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## EDITED AND REVIEWED BY

Ivan A. Paponov,  
Aarhus University, Denmark

## \*CORRESPONDENCE

Ningyi Zhang

✉ ningyi.zhang@njau.edu.cn

Elias Kaiser

✉ elias.kaiser@wur.nl

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# Corrigendum: Variation of photosynthetic induction in major horticultural crops is mostly driven by differences in stomatal traits

Ningyi Zhang<sup>1\*</sup>, Sarah R. Berman<sup>1</sup>, Dominique Joubert<sup>2</sup>, Silvere Vialet-Chabrand<sup>1</sup>, Leo F. M. Marcelis<sup>1</sup> and Elias Kaiser<sup>1\*</sup>

<sup>1</sup>Horticulture and Product Physiology, Department of Plant Sciences, Wageningen University & Research, Wageningen, Netherlands, <sup>2</sup>Biometris, Department of Mathematical and Statistical Methods, Wageningen University & Research, Wageningen, Netherlands

## KEYWORDS

induction, genotypic variation, light fluctuations, modeling, photosynthesis, Rubisco activation, stomatal opening

## A Corrigendum on

### Variation of photosynthetic induction in major horticultural crops is mostly driven by differences in stomatal traits

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In the published article, there was an error in [Table 2](#) as published. Stomatal size should have been calculated as  $\pi \times \text{stomatal length} \times \text{stomatal width}/4$ , therefore, all stomatal size values reported in this table (i.e.  $SS_{ab}$  and  $SS_{ad}$ ) should have been divided by four. The corrected [Table 2](#) and its caption “Definition, unit, maximum, minimum, mean and coefficient of variation (CV) for dynamic, steady-state, anatomical and physiological traits across 19 horticultural genotypes. Maximum and minimum values are average values of 6–9 replicates” appears below.

In the published article, there was an error in [Figure 5](#) as published. Stomatal size should have been calculated as  $\pi \times \text{stomatal length} \times \text{stomatal width}/4$ , therefore, the numbers shown in [Figure 5A](#) should have been divided by four. The corrected [Figure 5](#) and its caption “Stomatal size (A;  $SS_{ab}$ ) and density (B;  $SD_{ab}$ ) at the abaxial leaf side, and theoretical maximum stomatal conductance (C;  $g_{s,max}$ ) of all 19 horticultural genotypes. Colours indicate crop species. Bars show means  $\pm$  s.e. (n = 7–9). Letters indicate significant differences (p < 0.05). Statistical test results of  $SS_{ab}$ ,  $SD_{ab}$  and  $g_{s,max}$  were based on log transformation of the data. See [Table 1](#) for full genotype names” appears below.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

In the published article, there was an error in [Supplementary Data Sheet 1](#). All numbers along the x-axis of [Figure S7A–E](#) and along the y-axis of [Figure S7E](#) (i.e. stomatal size, which should have been calculated as  $\pi \times \text{stomatal length} \times \text{stomatal width}/4$ ) in [Supplementary Data Sheet 1](#) should have been divided by four. The correct material statement appears below.

TABLE 2 Definition, unit, maximum, minimum, mean and coefficient of variation (CV) for dynamic, steady-state, anatomical and physiological traits across 19 horticultural genotypes.

Trait	Definition	Unit	Max. (genotype)	Min. (genotype)	Mean	CV (%)
<b>Dynamic traits</b>						
T <sub>20</sub>	Time to reach 20% of full A induction	min	1.2 (CHB)	0.2 (RAP)	0.5	55
T <sub>50</sub>	Time to reach 50% of full A induction	min	7.6 (CHB)	0.6 (RAP)	3.4	61
T <sub>90</sub>	Time to reach 90% of full A induction	min	28.8 (LGI)	3.4 (RAP)	19.2	42
A <sub>avg,300</sub>	Average A during the first 300 s of induction	μmol m <sup>-2</sup> s <sup>-1</sup>	10.9 (TB)	4.7 (RAP)	7.7	22
g <sub>s,avg,300</sub>	Average g <sub>s</sub> during the first 300 s of induction	mol m <sup>-2</sup> s <sup>-1</sup>	0.143 (TS)	0.052 (CHB)	0.099	22
iWUE <sub>avg,300</sub>	Average intrinsic water-use efficiency during the first 300 s of induction (A <sub>avg,300</sub> /g <sub>s,avg,300</sub> )	μmol CO <sub>2</sub> (mol H <sub>2</sub> O) <sup>-1</sup>	117 (CHB)	42 (RAP)	84	21
k	Time constant for g <sub>s</sub> response to irradiance change <sup>1</sup>	min	16.2 (LGI)	7.6 (CUH)	10.8	23
Sl <sub>max</sub>	Maximum rate of g <sub>s</sub> response to irradiance change <sup>1</sup>	mmol m <sup>-2</sup> s <sup>-2</sup>	0.28 (CUH)	0.03 (CHA)	0.13	68
λ	Initial time lag of g <sub>s</sub> response to irradiance change <sup>1</sup>	min	7.4 (CUP)	0.1 (BR)	3.9	62
f	Weighting factor (between 0-1) for the fast and slow phase of V <sub>cmax</sub> induction	–	0.7 (LGA)	0.4 (CHY)	0.5	18
τ <sub>fast</sub>	Time constant for fast phase of maximum Rubisco carboxylation rate (V <sub>cmax</sub> ) induction	min	1.1 (CHA)	0.5 (LC)	0.7	22
τ <sub>slow</sub>	Time constant for slow phase of V <sub>cmax</sub> induction	min	6.5 (TM)	3.1 (RAV)	4.8	22
<b>Steady-state traits</b>						
A <sub>i</sub>	Steady-state A at low irradiance	μmol m <sup>-2</sup> s <sup>-1</sup>	2.2 (TS)	0.7 (BR)	1.9	21
A <sub>f</sub>	Steady-state A at high irradiance	μmol m <sup>-2</sup> s <sup>-1</sup>	20.8 (TM)	5.7 (RAP)	14.4	30
ΔA	Difference between A <sub>f</sub> and A <sub>i</sub>	μmol m <sup>-2</sup> s <sup>-1</sup>	18.8 (TM)	4.5 (RAP)	12.5	33
V <sub>mi</sub>	V <sub>cmax</sub> at the start of photosynthetic induction	μmol m <sup>-2</sup> s <sup>-1</sup>	8.6 (CUP)	4.9 (BR)	7.0	16
V <sub>mf</sub>	V <sub>cmax</sub> 15 min after start of photosynthetic induction	μmol m <sup>-2</sup> s <sup>-1</sup>	65.9 (TB)	20.6 (RAP)	49.9	29
g <sub>s,i</sub>	Steady-state g <sub>s</sub> at low irradiance	mol m <sup>-2</sup> s <sup>-1</sup>	0.12 (RRN)	0.05 (CHB)	0.09	19
g <sub>s,f</sub>	Steady-state g <sub>s</sub> at high irradiance	mol m <sup>-2</sup> s <sup>-1</sup>	0.51 (TS)	0.10 (RAV)	0.25	46
<b>Leaf anatomical traits and pigments</b>						
SD <sub>ab</sub>	Stomatal density at abaxial leaf side	mm <sup>-2</sup>	340 (CUP)	40 (LGA)	124	78
SD <sub>ad</sub>	Stomatal density at adaxial leaf side	mm <sup>-2</sup>	267 (CUH)	0 (RAP, RAV, RRN) <sup>2</sup>	67	133
SS <sub>ab</sub>	Stomatal size at abaxial leaf side	μm <sup>2</sup>	1411 (CHB)	210 (CUP)	681	57
SS <sub>ad</sub>	Stomatal size at adaxial leaf side	μm <sup>2</sup>	1325 (CHR)	0 (RAP, RAV, RRN) <sup>2</sup>	540	81
g <sub>s,max</sub>	Theoretical maximum g <sub>s</sub> , if all stomates were to open to their maximum extent	mol m <sup>-2</sup> s <sup>-1</sup>	5.0 (CUP)	1.3 (LGI)	2.5	50
Leaf <sub>chl</sub>	Leaf chlorophyll content <sup>3</sup>	mg m <sup>-2</sup>	222.0 (TM)	78.3 (LGA)	151.6	29
Chl a:b	Ratio of chlorophyll a to chlorophyll b	–	3.1 (LGA)	2.3 (BR)	2.7	7
Leaf <sub>caro</sub>	Leaf carotenoid content	mg m <sup>-2</sup>	28.4 (TM)	11.8 (BR)	19.1	25
Leaf <sub>abs</sub>	Leaf light absorbance <sup>4</sup>	–	0.89 (BR)	0.73 (LGA)	0.82	5

Maximum and minimum values are average values of 6-9 replicates.

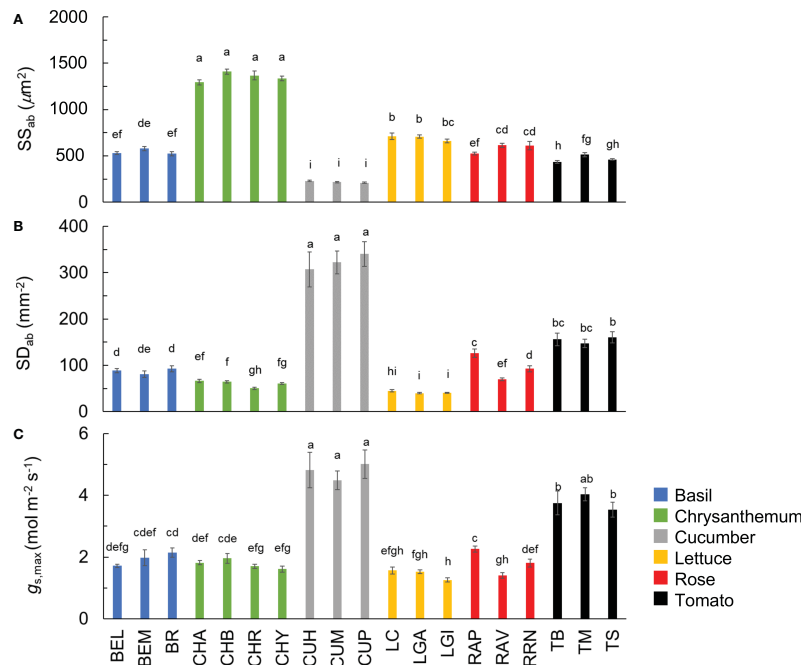


FIGURE 5

Stomatal size (A;  $SS_{ab}$ ) and density (B;  $SD_{ab}$ ) at the abaxial leaf side, and theoretical maximum stomatal conductance (C;  $g_{s,max}$ ) of all 19 horticultural genotypes. Colours indicate crop species. Bars show means  $\pm$  s.e. ( $n = 7-9$ ). Letters indicate significant differences ( $p < 0.05$ ). Statistical test results of  $SS_{ab}$ ,  $SD_{ab}$  and  $g_{s,max}$  were based on log transformation of the data. See Table 1 for full genotype names.

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