10.1071/FP17026_AC

Supplementary Material: *Functional Plant Biology*, 2017, 44(8), 761–773.

Supplementary Material

Multiple mechanisms mediate growth and survival in young seedlings of two populations of the halophyte *Atriplex halimus* (L.) subjected to long single-step salinity treatments

Faiza Hamdani[A,B,C], *Arezki Derridj*[A] *and Hilary J. Rogers*[C,D]

[A]Faculté des Sciences Biologiques et des Sciences Agronomiques, Université Mouloud Mammeri de Tizi-Ouzou, 15000 Tizi-Ouzou, Algeria.

[B]Département des Sciences Agronomiques, Faculté des Sciences de la Nature et de la Vie, Université Kasdi Merbah Ouargla, 30000 Ouargla, Algeria.

[C]School of Biosciences, Cardiff University, Main Building, Park Place, Cardiff, CF10 3AT, UK.

[D]Corresponding author. Email: rogershj@cf.ac.uk

Table S1. Nutrient solution, Macroelements (Morard 1995)

	K	Ca	Mg	Na	N	P	S	Cl
Macroelements	K^+	Ca^{++}	Mg^{++}	Na^+	$NO3^-$	$H2PO4^-$	$SO4^{--}$	Cl^-
Concentration (mM)	7	5	1.5	-	15	2	1.5	-

Table S2. Nutrient solution, Microelements (Morard 1995)

Microelements	Fe	Mn	Cu	Zn	B	Mo
Concentration (mM)	0.089	0.008	0.0009	0.001	0.024	0.0001

Table S3. Electrical Conductivity of different treatments

Treatment	**T0**	**T1**	**T2**	**T3**	**T4**
NaCl concentration (mM)	**0**	**34**	**85**	**171**	**256**
Electrical Conductivity (ms) at 25°C	**2.34**	**5.78**	**10.93**	**18.75**	**25**

Table S4. PCR primers used for real-time PCR

Oligo Name	Sequence (5´-3´)
CMOatriplexF	CGAACCTGCCTTCTATGCTC
CMOatriplexR	AAGGGCATACGAAACAYGAC
Na-HF	GATGTGGGAAACGGAAACC
Na-HR	CAAATTGTTGGTGCTTTGTT
Mt 18S-F	TGACGGAGAATTAGGGTTCG
Mt 18S-R	CCTCCAATGGATCCTCGTTA

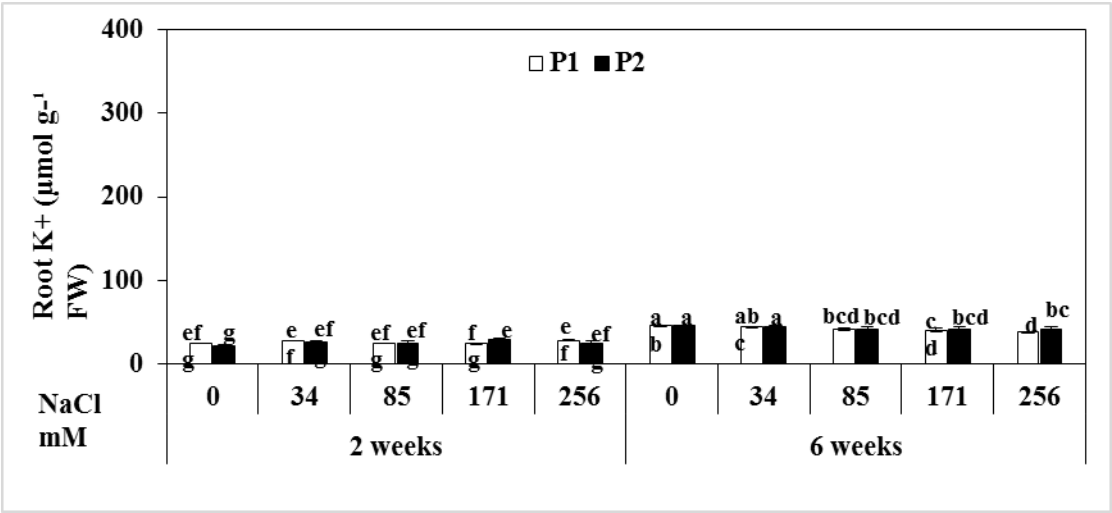


Fig. S1. K+ accumulation in roots of *Atriplex halimus* seedlings from Steppe (P1) and coastal (P2) regions over time and across salt stress treatments (mean ± s.d.; $n = 3$; different letters above the bars indicate significant differences based on a Tukey's test ($P < 0.05$) across all samples.

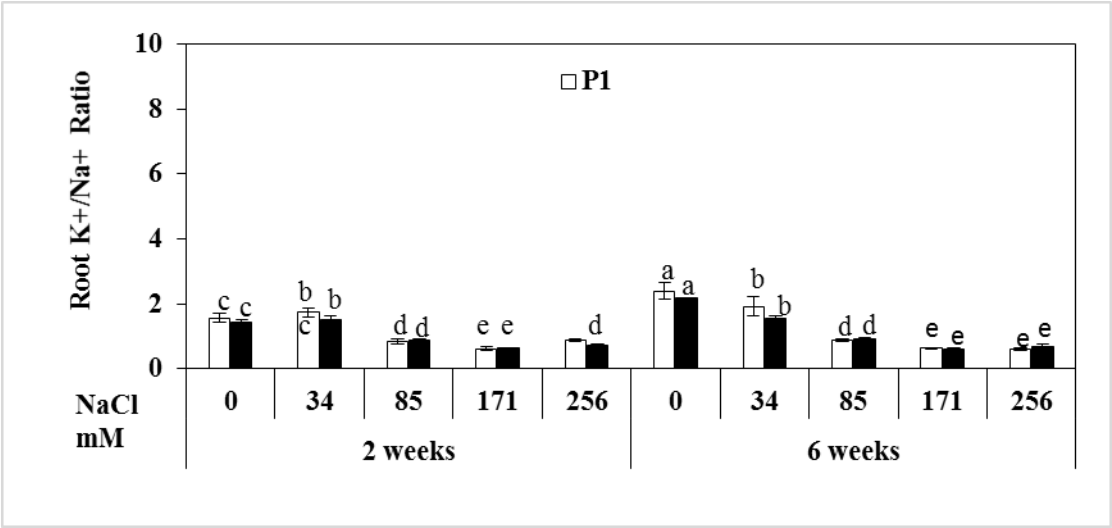


Fig. S2. K+/Na+ ratio in roots of *Atriplex halimus* seedlings from Steppe (P1) and coastal (P2) regions. Over time and across salt stress treatments (mean ± s.d.; $n = 3$; different letters above the bars indicate significant differences based on a Tukey's test ($P < 0.05$) across all samples.

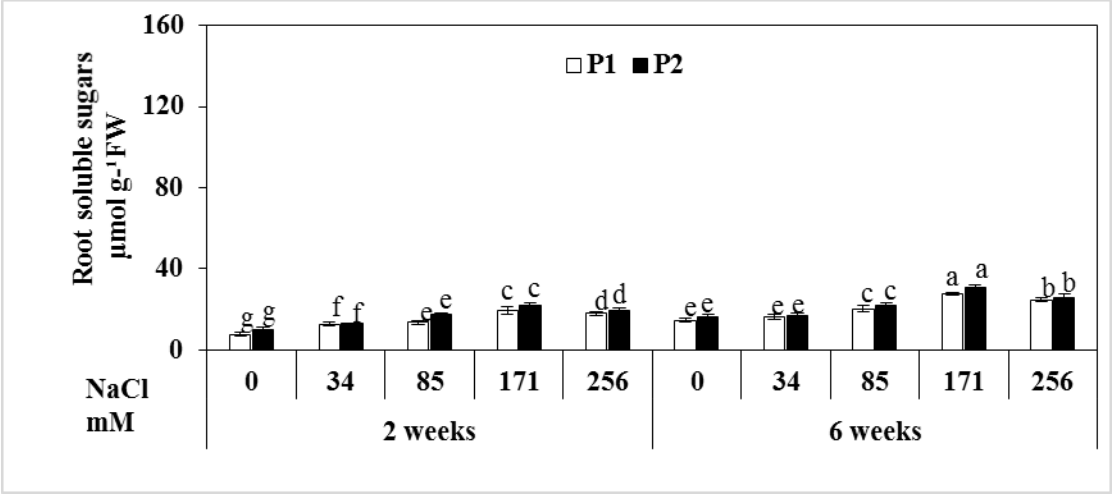


Fig. S3. Soluble sugar concentration in roots of *Atriplex halimus* seedlings from Steppe (P1) and coastal (P2) regions over time and across salt stress treatments (mean ± s.d.; $n = 3$; different letters above the bars indicate significant differences based on a Tukey's test ($P < 0.05$) across all samples.

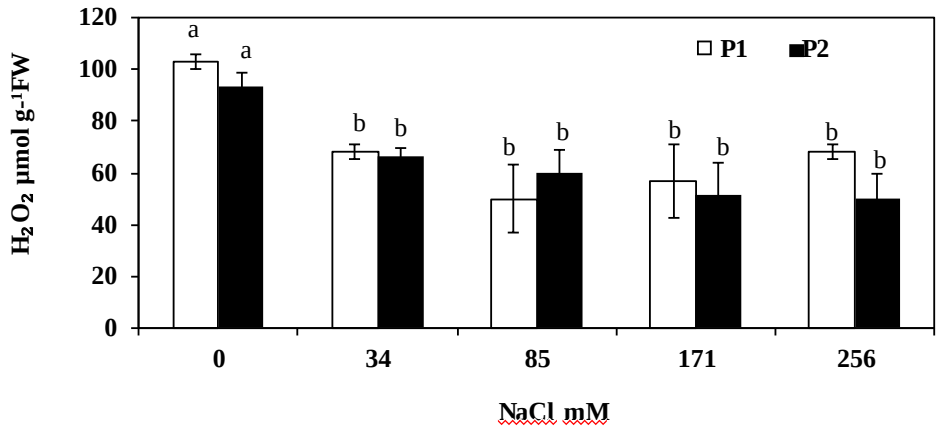
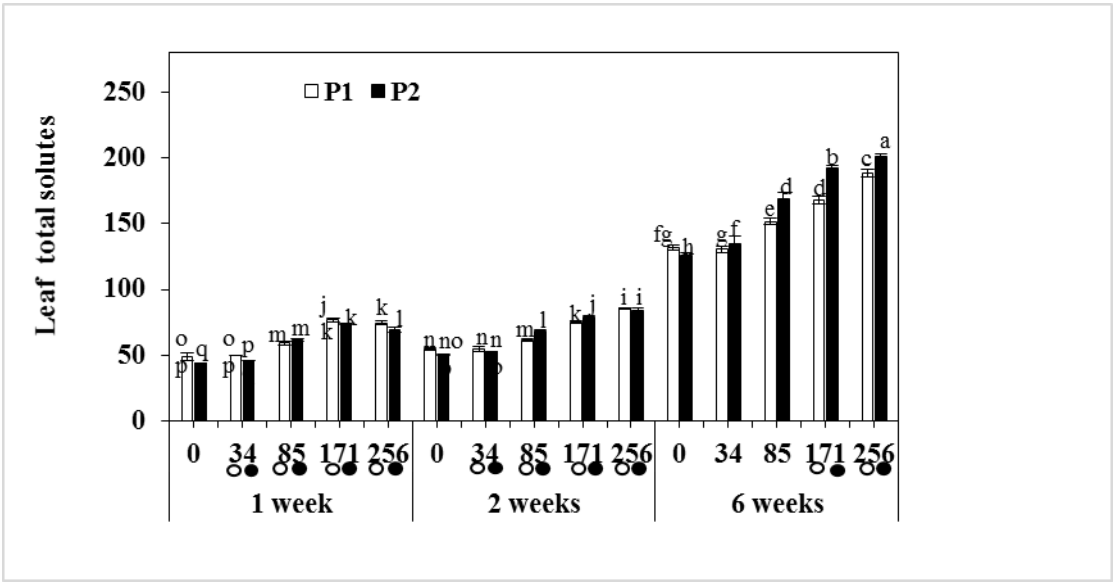
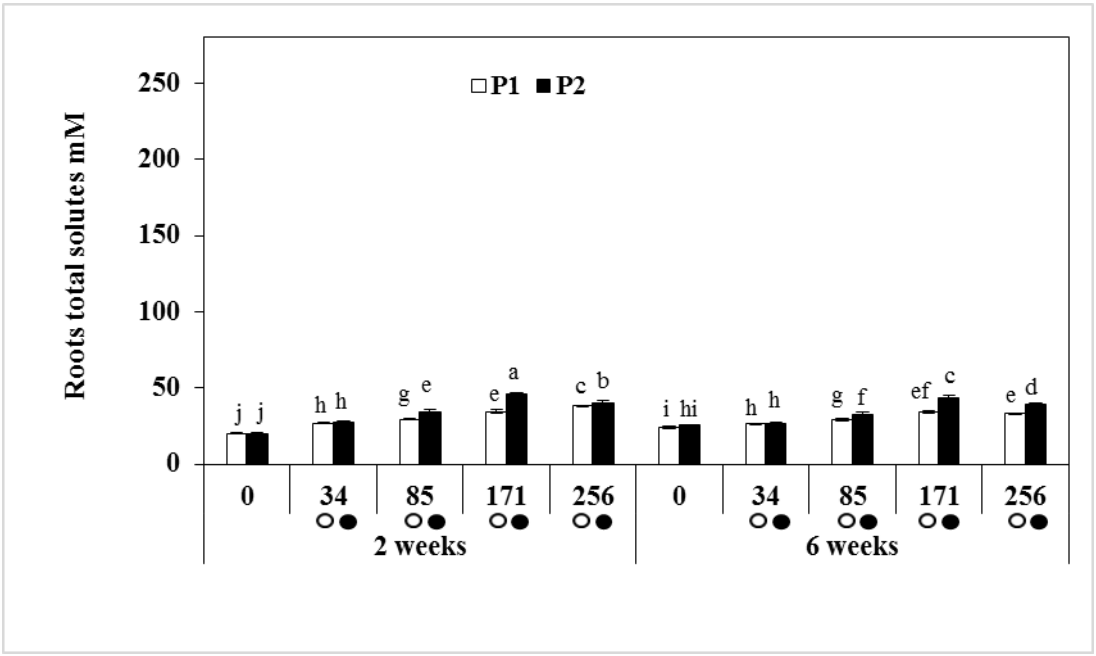


Fig. S4. H_2O_2 concentration in leaves of *Atriplex halimus* seedlings from Steppe (P1) and coastal (P2) regions after 6 weeks of salt stress (mean ± s.d.; $n = 3$; different letters above the bars indicate significant differences based on a Tukey's test ($P < 0.05$) across all samples.



(A)



(B)

Fig. S5. Total internal solutes (expressed in mM) in leaves (A) and roots (B) of *Atriplex halimus* seedlings from Steppe (P1) and coastal (P2) regions over time against total external solutes comprising NaCl (0, 34, 85, 171, 256 mM) and total nutrient solutes of 32.1 mM (mean ± s.d.; $n = 3$; different letters above the bars indicate significant differences based on a Newman- Keuls test ($P < 0.05$) across all samples. Open or closed circles indicate that the internal solute concentration is below the external concentration for P1 and P2 respectively.