Supplementary

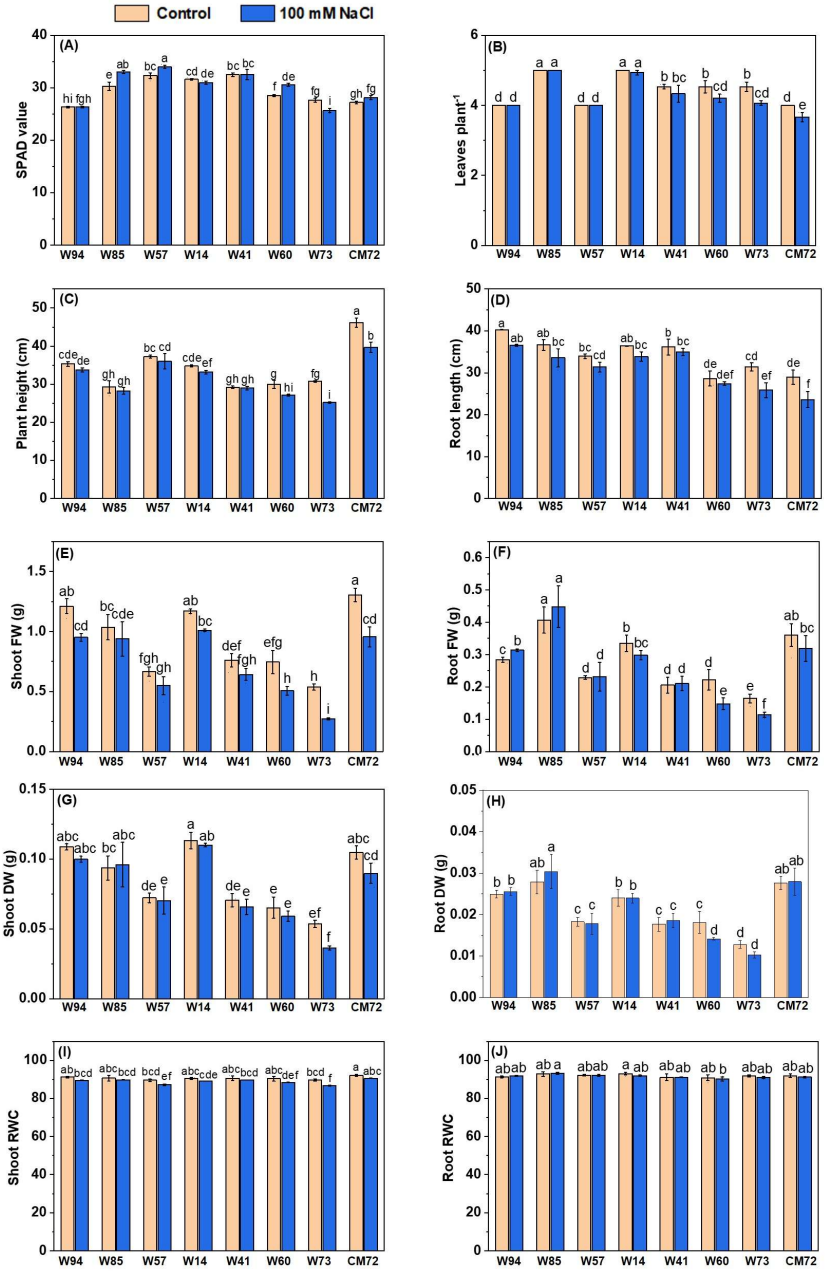


Figure S1. Effects of treatment with and without with 100 mM NaCl salinity stress on the five tolerant (Kzyl-Sark (W94), Misr4 (W85), Hofed (W57), BAW-1157 (W14) and Corack (W41)), two sensitive (Livingstong (W60) and Sunvale (W73)), and CM72 in the hydroponic validation experiment. The plants were assessed 10 days after treatment, and the data are means ± SE (n = 3). Bars annotated with different letters indicate significant differences between means at $p \leq 0.05$ according to least significance tests.

Table S1. Chlorophyll contents (SPAD values), leaves per plant (LN), plant height (PH), shoot fresh (SFW) and dry weight (SDW), and the integrated score (IS) of CM72 (comparator genotype) and the selected tolerant (TG) and sensitive (SG) wheat genotypes after 15 days of combined salinity and waterlogging stresses (S+W) during in the preliminary screen.

Genotypes	SPAD value			Leaves per plant			Plant height (mm)			Shoot FW (g plant^{-1})			Shoot DW (g plant^{-1})			Integrated score [a]
	CK	S+W	Reduction	CK	S+W	Reduction	CK	S+W	Reduction	CK	S+W	Reduction	CK	S+W	Reduction	
CM72	27.60^{e}	24.60^{e}	(-10.87) $^{b[1]}$	3.80^{e}	3.37^{d}	(-1.75) ^{ab}	178.0^{b}	188.3^{ab}	(5.82) ^{a}	0.548^{cd}	0.631^{ab}	(8.33) ^{a}	0.116^{b}	0.127^{a}	(4.89) ^{ab}	1.28^{a}
Tolerant genotypes																
W94	36.15^{b}	33.13^{b}	(-8.34) ^{ab}	5.00^{ab}	4.63^{ab}	(-7.33) ^{bc}	135.0^{de}	145.1^{de}	(7.49) ^{a}	0.595^{bc}	0.597^{ab}	(0.34) ^{ab}	0.129^{b}	0.137^{a}	(6.74) ^{a}	-0.22^{ab}
W85	32.70^{c}	29.75^{c}	(-9.02) ^{ab}	5.00^{ab}	5.00^{a}	(0.00) ^{ab}	145.5^{d}	151.0^{cde}	(3.78) ^{a}	0.518^{d}	0.479^{b}	(-6.18) ^{b}	0.099^{c}	0.097^{b}	(-1.86) ^{abc}	-2.66^{ab}
W57	40.5^{a}	37.00^{a}	(-8.64) ^{ab}	4.30^{d}	4.37^{bc}	(1.55) ^{ab}	177.5^{b}	170.5^{bc}	(-3.94) ^{ab}	0.484^{d}	0.487^{b}	(0.60) ^{ab}	0.096^{c}	0.093^{b}	(-3.86) ^{abc}	-2.86^{ab}
W14	30.10^{d}	29.43^{c}	(-2.21) ^{a}	4.50^{cd}	4.50^{b}	(0.00) ^{ab}	191.2^{a}	192.1^{a}	(0.49) ^{a}	0.609^{bc}	0.619^{a}	(1.40) ^{ab}	0.156^{a}	0.126^{a}	(-19.06) ^{cde}	-3.88^{ab}
W41	35.20^{b}	32.83^{b}	(-6.72) ^{ab}	4.45^{cd}	4.63^{ab}	(4.12) ^{a}	165.3^{c}	162.0^{cd}	(-2.02) ^{a}	0.706^{a}	0.680^{ab}	(-3.69) ^{ab}	0.145^{a}	0.123^{a}	(-14.94) ^{bcd}	-4.65^{b}
Sensitive genotypes																
W60	35.50^{b}	28.57^{cd}	(-19.53) ^{c}	5.30^{a}	4.30^{bc}	(-18.87) ^{d}	167.0^{bc}	139.7^{e}	(-16.37) ^{bc}	0.629^{b}	0.377^{b}	(-40.01) ^{d}	0.123^{b}	0.078^{b}	(-36.82) ^{e}	-26.32^{c}
W73	39.45^{a}	26.45^{de}	(-32.95) ^{d}	4.80^{bc}	4.00^{cd}	(-16.67) ^{cd}	130.7^{e}	106.8^{f}	(-18.24) ^{c}	0.383^{e}	0.284^{b}	(-25.78) ^{c}	0.078^{d}	0.051^{c}	(-34.26) ^{de}	-25.58^{c}
Mean of 7 genotypes	35.23	31.02	(-14.49)	4.76	4.49	(-5.31)	158.9	152.5	(-4.12)	0.561	0.503	(-10.47)	0.118	0.100	(-14.87)	-9.45
Mean of 5 TG	34.33	32.43	(-6.99)	4.65	4.63	(-0.33)	162.9	164.1	(1.16)	0.582	0.572	(-1.51)	0.125	0.115	(-6.60)	-2.85
Mean of 2 SG	37.48	27.51	(-26.24)	5.05	4.15	(-17.77)	148.9	123.3	(-17.31)	0.506	0.331	(-32.90)	0.101	0.065	(-35.54)	-25.95
LSD$_{0.05}$	1.94	2.45	7.14	0.41	0.45	9.96	1.21	2.14	13.47	0.067	0.846	14.16	0.015	0.022	20.15	5.53

[1] Values within brackets represent the relative reduction in S+W treatment compared to the control. [a] Integrated score = [(SPAD value × 0.2) + (LN × 0.2) + (PH × 0.2) + (SFW × 0.2) + (SDW × 0.2)]. For each genotype, three replicates were used (each replicate contained 4 seedlings). Within column, means annotated with the same letter are not significantly different from each other according to least significance tests at $p \leq 0.05$.

Table S2. Eigenvalues of the correlation matrix of 100 wheat genotypes and CM72 (check genotype) after 15 days of exposure to 100 mM NaCl during the preliminary pot selection experiment based on relative values expressed as percentages of controls.

PC	Percentage			Characters	Coefficients[a]			
	Eigenvalue	Variance %	Cumulative %		PC1	PC2	PC3	PC4
1	3.331	55.51	55.51	SPAD	0.193	0.538	0.788	0.061
2	0.965	16.09	71.60	PH	0.208	0.706	-0.596	0.277
3	0.948	15.79	87.40	LN	0.394	-0.395	0.086	0.804
4	0.501	8.35	95.75	SFW	0.489	-0.023	-0.004	-0.376
5	0.255	4.25	100.00	SDW	0.476	-0.231	-0.130	-0.359
6	0.000	0.00	100.00	IS	0.547	0.048	0.002	-0.058

Abbreviations: SPAD, chlorophyll contents; PH, plant height; LN, number of leaves per plant; SFW, shoot fresh weight; SDW, shoot dry weight; IS, integrated score. [a]The coefficients are the correlations between the variables (e.g., PH and SPAD value) and the principal components, PC1, PC2, PC3, PC4.

Table S3. Relative (treatment/control) effects of combined salt and waterlogging stresses on the agronomic traits of CM72, and the five tolerant (TG) and two susceptible (SG) wheat genotypes in the hydroponic validation experiment after 10 days of treatment, expressed as the percentage of control.

Genotypes	SPAD value	Leaves per plant	Plant height	Root length	Shoot FW	Root FW	Shoot DW	Root DW	Shoot RWC	Root RWC	Integrated score
CM72	+3.47^{bc}	-8.33^{c}	-14.07^{b}	-18.47^{ns}	-27.05^{bc}	-7.85^{ab}	-14.58^{ab}	+1.95^{ab}	-1.61^{ns}	-0.71^{ns}	-8.72^{abc}
Five tolerant genotypes											
W94	+3.68^{bc}	0.00^{a}	-4.42^{a}	-9.36^{ns}	-21.16^{abc}	+10.36^{a}	-8.06^{a}	+2.42^{ab}	-1.91^{ns}	+0.65^{ns}	-2.78^{ab}
W85	+9.16^{a}	0.00^{a}	-3.13^{a}	-8.10^{ns}	-9.66^{a}	+11.00^{a}	+2.02^{a}	+9.36^{a}	-0.86^{ns}	+0.41^{ns}	+1.02^{a}
W57	+5.09^{ab}	0.00^{a}	-3.26^{a}	-7.63^{ns}	-18.34^{abc}	+0.51^{ab}	-3.62^{a}	-3.70^{ab}	-2.61^{ns}	+0.00^{ns}	-3.36^{ab}
W14	-2.11^{d}	-1.33^{ab}	-4.58^{a}	-6.83^{ns}	-13.66^{ab}	-10.24^{ab}	-5.25^{a}	+0.58^{ab}	-1.04^{ns}	-1.16^{ns}	-4.56^{ab}
W41	+0.08^{cd}	-4.48^{abc}	-0.62^{a}	-2.96^{ns}	-15.12^{ab}	+3.47^{a}	-6.26^{a}	+6.18^{a}	-0.87^{ns}	+0.12^{ns}	-2.05^{ab}
Two sensitive genotypes											
W60	+7.13^{ab}	-7.26^{bc}	-9.37^{ab}	-3.56^{ns}	-31.04^{c}	-32.57^{b}	-8.36^{a}	-19.37^{b}	-2.19^{ns}	-0.68^{ns}	-10.73^{bc}
W73	-7.13^{e}	-10.23^{c}	-18.09^{b}	-17.22^{ns}	-48.92^{d}	-30.16^{b}	-31.61^{b}	-19.23^{b}	-3.30^{ns}	-0.89^{ns}	-18.68^{c}
Mean of all 7 genotypes	+2.27	-3.33	-6.21	-7.95	-22.56	-6.80	-8.73	-3.39	-1.83	-0.22	-5.88
Mean of 5 TG	+3.18	-1.16	-3.20	-6.98	-15.59	+3.02	-4.23	+2.97	-1.46	0.00	-2.34
Mean of 2 SG	+0.00	-8.75	-13.73	-10.39	-39.98	-31.36	-19.99	-19.30	-2.74	-0.78	-14.70
$LSD_{0.05}$	4.86	6.8	9.42	ns	15.09	33.37	19.43	25.41	ns	ns	10.19

Values are expressed as a reduced (-)/increased (+) percentages compared the controls. Within a column, means followed by the same letter(s) are not significantly different according to LSD tests at $p \leq 0.05$. ns: not significant. For each genotype, three replicates were used (each replicate contained 5 seedlings).

Table S4. Effect of salinity stress on chlorophyll contents (SPAD value), leaves per plant, plant height, root length, shoot fresh weight, root fresh weight, shoot and root biomass, and shoot and root relative water content and the integrated score of tolerant-genotype Misr4 (W85), sensitive-genotype Sunvale (W73), and CM72 (check genotype) in the validation experiment after 8 days of 100 mM NaCl expressed as the percentage of control.

Genotypes	SPAD value	Leaves per plant	Plant height	Root length	Shoot FW	Root FW	Shoot DW	Root DW	Shoot RWC	Root RWC	Integrated score
W85	19.79^{a}	1.57^{a}	-4.01^{a}	-9.85^{a}	-26.71^{a}	77.04^{a}	-9.29^{a}	20.79^{a}	-2.49^{a}	4.26^{a}	7.11^{a}
W73	-16.18^{b}	0.00^{a}	-21.88^{b}	-34.32^{b}	-51.62^{b}	-38.28^{c}	-34.08^{a}	-18.93^{b}	-4.41^{b}	-3.47^{b}	-22.32^{b}
CM72	4.96^{c}	-4.44^{a}	-11.53^{ab}	-5.98^{a}	-23.59^{a}	12.31^{b}	-13.51^{a}	-2.00^{ab}	-1.15^{a}	1.51^{a}	-4.34^{a}
Between varieties	**	NS	*	**	*	**	NS	*	**	**	**
LSD$_{0.05}$	8.08	24.23	13.75	13.84	21.93	36.09	25.97	28.24	1.58	3.18	12.38

* and **, significant at 0.05 and 0.01 levels of probability, respectively, between varieties under 100 mM NaCl. NS, not significant. For each genotype, three replicates were used (each replicate contained 10 seedlings).

Table S5. Serial number, name and country of origin of the 100 wheat genotypes used in the preliminary screen.

Sr. No.	Name	Origin	Sr. No.	Name	Origin	Sr. No.	Name	Origin
W1	BARI-Gom-22	Bangladesh	**W42**	CUNNINGHAM	Australia	**W83**	Sunmate	Australia
W2	BARI-Gom-23	Bangladesh	**W43**	DIAMONDBIRD	Australia	**W84**	Misr3	Egypt
W3	BARI-Gom-24	Bangladesh	**W44**	DRYSDALE	Australia	**W85**	Misr4	Egypt
W4	BARI-Gom-25	Bangladesh	**W45**	EGA BONNIE ROCK	Australia	**W86**	Sids14	Egypt
W5	BARI-Gom-28	Bangladesh	**W46**	EGA BOUNTY	Australia	**W87**	Shakah95	Egypt
W6	BARI-Gom-30	Bangladesh	**W47**	EGA KIDMAN	Australia	**W88**	Giza171	Egypt
W7	BARI-Gom-31	Bangladesh	**W48**	EGA WEDGETAIL	Australia	**W89**	JM22	China
W8	BARI-Gom-32	Bangladesh	**W49**	FANG	Australia	**W90**	YM20	China
W9	BAW-1147	Bangladesh	**W50**	Federation	Australia	**W91**	H-115	China
W10	BAW-1194	Bangladesh	**W51**	FRAME	Australia	**W92**	H-179	China
W11	BAW-1202	Bangladesh	**W52**	GAMENYA	Australia	**W93**	H-215	China
W12	BAW-1135	Bangladesh	**W53**	GILES	Australia	**W94**	Kzyl-Sark	Australia
W13	BAW-1293	Bangladesh	**W54**	GLADIUS	Australia	**W95**	ZM33	China
W14	BAW-1157	Bangladesh	**W55**	H45	Australia	**W96**	BANKS	Australia
W15	BAW-1208	Bangladesh	**W56**	HALBERD	Australia	**W97**	Mengavi	Australia
W16	BWSN-11	Bangladesh	**W57**	HOFED	Australia	**W98**	BATAVIA	Australia
W17	BWSN-13	Bangladesh	**W58**	KELALAC	Australia	**W99**	PYT-19	Bangladesh
W18	BWSN-14	Bangladesh	**W59**	KENNEDY	Australia	**W100**	BARI-Gom-29	Bangladesh
W19	BWSN-16	Bangladesh	**W60**	LIVINGSTON	Australia	**W101**	CM72 (check genotype)	USA
W20	BWSN-7	Bangladesh	**W61**	MACHETE	Australia			
W21	BWSN-22	Bangladesh	**W62**	MERINDA	Australia			
W22	BWSN-31	Bangladesh	**W63**	QAL2000	Australia			
W23	BWSN-33	Bangladesh	**W64**	ROWAN	Australia			
W24	BWSN-36	Bangladesh	**W65**	SHIELD	Australia			
W25	BWSN-38	Bangladesh	**W66**	STRZELECKI	Australia			
W26	BWSN-40	Bangladesh	**W67**	SUNBRI	Australia			
W27	BWSN-42	Bangladesh	**W68**	SUNBROOK	Australia			
W28	PYT-6	Bangladesh	**W69**	SUNCO	Australia			
W29	PYT-11	Bangladesh	**W70**	SUNFIELD	Australia			
W30	BARI-Gom-8	Bangladesh	**W71**	SUNSOFT 98	Australia			
W31	BWA-1	Bangladesh	**W72**	SUNSTATE	Australia			
W32	PYT-34	Bangladesh	**W73**	SUNVALE	Australia			
W33	AYT-10	Bangladesh	**W74**	SUNVEX	Australia			
W34	KRL-19	Bangladesh	**W75**	SUNZELL	Australia			
W35	AGT KATANA	Australia	**W76**	VULCAN	Australia			
W36	ANNUELLO	Australia	**W77**	WALLUP	Australia			
W37	BAXTER	Australia	**W78**	WESTONIA	Australia			
W38	BOLAC	Australia	**W79**	WYALKATCHEM	Australia			
W39	CARINYA	Australia	**W80**	YITPI	Australia			
W40	CASCADES	Australia	**W81**	Chinese spring	China			
W41	CORACK	Australia	**W82**	Suntop	Australia			