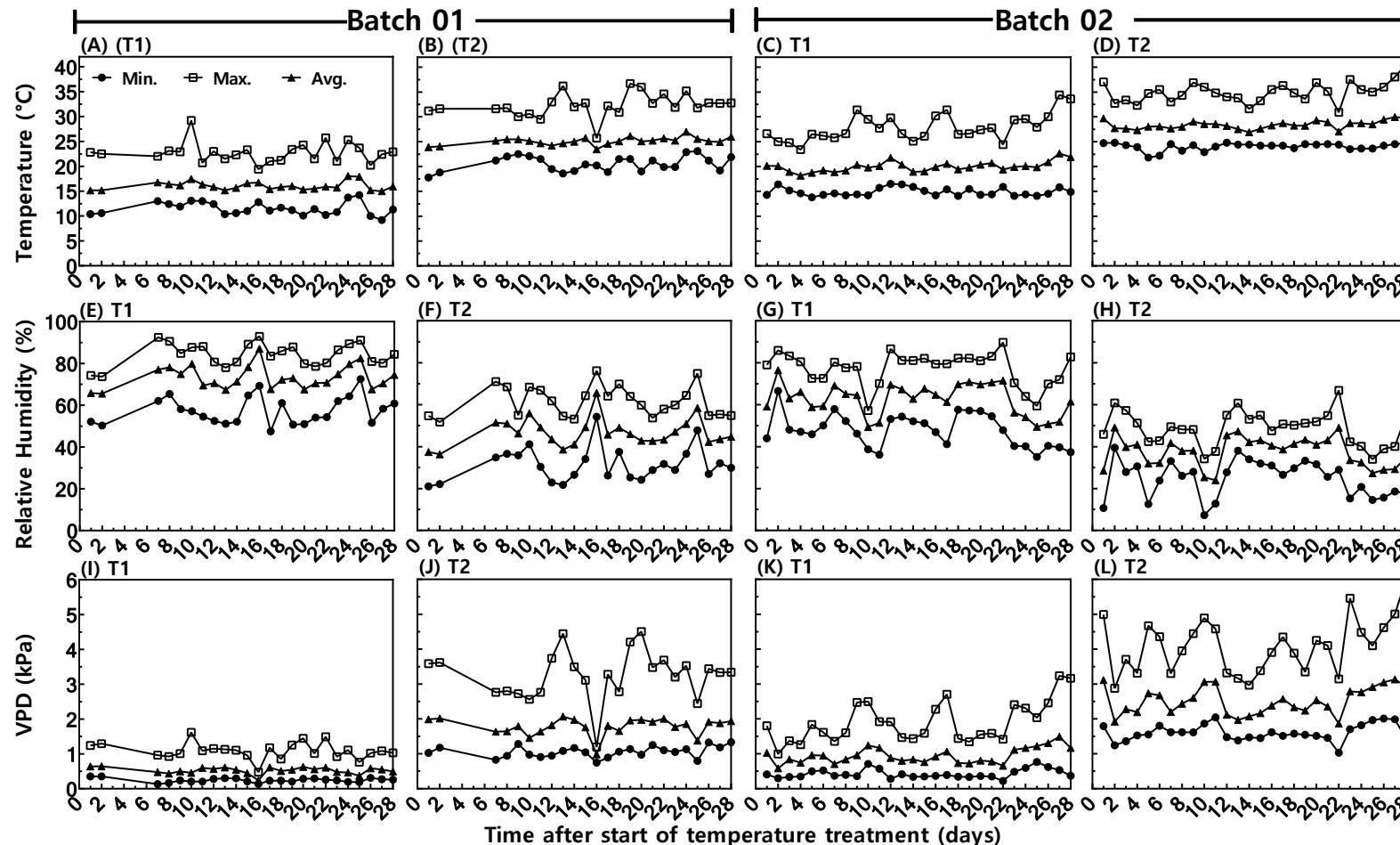


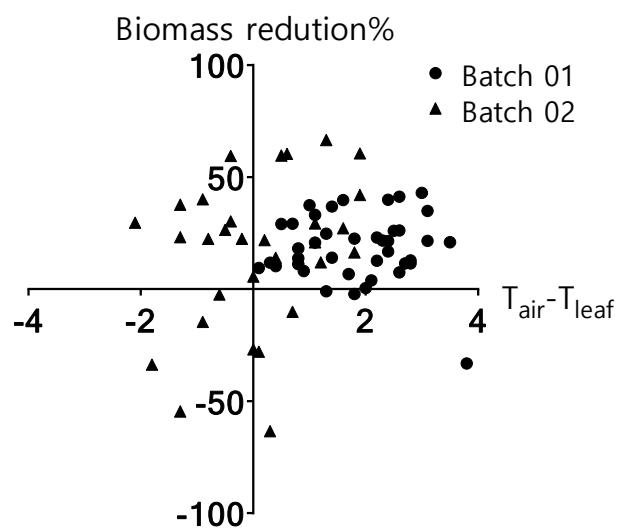
Article

## Transpirational Leaf Cooling Effect Did Not Contribute Equally to Biomass Retention in Wheat Genotypes under High Temperature

### SUPPLEMENTARY FIGURES



**Figure S1.** Daily fluctuations in maximum, minimum, and average environmental conditions inside the two glasshouses during the experimental period (after imposing the temperature treatment). Plants were grown in the ambient temperature (Amb-T1) glasshouse and half of the replicates transferred to the high temperature (High-T2) glasshouse 7 weeks after planting.



**Figure S2.** Relationship between biomass reduction% and leaf-to-air temperature differential ( $T_{air} - T_{leaf}$ ) in Batch 01 and Batch 02 wheat genotypes under T2 temperature condition. Biomass reduction% refers to the difference in biomass between T1 and T2 temperature conditions in relation to the biomass under T1 condition. Each data point represents an individual plant, all genotypes combined.

## SUPPLEMENTARY TABLES

**Table S1.** Environmental conditions inside the two glasshouses during the experiment period (after imposing the temperature treatment). Plants were grown in the ambient temperature (Amb-T1) glasshouse and half of the replicates transferred to the high temperature (High-T2) glasshouse 7 weeks after planting. Data are means  $\pm$  SEM of the minimum (night), maximum (day) and average conditions of the particular parameter measured.

	Glasshouse temperature (°C)			Relative humidity (%)			Vapour pressure deficit (kPa)		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
<b>Batch 01</b>									
Amb (T1)	11.5 $\pm$ 0.3	22.7 $\pm$ 0.4	16.1 $\pm$ 0.2	57.4 $\pm$ 1.4	84.2 $\pm$ 1.1	73.2 $\pm$ 1.1	0.24 $\pm$ 0.01	1.09 $\pm$ 0.05	0.52 $\pm$ 0.02
High (T2)	20.8 $\pm$ 0.3	32.3 $\pm$ 0.5	25.1 $\pm$ 0.1	31.6 $\pm$ 1.7	61.9 $\pm$ 1.5	46.8 $\pm$ 1.4	1.06 $\pm$ 0.03	3.25 $\pm$ 0.14	1.78 $\pm$ 0.05
<b>Batch 02</b>									
Amb (T1)	14.9 $\pm$ 0.1	27.9 $\pm$ 0.5	20.0 $\pm$ 0.2	47.8 $\pm$ 1.5	77.3 $\pm$ 1.5	62.6 $\pm$ 1.4	0.43 $\pm$ 0.02	1.89 $\pm$ 0.11	0.94 $\pm$ 0.04
High (T2)	24.0 $\pm$ 0.1	35.0 $\pm$ 0.4	28.4 $\pm$ 0.1	24.8 $\pm$ 1.6	48.8 $\pm$ 1.5	37.5 $\pm$ 1.3	1.61 $\pm$ 0.04	4.09 $\pm$ 0.15	2.52 $\pm$ 0.07

**Table S2.** Parameters of linear regression models for the relationship between instantaneous rate of transpiration ( $T_r$ ) and atmospheric vapour pressure deficit (VPD) in 20 wheat genotypes. Data are means  $\pm$  SEM for the best-fit values and the goodness of fits of the regressions.

Genotype	Slope (mmol H <sub>2</sub> O m <sup>-2</sup> s <sup>-1</sup> kPa <sup>-1</sup> )	Instantaneous rate of T <sub>r</sub> -intercept (mmol H <sub>2</sub> O m <sup>-2</sup> s <sup>-1</sup> )	R <sup>2</sup>	P
Hartog	1.04 $\pm$ 0.39	5.50 $\pm$ 1.14	0.22	0.015
Kukri	1.06 $\pm$ 0.34	4.98 $\pm$ 0.95	0.31	0.005
Drysdale	1.14 $\pm$ 0.47	6.11 $\pm$ 1.27	0.22	0.025
Espada	1.22 $\pm$ 0.31	4.38 $\pm$ 0.85	0.42	0.001
Sonora 64	1.53 $\pm$ 0.22	1.65 $\pm$ 0.62	0.72	< 0.0001
Mace	1.57 $\pm$ 0.29	5.17 $\pm$ 0.83	0.56	< 0.0001
Downey	1.59 $\pm$ 0.24	0.46 $\pm$ 0.73	0.71	< 0.0001
Gladius	1.66 $\pm$ 0.34	4.19 $\pm$ 0.96	0.51	< 0.0001
RAC 875	1.67 $\pm$ 0.34	4.64 $\pm$ 1.00	0.49	< 0.0001
Glossy-Huguenot	1.69 $\pm$ 0.41	5.09 $\pm$ 1.24	0.42	0.001
Ciano 67	1.71 $\pm$ 0.46	1.91 $\pm$ 1.35	0.41	0.001
Emu Rock	1.75 $\pm$ 0.24	4.24 $\pm$ 0.65	0.72	< 0.0001
Wyalkatchem (Batch 01)	1.87 $\pm$ 0.28	1.85 $\pm$ 0.78	0.69	< 0.0001
Wyalkatchem (Batch 02)	1.56 $\pm$ 0.29	5.00 $\pm$ 0.82	0.55	< 0.0001
Yecora 70	1.93 $\pm$ 0.44	1.65 $\pm$ 1.32	0.49	0.0003
Janz	2.24 $\pm$ 0.53	0.62 $\pm$ 1.64	0.51	0.001
LongReach-Envoy	2.46 $\pm$ 0.48	2.37 $\pm$ 1.41	0.52	< 0.0001
Glennson 81	2.85 $\pm$ 0.35	0.37 $\pm$ 1.03	0.77	< 0.0001
Excalibur	3.05 $\pm$ 0.48	0.40 $\pm$ 1.40	0.67	< 0.0001
Einkorn	3.05 $\pm$ 0.38	0.70 $\pm$ 1.15	0.78	< 0.0001
Magenta	3.08 $\pm$ 0.42	-0.45 $\pm$ 1.22	0.72	< 0.0001