10.1071/FP13158_AC

Supplementary Material: *Functional Plant Biology*, 2014, 41(4), 379–390.

Supplementary Material

Reliability of ion accumulation and growth components for selecting salt tolerant lines in large populations of rice

Tanveer Ul Haq[A,D,F], *Javaid Akhtar*[B], *Katherine A. Steele*[C], *Rana Munns*[D,E] *and John Gorham*[C]

[A]College of Agriculture, PO Box 79, Dera Ghazi Khan 32200, Pakistan.

[B]Institute of Soil and Environmental Sciences, University of Agriculture, Faisalabad 38040, Pakistan.

[C]College of Natural Sciences, Bangor University, Deiniol Road, Bangor, Gwynedd, Wales LL57 2UW, UK.

[D]School of Plant Biology, University of Western Australia, Crawley, WA 6009, Australia.

[E]CSIRO Plant Industry, GPO Box 1600, Canberra, ACT 2601, Australia.

[F]Corresponding author. Email: drtanveer@uaf.edu.pk

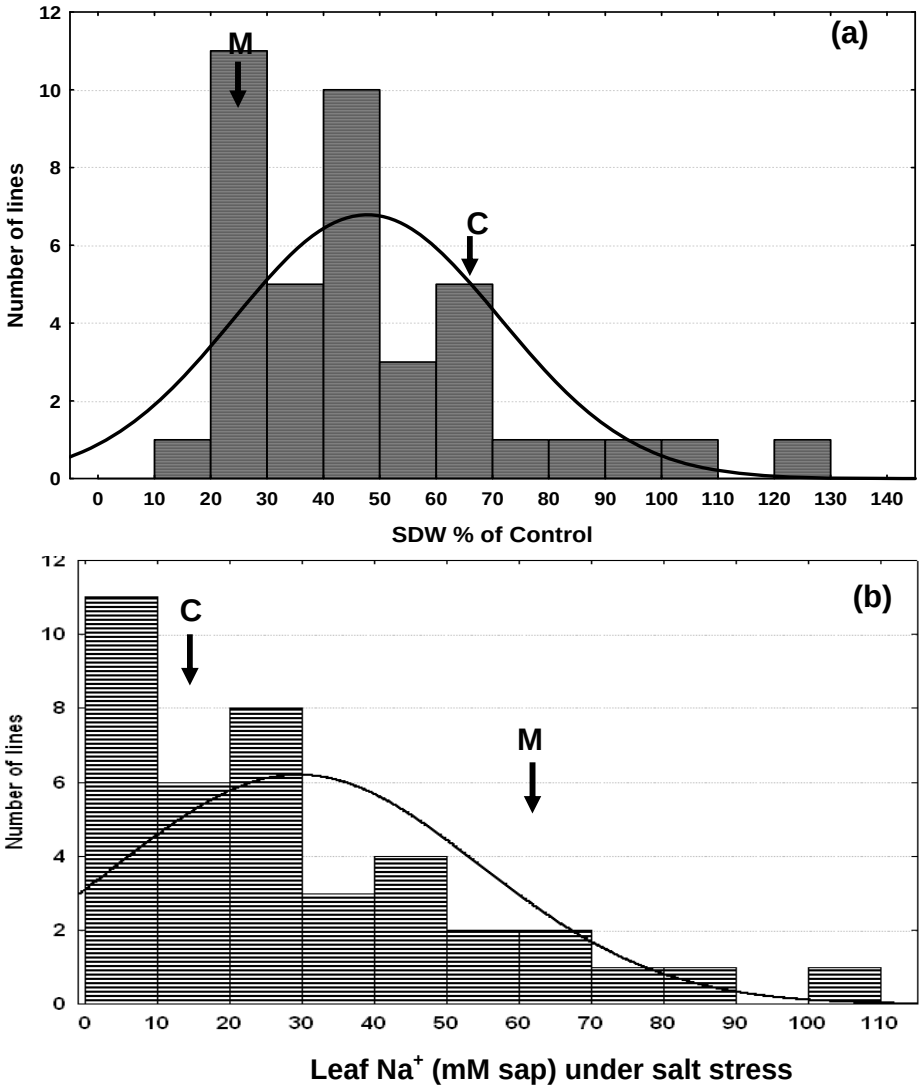

Fig. 1. (a) Frequency distribution for shoot dry weight and (b) leaf blade sap Na^+ under salt stress (100 mM NaCl) in RILs population (n = 32) in Study-1. The arrows indicate mean values for CO39 and Moroberekan.

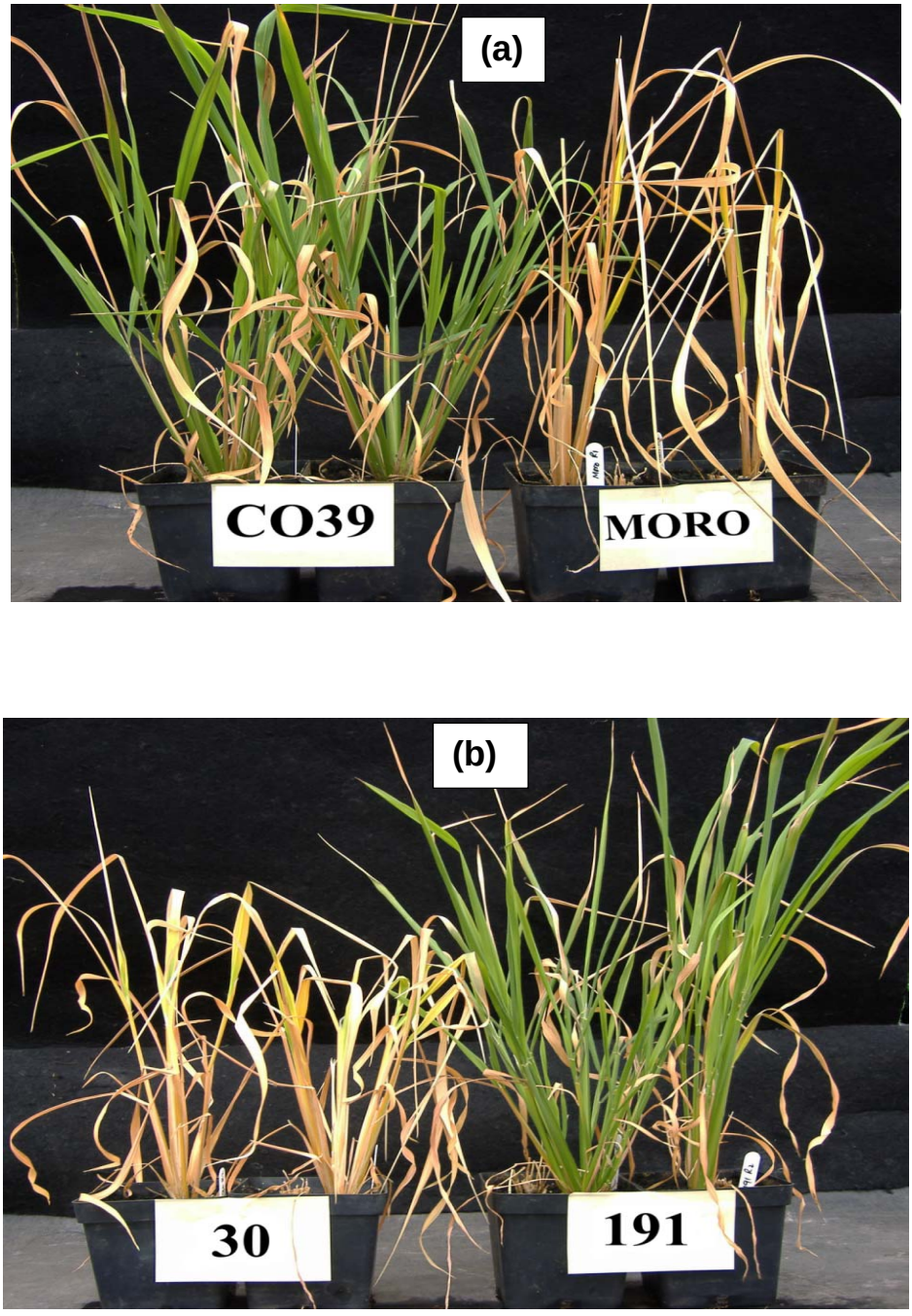

Fig. 2. Differential salinity leaf injury in (a) parent varieties (CO39 & Moroberekan) and (b) randomly selected two RILs after 42 days growth under salt stress from Study-2.

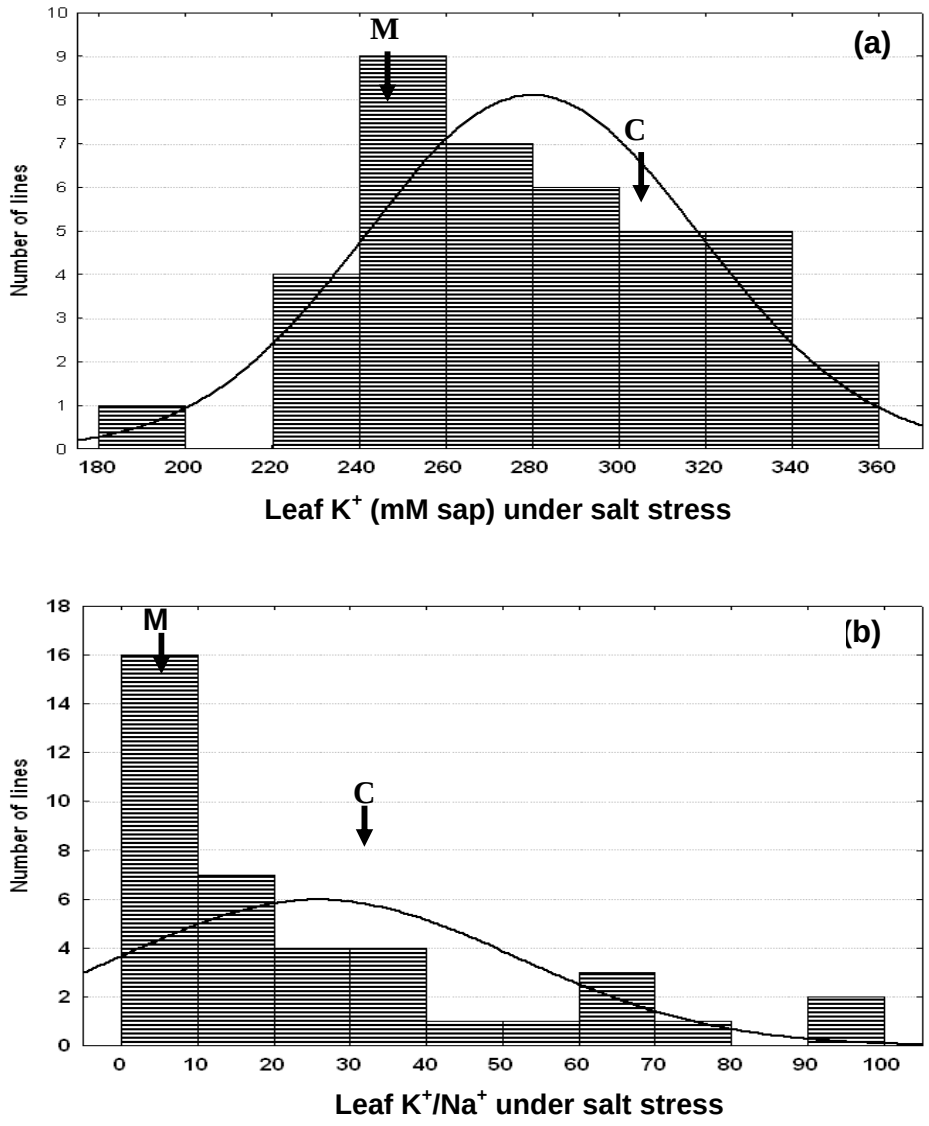

Fig. 3. (a) Frequency distribution for leaf blade sap K^+ and (b) leaf blade sap K^+/Na^+ in RILs population (n = 32) under salt stress (100 mM NaCl) in Study-1. The arrows indicate mean values for CO39 and Moroberekan.

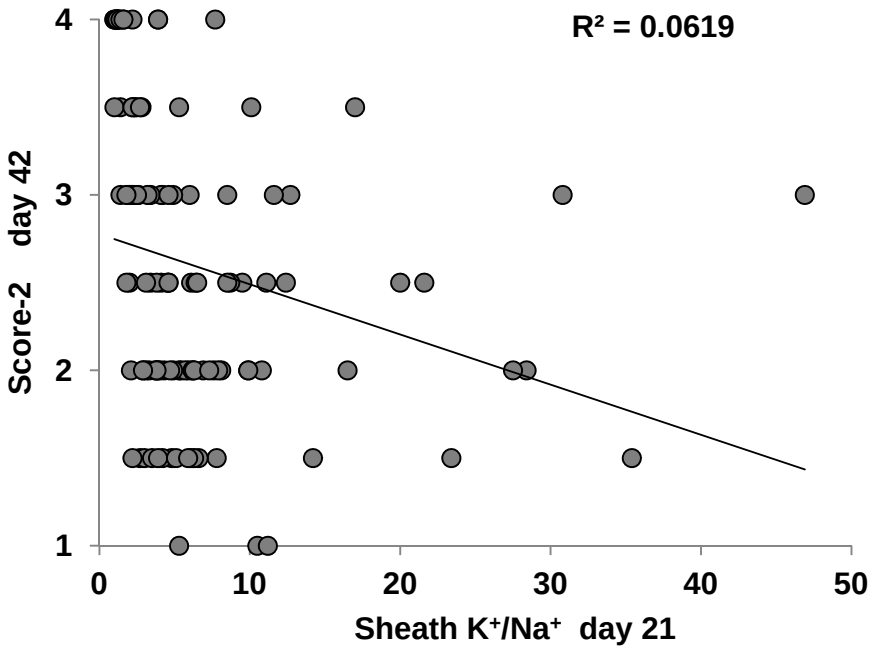

Fig. 4. Relationship of leaf injury Score-2 with K^+/Na^+ in sheath sap on day 21/42 of salt stress in Study-2.

Table S1. Mean squares of different traits studied in CO39×Moroborekan RILs (*n* = 32) on day 21 (ion) or day 42 (growth) in saline and non-saline conditions (Study–1)

*, **, means were significant at ≤ 0.05 and 0.01 levels, respectively; NS, means difference was non-significant

SOV	D.F	Leaf Na^+	Leaf K^+	K^+/Na^+	SFW	SDW	Tillers $Plant^{-1}$	SW g g^{-1}dw.
Salinity	1	43610**	2994**	2118399**	124715**	2835**	242**	128.8**
RILs	33	1089**	6307**	5293**	1409**	62**	72**	0.9**
Salinity×RILs	67	1080**	1655**	1523**	1204**	44**	22**	0.2NS

Table S2. (a) Correlation matrix for ion accumulation in the leaf sheath sap on day 7/21, growth traits on day 42 and injury scores on day 21 (Score-1) or day 42 (Score-2) under salt stress (100 mM NaCl) (Study–2)

*, **, means were significant at ≤ 0.05 and 0.01 levels, respectively; NS, means difference was non-significant; SNa7, Sheath Na^+ concentration on day 7; SK7, Sheath K^+ concentration on day 7; SK/Na7, Sheath K^+/Na^+ ratio on day 7; SNa21, Sheath Na^+ concentration on day 21; SK21, Sheath K^+ concentration on day 21; SK/Na21, Sheath K^+/Na^+ ratio on day 21

	SNa7	SK7	SK/Na7	SNa21	SK21	SK/Na21
SNa7	1.0					
SK7	–0.31**	1.0				
SK/Na7	–0.71**	0.38**	1.0			
SNa21	0.64**	–0.28**	–0.55**	1.0		
SK21	–0.50**	0.34**	0.36**	–0.75**	1.0	
SK/Na21	–0.53**	0.30**	0.77**	–0.68**	0.52**	1.0
Tillers	–0.29**	0.28**	0.28**	–0.56**	0.64**	0.35**
SPAD	–0.31**	0.07 NS	0.29**	–0.65**	0.49**	0.32**
SFW	–0.33**	0.19 NS	0.17 NS	–0.59**	0.60**	0.38**
SDW	–0.32**	0.25*	0.27**	–0.53**	0.54**	0.47**
SW g g^{-1}	–0.19 NS	–0.02 NS	–0.08 NS	–0.39**	0.37**	0.01 NS
Score-1	0.14 NS	0.20*	–0.04 NS	0.26**	–0.27**	0.01 NS
Score-2	0.31**	–0.13 NS	–0.25**	0.66**	–0.51**	–0.28**

Table S2. (b) Correlation matrix for ion accumulation in the leaf blade sap versus the leaf sheath sap on day 7/21, under salt stress (100 mM NaCl) (Study–2)

*, **, means were significant at ≤ 0.05 and 0.01 levels, respectively; NS, means difference was non-significant; LK7, Leaf K^+ concentration on day 7; LK/Na7, Leaf K^+/Na^+ ratio on day 7; L Na21, Leaf Na^+ concentration on day 21; LK21, Leaf K^+ concentration on day 21; LK/Na21, Leaf K^+/Na^+ ratio on day 21

	LNa7	**LK7**	**LK/Na7**	**LNa21**	**LK21**	**LK/Na21**	**SNa7**	**SK7**	**SK/Na7**	**SNa21**	**SK21**
LK 7	–0.25**	1.0									
LK/Na7	–0.67**	0.40**	1.0								
LNa21	0.47**	–0.30**	–0.43**	1.0							
LK21	–0.01 NS	0.50**	0.06 NS	0.19*	1.0						
LK/Na21	–0.47**	0.27**	0.73**	–0.57**	–0.09 NS	1.0					
SNa7	0.80**	–0.19**	–0.76**	0.43**	0.09 NS	–0.57**	1.0				
SK7	–0.36**	0.65**	0.55**	–0.30**	0.29**	0.40**	–0.31**	1.0			
SK/Na7	–0.46**	0.24*	0.75**	–0.34**	–0.10 NS	0.67**	–0.71**	0.38**	1.0		
SNa21	0.57**	–0.18 NS	–0.59**	0.79**	0.24**	–0.77**	0.64**	–0.28**	–0.55**	1.0	
SK21	–0.47**	0.31**	0.47**	–0.71**	0.02 NS	0.58**	–0.50**	0.34**	0.36**	–0.75**	1.0
SK/Na21	–0.38**	0.15 NS	0.60**	–0.40**	–0.16 NS	0.78**	–0.53**	0.30**	0.77**	–0.68**	0.52**