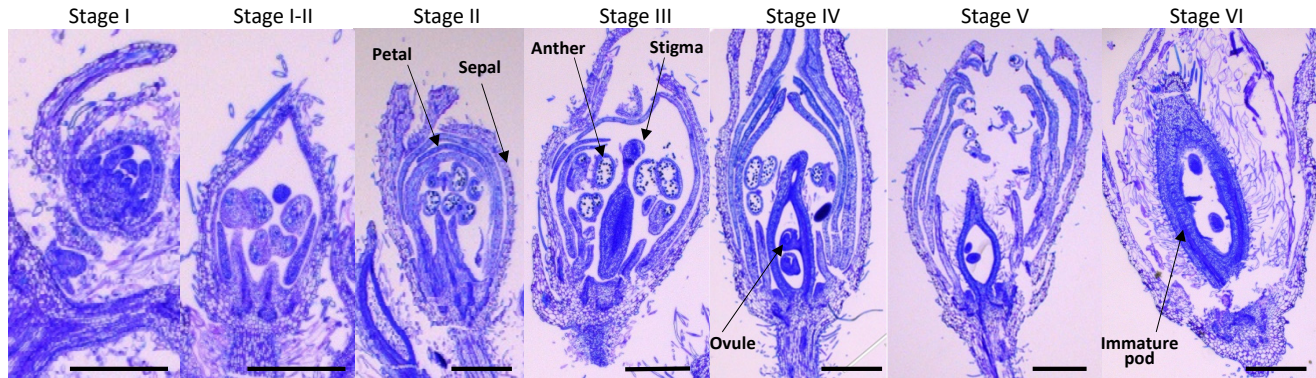


## **New Phytologist Supporting Information**

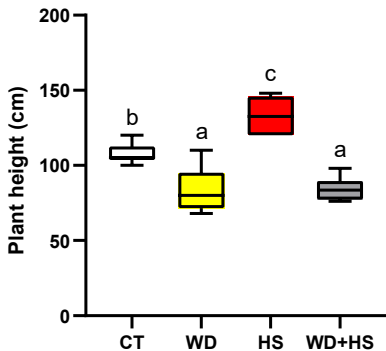
**Article title:** Differential regulation of flower transpiration during abiotic stress in annual plants.

**Authors:** Sinha, Ranjita; Zandalinas , Sara; Fichman, Yosef; Sen, Sidharth ; Zeng, Shuai; Gomez-Cadenas, Aurelio; Joshi, Trupti ; Fritschi, Felix; Mittler, Ron

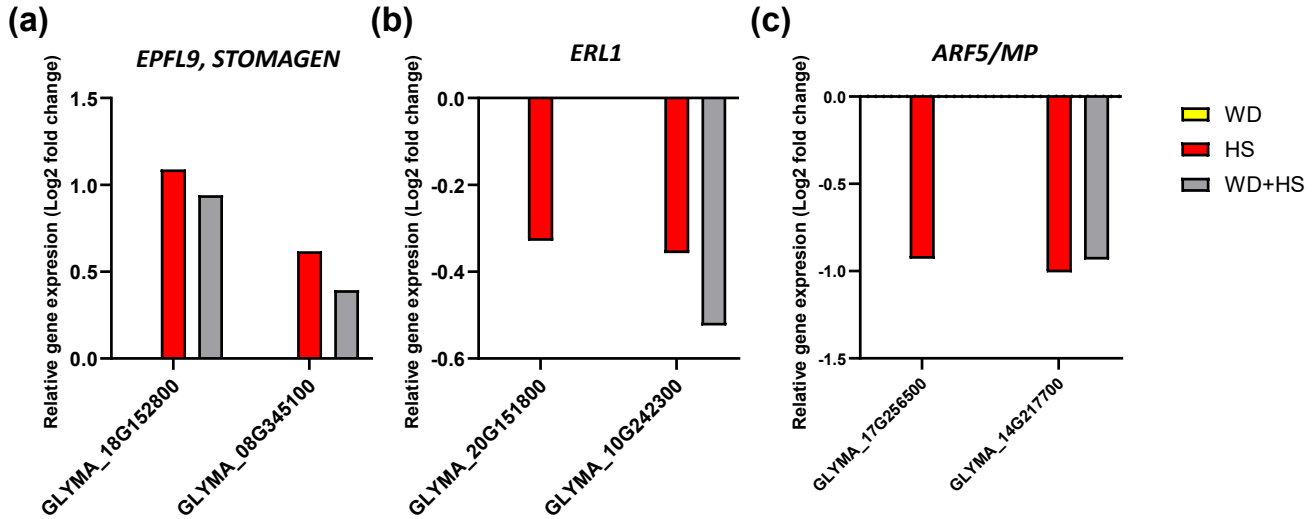
**Article acceptance date:** April 7, 2022



**Fig. S1** Cross-section light microscopy analysis of fixed and embedded soybean (*Glycine max*) flowers from plants grown under controlled growth conditions. Bar = 500  $\mu$ M.



**Fig. S2** Height of soybean (*Glycine max*) plants grown under control (CT), water deficit (WD), heat stress (HS), and WD+HS. Height measurements were taken 25 days post stress application. All experiments were conducted with 3 biological repeats, each with 15 plants as technical repeats. Results are shown as box-and-whisker plots with borders corresponding to the 25<sup>th</sup> and 75<sup>th</sup> percentiles of the data. Different letters denote significance at  $P < 0.05$  (ANOVA followed by a Tukey's post hoc test). Abbreviations: CT, control; HS, heat stress; WD, water deficit.

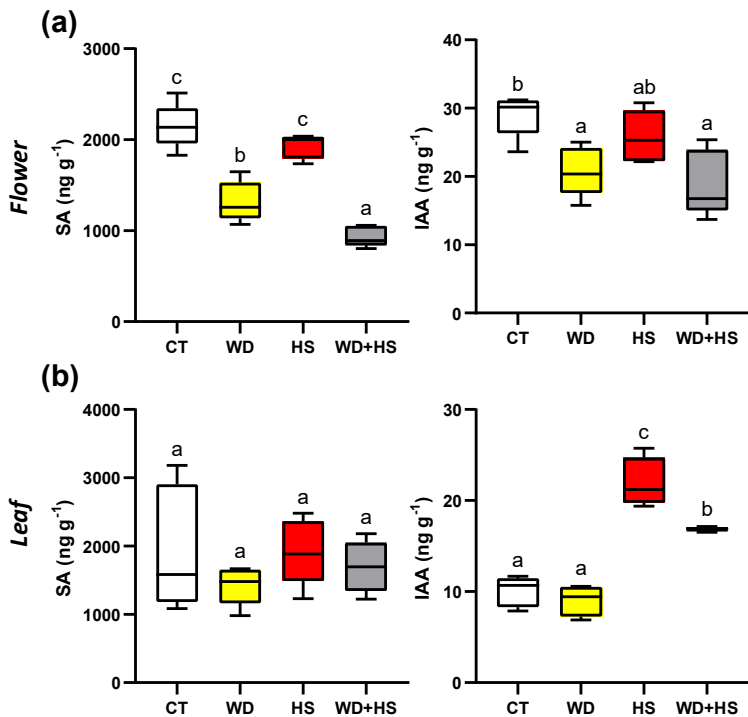


**Fig. S3** Expression of transcripts involved in stomatal development in flowers from soybean (*Glycine max*) plants grown under control (CT), water deficit (WD), heat stress (HS), or WD+HS. *STOMAGEN* (*EPFL9*) that is upregulated (a) is known to drive a higher number of stomata, while *ERECTA-LIKE1* (*ERL1*) (b) and *ARF5/MP* (c) that are downregulated, are known to suppress the number of stomata forming on leaves (Sugano et al., 2010; Zhang et al., 2014; Qi et al., 2020). Expression level is relative to CT. Expression data was obtained from the RNA-Seq analysis.

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Sugano SS, Shimada T, Imai Y, Okawa K, Tamai A, Mori M, Hara-Nishimura I. 2010. Stomagen positively regulates stomatal density in *Arabidopsis*. *Nature* 463: 241-244

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**Fig. S4** Accumulation of SA and IAA in flowers (a) and leaves (b) from soybean (*Glycine max*) plants subjected to heat stress or a combination of water deficit and heat stress. All experiments were conducted with 3 biological repeats, each with 15 plants as technical repeats. Results are shown as box-and-whisker plots with borders corresponding to the 25<sup>th</sup> and 75<sup>th</sup> percentiles of the data. Different letters denote significance at  $P < 0.05$  (ANOVA followed by a Tukey's post hoc test). Abbreviations: CT, control; HS, heat stress; WD, water deficit.

## Supplementary Table 1: List of primers used for RT-PCR

<b>Gene name</b>	<b>Forward primer</b>	<b>Reverse Primer</b>
EF1-alpha	5'-GACCTTCTTCGTTTCTCGCA-3'	5'-CGAACCTCTCAATCACACGC-3'
DREB1B;1	5'- GTAAAGATTGTTTCGTATGGGACAAG -3'	5'- ACACCTAAAATGAGCAACCGTACTA -3'
DREB1H;1	5'- ATTAGCCGCAAAAGTAAGTCTACG -3'	5'- TGTGCCACTAGTACTGTTGATCAC -3'
APX1	5'-TCACGGAGTTGTTGAGTGGT-3'	5'- CCTCAGCGTAATCAGCAAAG-3'