

### Accessory Publication

**Table S1. Summary of split-plot analysis of variance (ANOVA) for the effects of temperature, carbon dioxide, watering regimes and species on various characteristics of six crops (faba bean, sunflower, pea, canola, wheat and barley)**

Plants were grown under two temperature regimes (24°C day/20°C night and 30°C day/26°C night), two CO<sub>2</sub> concentrations (380 and 760 µmol mol<sup>-1</sup>) and two watering regimes (well watered and water stressed) in controlled-environment growth chambers

Treatment	d.f.	Plant gas emission				Plant growth			
		Methane		Stem height		Leaf area		Aboveground biomass	
		F	<i>P</i>	F	<i>P</i>	F	<i>P</i>	F	<i>P</i>
Temperature (T)	1	131.11	0.0003	108.85	0.0005	159.71	0.0002	161.67	0.0002
Main plot error	4	–	–	–	–	–	–	–	–
Carbon dioxide (C)	1	198.17	<0.0001	7.97	0.0058	18.69	<0.0001	161.98	<0.0001
Watering regime (W)	1	192.15	<0.0001	33.33	<0.0001	196.72	<0.0001	283.30	<0.0001
Species (S)	5	65.77	<0.0001	108.55	<0.0001	100.64	<0.0001	159.61	<0.0001
T × C	1	0.92	0.3409	24.01	<0.0001	23.59	<0.0001	0.20	0.6567
T × W	1	2.74	0.1011	1.13	0.2903	42.41	<0.0001	37.01	<0.0001
T × S	5	2.50	0.0360	5.78	0.0001	18.25	<0.0001	16.25	<0.0001
C × W	1	3.11	0.0812	1.16	0.6863	0.67	0.4164	10.42	0.0017

C × S	5	1.74	0.1324	1.23	0.2999	2.72	0.0246	8.10	<0.0001
W × S	5	6.87	<0.0001	1.79	0.1221	25.22	<0.0001	30.03	<0.0001
T × C × W	1	0.27	0.6040	2.96	0.0885	1.38	0.2437	0.96	0.3298
T × C × S	5	2.51	0.0353	5.26	0.0003	1.01	0.4146	3.60	0.0051
T × W × S	5	2.40	0.0428	0.97	0.4412	9.66	<0.0001	9.22	<0.0001
C × W × S	5	2.73	0.0239	0.13	0.9842	1.70	0.1427	2.79	0.0214
T × C × W × S	5	2.10	0.0728	0.25	0.9366	0.02	0.9999	0.97	0.4386
Subplot error	92	–	–	–	–	–	–	–	–

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Gas exchange

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Treatment	d.f.	Net CO <sub>2</sub> assimilation		Transpiration		Water use efficiency	
		F	<i>P</i>	F	<i>P</i>	F	<i>P</i>
Temperature (T)	1	142.18	0.0003	1.69	0.2631	9.69	0.0358
Main plot error	4	–	–	–	–	–	–
Carbon dioxide (C)	1	306.02	<0.0001	16.92	<0.0001	24.21	<0.0001
Watering regime (W)	1	1192.36	<0.0001	720.84	<0.0001	2.35	0.1289
Species (S)	5	433.20	<0.0001	168.22	<0.0001	11.05	<0.0001
T × C	1	163.70	<0.0001	3.40	0.0685	9.44	0.0028
T × W	1	12.30	0.0007	20.87	<0.0001	0.17	0.6805
T × S	5	8.06	<0.0001	11.08	<0.0001	2.94	0.0165
C × W	1	8.97	0.0035	4.67	0.0334	2.92	0.0907

$C \times S$	5	27.70	<0.0001	11.13	<0.0001	2.72	0.0243
$W \times S$	5	39.29	<0.0001	38.05	<0.0001	3.30	0.0087
$T \times C \times W$	1	0.30	0.5866	2.44	0.1215	2.03	0.1571
$T \times C \times S$	5	12.66	<0.0001	0.95	0.4539	0.93	0.4637
$T \times W \times S$	5	15.18	<0.0001	11.46	<0.0001	3.00	0.0149
$C \times W \times S$	5	8.70	<0.0001	4.23	0.0016	0.50	0.7733
$T \times C \times W \times S$	5	13.89	<0.0001	3.22	0.0101	1.81	0.1194
Subplot error	92	–	–	–	–	–	–

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