0.49	0.02	0.80	0.01	0.38	0.04	0.45	0.04	0.55	0.04
28	-H2O+EDU	21	8.21	0.88	110.76	13.62	2.61	0.24	0.56	0.01	0.78	0.01	0.55	0.05	0.65	0.04	0.35	0.04
34	+H2O-EDU	21	15.66	1.04	237.67	17.72	5.53	0.37	0.56	0.01	0.79	0.01	0.48	0.03	0.55	0.03	0.45	0.03
34	+H2O+EDU	15	15.75	1.35	210.40	19.72	4.35	0.27	0.53	0.02	0.81	0.01	0.54	0.03	0.60	0.03	0.40	0.03
34	-H2O-EDU	18	5.89	0.88	62.00	8.75	1.93	0.25	0.56	0.07	0.77	0.01	0.31	0.04	0.39	0.03	0.61	0.03

DOT	Set	N	Pn ($\mu\text{molCO}_2\text{ m}^{-2}\text{s}^{-1}$)		gs ($\text{mmolH}_2\text{O m}^{-2}\text{s}^{-1}$)		E ($\text{mmolH}_2\text{O m}^{-2}\text{s}^{-1}$)		Ci/Ca (dimensionless)		Fv/Fm		FPSII		qP		qNP	
			Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
34	-H2O+EDU	18	6.46	0.59	68.83	6.66	2.45	0.23	0.50	0.01	0.80	0.01	0.45	0.05	0.51	0.05	0.49	0.05
47	+H2O-EDU	18	11.43	1.14	218.06	16.68	3.77	0.35	0.63	0.02	0.79	0.01	0.51	0.04	0.57	0.04	0.43	0.04
47	+H2O+EDU	18	10.18	1.55	182.06	16.70	3.06	0.35	0.64	0.04	0.79	0.01	0.56	0.04	0.61	0.04	0.39	0.04
47	-H2O-EDU	22	2.29	0.46	23.68	3.94	0.63	0.09	0.57	0.04	0.78	0.03	0.20	0.03	0.27	0.03	0.73	0.03
47	-H2O+EDU	17	3.87	0.83	52.00	13.75	1.13	0.24	0.58	0.05	0.79	0.01	0.43	0.06	0.53	0.06	0.47	0.06
56	+H2O-EDU	18	8.43	1.20	133.22	13.40	2.03	0.21	0.64	0.04	0.83	0.00	0.40	0.07	0.46	0.07	0.54	0.07
56	+H2O+EDU	18	5.77	1.16	100.67	13.45	1.42	0.17	0.70	0.04	0.83	0.01	0.58	0.05	0.66	0.05	0.34	0.05
56	-H2O-EDU	15	3.35	0.50	21.60	3.28	0.40	0.07	0.32	0.05	0.77	0.02	0.14	0.03	0.21	0.04	0.79	0.04
56	-H2O+EDU	18	1.11	0.26	9.44	1.83	0.20	0.04	0.51	0.07	0.75	0.01	0.44	0.07	0.58	0.06	0.42	0.06
69	+H2O-EDU	17	10.31	1.42	167.76	22.89	2.42	0.33	0.61	0.03	0.82	0.01	0.63	0.04	0.68	0.04	0.32	0.04
69	+H2O+EDU	18	8.23	1.40	161.56	18.33	2.25	0.26	0.70	0.03	0.84	0.01	0.69	0.03	0.74	0.03	0.26	0.03
69	-H2O-EDU	11	0.98	0.34	10.55	2.36	0.24	0.06	0.63	0.06	0.73	0.04	0.27	0.05	0.33	0.05	0.67	0.05
69	-H2O+EDU	21	0.78	0.31	9.62	2.22	0.23	0.05	0.83	0.09	0.73	0.02	0.17	0.01	0.27	0.03	0.73	0.03
75	+H2O-EDU	20	14.07	1.31	184.15	19.44	2.65	0.29	0.53	0.02	0.82	0.01	0.49	0.05	0.55	0.06	0.45	0.06
75	+H2O+EDU	13	6.92	1.13	120.00	10.38	1.56	0.22	0.68	0.05	0.83	0.00	0.57	0.05	0.63	0.06	0.37	0.06
75	-H2O-EDU	17	1.08	0.37	12.47	2.93	0.28	0.07	0.68	0.07	0.71	0.04	0.19	0.05	0.28	0.05	0.72	0.05
75	-H2O+EDU	10	0.61	0.13	9.20	1.47	0.19	0.04	0.66	0.05	0.72	0.02	0.34	0.04	0.46	0.04	0.54	0.04
R14	+H2O-EDU	15	13.43	0.94	180.40	14.49	2.43	0.15	0.58	0.01	0.83	0.01	0.49	0.03	0.56	0.04	0.44	0.04
R14	+H2O+EDU	15	15.90	1.21	205.13	15.85	2.69	0.17	0.56	0.02	0.84	0.00	0.53	0.02	0.60	0.02	0.40	0.02
R14	-H2O-EDU	15	7.88	1.13	86.27	11.36	1.34	0.13	0.57	0.03	0.81	0.01	0.42	0.03	0.50	0.03	0.50	0.03
R14	-H2O+EDU	9	11.17	1.34	125.33	15.43	1.81	0.18	0.54	0.03	0.80	0.01	0.52	0.04	0.64	0.03	0.36	0.03
R20	+H2O-EDU	12	13.45	1.04	187.08	17.06	2.40	0.15	0.56	0.03	0.82	0.01	0.42	0.03	0.51	0.03	0.49	0.03
R20	+H2O+EDU	12	13.28	2.05	186.08	23.97	2.37	0.23	0.60	0.03	0.84	0.01	0.50	0.03	0.56	0.04	0.44	0.04
R20	-H2O-EDU	9	7.44	2.01	97.78	24.36	1.45	0.25	0.63	0.04	0.81	0.02	0.44	0.04	0.53	0.04	0.47	0.04
R20	-H2O+EDU	9	11.60	1.69	171.00	26.31	2.29	0.29	0.61	0.02	0.81	0.01	0.44	0.04	0.54	0.04	0.46	0.04
R27	+H2O-EDU	9	9.86	1.35	145.89	16.73	1.73	0.20	0.63	0.03	0.85	0.00	0.71	0.06	0.78	0.05	0.22	0.05
R27	+H2O+EDU	9	11.07	1.48	172.00	11.10	2.10	0.15	0.63	0.04	0.86	0.00	0.76	0.02	0.81	0.02	0.19	0.02
R27	-H2O-EDU	9	3.28	0.79	74.56	16.75	0.88	0.14	0.76	0.06	0.84	0.01	0.49	0.14	0.54	0.15	0.46	0.15
R27	-H2O+EDU	9	9.58	0.57	125.67	19.93	1.63	0.21	0.54	0.05	0.85	0.01	0.75	0.02	0.81	0.02	0.19	0.02
R4	+H2O-EDU	18	13.77	1.19	206.11	19.10	3.41	0.24	0.59	0.01	0.83	0.00	0.56	0.03	0.61	0.03	0.39	0.03
R4	+H2O+EDU	18	12.34	1.15	198.28	18.85	3.08	0.20	0.62	0.02	0.84	0.00	0.56	0.05	0.61	0.05	0.39	0.05

DOT	Set	N	Pn		gs		E		Ci/Ca		Fv/Fm		FPSII		qP		qNP	
			($\mu\text{molCO}_2 \text{ m}^{-2}\text{s}^{-1}$)		(mmolH ₂ O $\text{m}^{-2}\text{s}^{-1}$)		(mmolH ₂ O $\text{m}^{-2}\text{s}^{-1}$)		(dimensionless)									
			Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
R4	-H2O-EDU	18	3.05	0.75	38.56	7.54	0.90	0.14	0.67	0.04	0.76	0.02	0.33	0.05	0.42	0.06	0.58	0.06
R4	-H2O+EDU	18	3.34	0.69	37.39	7.41	0.86	0.14	0.58	0.03	0.80	0.01	0.38	0.04	0.46	0.04	0.54	0.04