Correction to: NaCl-induced stress: physiological responses of six halophyte species in in vitro and in vivo culture

Yuping Xiong^{1,2} · Hanzhi Liang^{1,2} · Haifeng Yan³ · Beiyi Guo^{1,2} · Meiyun Niu^{1,2} · Shuangyan Chen¹ · Shuguang Jian¹ · Hai Ren¹ · Xinhua Zhang¹ · Yuan Li¹ · Songjun Zeng¹ · Kunlin Wu¹ · Feng Zheng¹ · Jaime A. Teixeira da Silva⁴ · Guohua Ma¹

Published online: 19 December 2019
© Springer Nature B.V. 2019

Correction to:
Plant Cell, Tissue and Organ Culture (PCTOC)
(2019) 139:531–546
<https://doi.org/10.1007/s11240-019-01697-1>

In the original article, some of the values in the fifth column of Table 2 and in the fifth and eighth columns of Table 4 are incorrect. The corrected values are in bold typeface in both tables below.

Furthermore, the first sentence in the section **Salt tolerance analysis** (in **Results**) should read as follows:

The membership function analysis of the in vitro assay ranked salt tolerance from highly to weakly tolerant: *C. inerme* = *S. sericea* > *A. bettzickiana* > *P. nodiflora* > *D. cambodiana* > *V. rotundifolia*.

The original article can be found online at <https://doi.org/10.1007/s11240-019-01697-1>.

✉ Guohua Ma
magh@scib.ac.cn

Yuping Xiong
775133271@qq.com

Hanzhi Liang
lianghanzhi123@163.com

Haifeng Yan
gtsyhf@163.com

Beiyi Guo
294471191@qq.com

Meiyun Niu
niumeiyun@scbg.ac.cn

Shuangyan Chen
2831716403@qq.com

Shuguang Jian
jiansg@scbg.ac.cn

Hai Ren
renhai@scbg.ac.cn

Xinhua Zhang
zhangxinhua@scbg.ac.cn

Yuan Li
liyuan@scbg.ac.cn

Songjun Zeng
zengsongjun@scbg.ac.cn

Kunlin Wu
wk18@scbg.ac.cn

Feng Zheng
zhengfeng@scbg.ac.cn

Jaime A. Teixeira da Silva
jaimetex@yahoo.com

¹ Guangdong Provincial Key Laboratory of Applied Botany, South China Botanical Garden, The Chinese Academy of Sciences, Guangzhou 510650, China

² University of Chinese Academy of Sciences, Beijing 100039, China

³ Cash Crop Institute of Guangxi Academy of Agricultural Sciences, Nanning 30007, China

⁴ P.O. Box 7, Miki-cho Post Office, Ikenobe 3011-2, Miki-cho, Kagawa-ken 761-0799, Japan

Table 2 Analysis of six halophytic species growth in salt stress treatments (0, 20, 100, 200 and 400 mM NaCl) in in vitro assay

Species	NaCl concentration (mM)	RP (%) (% inhibition)*	PH (cm) (% inhibition)*	RL (cm) (% inhibition)*	FW (g/plant) (% inhibition)*
<i>C. inerme</i>	0	97.78 ± 2.22 ^{ab}	7.82 ± 1.00 ^a	3.98 ± 0.57 ^a	0.12 ± 0.01 ^{bc}
	20	100.00 ± 0.00 ^a	6.50 ± 0.70 ^a	3.34 ± 0.37 ^a	0.12 ± 0.01 ^{bc}
	100	94.45 ± 2.22 ^b	6.92 ± 0.51 ^a	2.40 ± 0.15 ^b	0.14 ± 0.00 ^{ab}
	200	97.78 ± 1.11 ^{ab} (0.00)*	5.60 ± 1.50 ^a (28.39)*	1.58 ± 0.07 ^b (60.30)*	0.17 ± 0.03 ^a (− 45.28)*
	400	0.00 ± 0.00 ^c	1.42 ± 0.12 ^b	0.00 ± 0.00^c	0.08 ± 0.00 ^c
<i>V. rotundifolia</i>	0	78.89 ± 4.84 ^a	10.38 ± 0.65 ^a	5.20 ± 0.26 ^a	0.09 ± 0.00 ^{ab}
	20	75.56 ± 4.44 ^a	7.62 ± 0.67 ^b	3.40 ± 0.23 ^b	0.13 ± 0.02 ^{ab}
	100	4.33 ± 2.96 ^b	1.62 ± 0.19 ^c	2.18 ± 0.11 ^c	0.07 ± 0.00 ^b
	200	0.00 ± 0.00 ^b (100.00)*	1.26 ± 0.20 ^c (87.86)*	0.00 ± 0.00^d (100.00)*	0.07 ± 0.01 ^b (20.34)*
	400	—	—	—	—
<i>P. nodiflora</i>	0	100.00 ± 0.00 ^a	7.72 ± 1.02 ^a	4.80 ± 0.74 ^a	0.20 ± 0.03 ^a
	20	100.00 ± 0.00 ^a	7.50 ± 0.25 ^{ab}	4.00 ± 0.35 ^{ab}	0.16 ± 0.00 ^{ab}
	100	100.00 ± 0.00 ^a	6.62 ± 0.33 ^{ab}	4.84 ± 0.35 ^a	0.19 ± 0.02 ^{ab}
	200	100.00 ± 0.00 ^a (0.00)*	5.90 ± 0.30 ^b (23.58)*	3.08 ± 0.34 ^b (35.83)*	0.20 ± 0.03 ^a (− 2.40)*
	400	12.22 ± 6.76 ^b	1.90 ± 0.20 ^c	0.77 ± 0.15 ^c	0.12 ± 0.01 ^b
<i>A. bettzickiana</i>	0	100.00 ± 0.00 ^a	5.08 ± 0.19 ^a	2.40 ± 0.24 ^b	0.59 ± 0.02 ^a
	20	100.00 ± 0.00 ^a	4.88 ± 0.18 ^a	3.50 ± 0.40 ^b	0.38 ± 0.04 ^b
	100	100.00 ± 0.00 ^a	4.84 ± 0.21 ^a	5.94 ± 0.90 ^a	0.44 ± 0.04 ^b
	200	98.89 ± 1.11 ^a (1.11)*	3.36 ± 0.06 ^b (33.86)*	6.54 ± 0.67 ^a (− 172.50)*	0.38 ± 0.05 ^b (34.96)*
	400	16.67 ± 3.33 ^b	1.40 ± 0.17 ^c	0.38 ± 0.04^c	0.13 ± 0.02 ^c
<i>D. cambodiana</i>	0	93.33 ± 3.85 ^a	2.46 ± 0.32 ^a	6.86 ± 0.46 ^a	0.32 ± 0.02 ^a
	20	90.00 ± 1.92 ^a	1.76 ± 0.20 ^{bc}	5.68 ± 0.81 ^a	0.26 ± 0.03 ^{ab}
	100	64.44 ± 5.88 ^b	2.14 ± 0.14 ^{ab}	3.32 ± 0.12 ^b	0.34 ± 0.04 ^a
	200	28.89 ± 1.11 ^c (69.05)*	1.30 ± 0.09 ^c (47.15)*	0.88 ± 0.12 ^c (87.17)*	0.22 ± 0.02 ^{bc} (31.69)*
	400	0.00 ± 0.00 ^d	1.26 ± 0.07 ^c	0.00 ± 0.00^c	0.16 ± 0.01 ^c
<i>S. sericea</i>	0	65.83 ± 8.09 ^a	1.82 ± 0.19 ^{ab}	2.88 ± 0.24 ^a	0.24 ± 0.02 ^c
	20	75.56 ± 5.88 ^a	1.68 ± 0.17 ^{ab}	2.08 ± 0.17 ^b	0.21 ± 0.01 ^c
	100	73.61 ± 7.73 ^a	2.10 ± 0.39 ^{ab}	2.90 ± 0.34 ^a	0.43 ± 0.02 ^a
	200	63.89 ± 2.78 ^a (2.95)*	1.16 ± 0.07 ^{bc} (36.26)*	1.22 ± 0.08^c (57.64)*	0.39 ± 0.06 ^{ab} (− 59.65)*
	400	0.00 ± 0.00 ^b	0.92 ± 0.08 ^c	0.00 ± 0.00^d	0.31 ± 0.02 ^{bc}

Different letters indicate statistically significant differences ($p \leq 0.05$; Duncan's multiple range test) within each concentration. "—" Indicates that no plants survived the treatment. *Growth inhibition was calculated as follows: % inhibition = $[1 - (\text{salt treatment}/\text{control})] \times 100\%$

Table 4 Membership function analysis value of six halophytic plant species' responses in in vitro and in vivo assays

Test	Species	RP	PH	RL	FW	VI score	Mean
In vitro	<i>C. inerme</i>	0.00	0.07	0.85	0.15		0.27
	<i>V. rotundifolia</i>	1.00	1.00	1.00	0.85		0.96
	<i>P. nodiflora</i>	0.00	0.00	0.76	0.61		0.34
	<i>A. bettzickiana</i>	0.01	0.16	0.00	1.00		0.29
	<i>D. cambodiana</i>	0.69	0.37	0.95	0.97		0.74
	<i>S. sericea</i>	0.03	0.20	0.84	0.00		0.27
In vivo	<i>C. inerme</i>		0.41	0.46	0.06	0.00	0.23
	<i>V. rotundifolia</i>		0.07	0.32	0.72	1.00	0.53
	<i>P. nodiflora</i>		0.32	0.20	0.85	0.50	0.47
	<i>A. bettzickiana</i>		1.00	0.00	1.00	0.00	0.50
	<i>D. cambodiana</i>		0.28	1.00	0.50	1.00	0.70
	<i>S. sericea</i>		0.00	−0.13	0.00	0.00	−0.03

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.