

Supplementary materials:

Table S1. Monthly average weather conditions in the trial sites during the seasons 2018 and 2019 at Merredin

Month	Air Temp; min		Air Temp; max		Rain mm		Rainy Days	
	2018	2019	2018	2019	2018	2019	2018	2019
January	11.5	12.3	42.1	44.6	22.8	0.2	6	1
February	13.3	13	42.6	44	14.4	1	2	2
March	9.6	-6.6	38.1	38.6	20.8	12.8	3	5
April	6.6	3.5	34	36.3	0.8	12.4	2	5
May	3.2	-1.4	28.5	28.8	11.6	5.8	5	3
June	1.4	1.3	25.2	23.3	41.4	76	14	16
July	0.8	1.8	21.2	20.9	58.8	37.8	13	17
August	0.3	-0.3	23.8	27.8	68.8	51	15	13
September	0.1	-0.8	31.5	33.5	4.4	3	2	4
October	4.9	5.8	34.7	36.4	44.4	22.4	10	5
November	4.6	7.3	38	43.2	13.4	0.2	3	1
December	11.9	12.2	40.9	42.4	17.2	0.6	3	1

Table S2. Country of origin, AUS and IG No, and pedigree of wheat lines used.

WA	OTHER		COUNTRY OF	
Accession#	NAME ID	IG NO.	ORIGIN	Pedigree
Condo			AUSTRALIA	Young/VR0525
Krichauff			AUSTRALIA	WARIQUAM//KLOKA/PITIC-62/3/WARIMEK/HALBERD/4/3-AG-3/AROONA
Magenta			AUSTRALIA	Carnamah/Tammin-18
Ninja			AUSTRALIA	Calingiri/Wyalkatchem
Scepter			AUSTRALIA	RAC1480//Mace
WA005	ALEPPO 33	138786	SYRIA	Traditional cultivar/Landrace
WA034w	PERSIA 58	138844	IRAN	Traditional cultivar/Landrace
WA134		42034	EGYPT	Traditional cultivar/Landrace
WA194		93133	ALGERIA	Traditional cultivar/Landrace
WA250		108711	INDIA	Traditional cultivar/Landrace
WA325		138729	UKRAINE	Traditional cultivar/Landrace
WA332		141111	IRAN	Traditional cultivar/Landrace
WA345		141125	EGYPT	Traditional cultivar/Landrace
WA377		141160	INDIA	Traditional cultivar/Landrace
WA143		43352	ALGERIA	Traditional cultivar/Landrace

Table S3. Yield and leave tissue mineral concentrations in the lines grown at the sodic and non-sodic site in TOS1

Site	Line	Yield	Al	Ca (%)	K (%)	Na (%)	Mg	P (%)	S (%)	B	Zn	Cu	Mn	Fe	K:NA
Non-	Condo	1.39	103.0	0.430	1.93	0.011	0.217	0.237	0.303	18.5	20.3	4.10	81.0	112.3	5.21
	Krichauff	1.44	116.7	0.233	1.77	0.011	0.157	0.200	0.283	15.8	17.3	4.83	42.3	116.7	5.10
	Magenta	1.09	101.0	0.270	2.41	0.013	0.170	0.243	0.287	22.7	19.3	4.10	38.0	103.3	5.33
	Ninja	1.56	91.7	0.390	1.93	0.007	0.197	0.220	0.303	9.1	19.3	3.73	78.7	103.3	5.60
	Scepter	1.64	120.0	0.317	2.09	0.009	0.178	0.225	0.292	19.5	20.8	4.67	64.7	110.0	5.52
	WA005	0.74	44.7	0.233	1.60	0.013	0.153	0.157	0.260	9.6	16.7	3.67	37.0	81.7	4.87
	WA034w	0.86	45.3	0.473	1.61	0.011	0.197	0.167	0.277	7.2	16.0	3.67	66.0	74.3	4.96
	WA134	1.45	92.3	0.480	1.47	0.010	0.213	0.163	0.283	7.8	13.7	3.27	83.0	101.3	5.01
	WA143	1.25	82.0	0.307	1.71	0.009	0.187	0.210	0.307	8.7	24.0	2.83	36.7	86.3	5.21
	WA194	1.25	57.7	0.430	1.71	0.019	0.197	0.163	0.273	7.5	19.0	2.67	59.0	71.3	4.63
	WA250	1.21	96.7	0.353	1.49	0.016	0.243	0.183	0.283	18.4	17.0	3.30	68.7	103.3	4.56
	WA325	1.41	68.7	0.457	1.55	0.016	0.217	0.147	0.270	5.9	12.0	2.83	49.0	88.7	4.71
	WA332	0.39	83.7	0.147	2.25	0.004	0.077	0.180	0.277	13.0	16.0	3.93	26.7	90.0	6.24
	WA345	1.15	59.0	0.420	1.83	0.014	0.250	0.180	0.307	14.5	20.0	3.57	59.0	81.0	4.75
	WA377	1.14	44.0	0.433	1.49	0.017	0.267	0.150	0.270	9.5	16.3	3.07	74.0	83.7	4.47
Sodic	Condo	1.80	120.0	0.310	1.83	0.011	0.253	0.240	0.300	133.3	17.0	5.43	106.7	120.0	5.13
	Krichauff	1.79	110.0	0.213	1.66	0.009	0.167	0.200	0.270	47.3	14.0	5.63	61.3	110.0	5.15
	Magenta	1.48	120.0	0.233	2.43	0.008	0.187	0.227	0.310	100.3	17.7	6.63	74.0	110.0	5.61
	Ninja	1.99	126.7	0.220	2.16	0.007	0.180	0.223	0.327	142.0	16.7	5.90	97.0	120.0	5.65
	Scepter	2.21	122.3	0.242	2.10	0.007	0.210	0.230	0.318	64.7	17.5	6.05	98.8	120.0	5.69

Site	Line	Yield	Al	Ca (%)	K (%)	Na (%)	Mg	P (%)	S (%)	B	Zn	Cu	Mn	Fe	K:NA
	WA005	0.71	132.7	0.137	1.72	0.013	0.147	0.180	0.253	98.3	12.7	6.03	41.3	111.3	4.89
	WA034w	1.10	58.3	0.323	1.97	0.015	0.200	0.187	0.280	68.3	15.7	6.17	80.7	91.0	4.91
	WA134	1.90	91.0	0.253	1.63	0.011	0.183	0.173	0.240	130.0	13.0	5.63	94.0	97.0	4.99
	WA143	1.55	95.0	0.197	1.56	0.008	0.170	0.177	0.260	39.3	15.0	6.63	41.7	115.7	5.22
	WA194	1.52	85.0	0.293	1.65	0.014	0.210	0.160	0.240	85.7	13.7	5.10	72.0	92.7	4.71
	WA250	1.54	62.3	0.203	1.59	0.021	0.213	0.183	0.260	105.0	13.0	5.50	71.3	85.3	4.39
	WA325	1.64	81.0	0.307	1.86	0.015	0.173	0.147	0.240	38.3	11.3	5.00	69.3	89.3	4.79
	WA332	0.15	90.7	0.073	2.44	0.005	0.067	0.190	0.227	106.7	13.3	6.10	19.7	88.0	6.23
	WA345	1.45	78.7	0.517	1.40	0.022	0.323	0.137	0.283	63.3	11.0	5.23	136.7	116.7	4.33
	WA377	1.17	50.3	0.287	1.43	0.022	0.240	0.167	0.243	63.7	13.7	6.53	110.0	87.7	4.24
P- values:	Genotype		<0.001	na	na	na	na	<0.001	na	na	<0.001	na	na	na	
	Env:Gen		0.065	0.023	0.127	0.002	0.005	0.321	<0.001	<0.001	0.078	0.001	0.005	0.048	
	Across		37.39	0.103	0.304	0.004	0.052	0.032	0.026	28.1	3.9	0.851	23.17	20.41	
LSD:	Within		37.15	0.093	0.283	0.004	0.046	0.03	0.025	25.1	3.56	0.839	21.7	19.77	