

Additional file 6: Table S5: Comparisons of the QTL regions identified in this study for salinity tolerance at seedling stage, with previously mapped QTLs from different populations and for different growth stages

Gene/QTL name	Chr	Growth stage	Mapping population	Evaluation index of salinity tolerance	Interval/peak marker	Interval distance (cM or Mb)	PVE (%)	References*	Remarks (Novel /Same QTLs/Absent)
Q _{Na}	1	Seedling	RIL	High Na uptake				Flowers et al. 2000	Absent
Trait-based QTL	1	Seedling	RIL	Na ⁺ uptake	E12M55-3	74 cM	8.9	Koyama et al. 2001	„
Trait-based QTL	1	Seedling	RIL	K ⁺ concentration	E12M37-1	56 cM	10.6	<i>qK1.1</i> (162.9 cM)- This study	Novel
Trait-based QTL	1	Seedling	RIL	Na: K ratio	E12M57-1	74 cM	9.1		Absent
<i>Saltol</i>	1	Seedling	RIL	Na ⁺ uptake	RM140 - C1733S	between 51.6 and 65.9cM / 13.87 Mb	39.2	Bonilla et al. 2002 <i>qNa1.1</i> (162.9 cM)- This study	Novel
<i>Saltol</i>	1	Seedling	RIL	K ⁺ uptake	RM140 - C1733S	between 51.6 and 65.9cM / 13.87 Mb	43.9	<i>qK1.1</i> (162.9 cM)	„
<i>Saltol</i>	1	Seedling	RIL	Na/K ratio	RM140 - C1733S	between 51.6 and 65.9cM / 13.87 Mb	43.2	<i>qNaK-R1.1</i> (162.9 cM)	„
<i>qSDS-1</i>	1	Seedling	F _{2:3}	Seedling survival	C813 - C86	-	18.0	Lin et al. 2004 <i>qSur1.1</i> (162.9 cM)- This study	Novel
<i>qSKC-1</i>	1	Seedling	F _{2:3}	Shoot K ⁺ concentration	C1211 - S2139	-	40.1		Absent
<i>qRNTQ-1</i>	1	Seedling	F _{2:3}	Root Na ⁺ total quantity	C813 - C86	-	12.4		„
<i>OsHKT1;5 (SKC1)</i>	1	Seedling	Advanced backcross	Shoot K ⁺ concentration	K159 - K061	11.46 Mb	-	Ren et al. 2005	Absent
<i>qST1</i>	1	Seedling	RIL		Est1-2 & RZ569A	40 cM	27.8	Lee et al. 2006	„
<i>qSES1</i>	1	Seedling	F2	SES	RM8094-RM582	-	19.6	Bimpong et al. 2014 <i>qSES3.1</i> (111.0	Novel

<i>qSL1.1</i>	1	Seedling	RIL	Shoot length	id1023892-id1024836	162.6 cM	20.6	cM) Bizimana et al. 2017 <i>qSL1.2</i> (162.9 cM)- This study	Same
<i>qSL1.2</i>	1	Seedling	RIL	Shoot length	id1024972-id1025983	168.6 cM	11.8		Absent
<i>qSIS1.39</i>	1	Seedling	IL	Salt injury score (SIS)	RM3810	39.5 cM	6.4	De Leon et al. 2017 <i>qSES3.1</i> (111.0 cM)- This study	Novel
<i>qSHL1.39</i>	1	Seedling	IL	Shoot length	RM3810	39.5 cM	8.2	<i>qSL1.1</i> (25.9 cM)- This study	Same
<i>qSHL1.41</i>	1	Seedling	IL	Shoot length	RM5362	41.1 cM	6.8		-
<i>qSHL2.3</i>	2	Seedling	IL	Shoot length	RM211	3.0 cM	6.6		Absent
<i>qSES2.1</i>	2	Seedling	RIL	SES	id2004774-id2007526	64.8 cM	11.1	Bizimana et al. 2017	„
<i>qSIS2.3</i>	2	Seedling	IL	Salt injury score (SIS)	RM211	3.0 cM	6.5	<i>qSES5.2</i> (88.0 cM)- This study	„
<i>qSHL2.3</i>	2	Seedling	IL	Shoot length	RM211	3.0 cM	6.6		Absent
<i>qST3</i>	3	Seedling	RIL		RG179 - RZ596	138 cM	9.2	Lee et al. 2006 <i>qNa3.3</i> (111.0 cM); <i>qK3.2</i> (111.0 cM); <i>qNaK-R3.3</i> (109.0 cM)- This study	Novel
Q_{NaK}	4	Seedling	RIL	Na:K discrimination				Flowers et al. 2000 <i>qNaK-R2.2</i> (109.0 cM)-This study	„
Trait-based QTL	4	Seedling	RIL	K ⁺ uptake	E12M65-1	10 cM	6.8	Koyama et al. 2001	Novel
Trait-based QTL	4	Seedling	RIL	K ⁺ concentration	E15M53-2	90 cM	8.8	„	„
	4	Seedling	RIL	Na ⁺ concentration	E12M73-1; E12M75-5; E15M50-5; E12M79-1	24 cM	6.7	<i>qNa2.2</i> (109.0 cM)- This study	„

Trait-based QTL	4	Seedling	RIL	Na:K ratio	E12M65-1	14 cM	9.6	<i>qNaK-R2.2</i> (109.0 cM)-This study	„
<i>qRKC-4</i>	4	Seedling	F _{2:3}	Root K ⁺ concentration	C891 - C513	-	21.6	Lin et al. 2004	„
<i>qSDM-5</i>	5	Seedling	Double haploid lines	Seedling dry matter	RZ70-RZ225	-	17.9	Prasad et al. 2000	„
<i>qSHL-5</i>	5	Seedling	F2:4	Shoot length	RM13-RM164	106.8 cM	19.5	Ghomi et al. 2013	Absent
<i>qSHL5.04</i>	5	Seedling	IL	Shoot length	RM17749	0.4 cM	8.5	De Leon et al. 2017	„
Q _{K1}	6	Seedling	NIL	K ⁺ uptake				Flowers et al. 2000	„
<i>qSGEM-6</i>	6	Germination	Double haploid lines	Seed germination	RZ398-RG213	-	16.3	Prasad et al. 2000	„
Trait-based QTL	6	Seedling	RIL	Dry mass	E12M55-2	34 cM	9.7	Koyama et al. 2001	Novel
Trait-based QTL	6	Seedling	RIL	K ⁺ uptake	OSR19; E12M80-2	30 cM	7.6	„	Absent
Trait-based QTL	6	Seedling	RIL	Na ⁺ concentration	E12M35-2	106 cM	6.4	„	„
<i>qSDS-6</i>	6	Seedling	F _{2:3}	Seedling survival	C214 - R2549	-	17.0	Lin et al. 2004	Novel
<i>qSES6</i>	6	Seedling	F2	SES	RM586-RM253	-	39.7	<i>qSur3.2</i> (111.0 cM)- This study Bimpong et al. 2014	„
<i>qSHL-6</i>	6	Seedling	F2:4	Shoot length	RM402-RM549	87.4 cM	14.6	<i>qSES5.2</i> (88.0 cM)- This study Ghomi et al. 2013	„
<i>qSL6.1</i>	6	Seedling	RIL	Shoot length	fd13-id6004343	18.5 cM	12.1	Bizimana et al. 2017	Novel
<i>qSIS6.5</i>	6	Seedling	IL	Salt injury score (SIS)	RM253	5.4 cM	7.0	<i>qSL5.3</i> (88.0 cM)- This study De Leon et al. 2017	„

<i>qSHL6.5</i>	6	Seedling	IL	Shoot length	RM253	5.4 cM	12.6	„	Absent
<i>qSDS-7</i>	7	Seedling	F _{2:3}	Seedling survival	R2401 - L538T7	-	13.9	Lin et al. 2004	„
<i>qSNC-7</i>	7	Seedling	F _{2:3}	Shoot Na ⁺ concentration	C1057 - R2401	-	48.5	„	Absent
<i>qSNTQ-7</i>	7	Seedling	F _{2:3}	Shoot Na ⁺ total quantity	C1057 - R2401	-	16.1	„	„
<i>qRKC-7</i>	7	Seedling	F _{2:3}	Root K ⁺ concentration	C1057 - R2401	-	17.8	„	Absent
<i>qRKTQ-7</i>	7	Seedling	F _{2:3}	Root K ⁺ total quantity	C1057 - R2401	-	17.3	„	„
<i>qSIS7.12</i>	7	Seedling	IL	Salt injury score (SIS)	RM214	12.8 cM	5.9	De Leon et al. 2017	„
<i>qSIS7.17</i>	7	Seedling	IL	Salt injury score (SIS)	RM5793	17.5 cM	8.1	„	„
<i>qSHL7.12</i>	7	Seedling	IL	Shoot length	RM214	12.8 cM	6.7	„	„
<i>Q_{K2}</i>	9	Seedling	NIL	K ⁺ uptake				Flowers et al. 2000	Absent
Trait-based QTL	9	Seedling	RIL	K ⁺ uptake	E12M55-4	96 cM	19.6	Koyama et al. 2001	„
<i>qRNC-9</i>	9	Seedling	F _{2:3}	Root Na ⁺ concentration	R1751 - R2638	-	16.7	Lin et al. 2004	„
<i>qSHL-9</i>	9	Seedling	F _{2:4}	Shoot length	E37-M60-13-E36-M60-1	136.1 cM	9.9	Ghomi et al. 2013	„
<i>qSES10</i>	10	Seedling	F ₂	SES	RM228-RM333	-	30.7	Bimpong et al. 2014	Absent
<i>qSHL-10</i>	10	Seedling	F _{2:4}	Shoot length	RM2863-E36-M61-13	111.4 cM	4.1	Ghomi et al. 2013	„
<i>qSES11</i>	11	Seedling	F ₂	SES	RM536-RM287	-	37.2	Bimpong et al. 2014	„
<i>qSL12.1</i>	12	Seedling	RIL	Shoot length	id12000252-id12001321	6.9 cM	9.8	<i>qSES12.3</i> (31.0 cM)- This study Bizimana et al. 2017	Novel
<i>qSES12.1</i>	12	Seedling	RIL	SES	id12000252-id12001321	6.9 cM	10.6	<i>qSur12.3</i> (67.1 cM)-This study <i>qSES12.3</i> (31.0 cM) - This study	„

Chr: Chromosome number; IL: Introgression line; PVE: Phenotypic variation explained; RIL: Recombinant inbred line; SES: Overall phenotypic performance; SL: Shoot length; Na: Na⁺ concentration; K: K⁺ concentration; NaK-R: Na-K ratio, Sur: Survival; * indicates embedded QTLs identified in this study