

Table S1: Mean grain yield and susceptibility index (SI) for 40 accessions (20 with the lowest RI % and another 20 with the highest RI% obtained from using PEG treatment) and their yield performance under contrasting field conditions

Entry	Country	Improvement		Grain Yield (ton/ Hectare)		SI
			RI%	Normal	Drought	
479803	Ethiopia	LANDRACE	27.00	3.88	3.75	0.07
224285	South Africa	BREEDING	27.00	3.84	3.7	0.07
565218	Bolivia	LANDRACE	28.50	4.77	3.01	0.71
519623	Colombia	BREEDING	28.50	3.97	2.95	0.50
519937	Mexico	BREEDING	28.50	4.41	2.55	0.81
519421	Ecuador	BREEDING	29.00	4.11	2.35	0.82
626034	Iran	LANDRACE	29.00	3.35	1.98	0.79
295962	Israel	CULTIVAR	29.00	3.71	1.88	0.95
519842	Mexico	BREEDING	29.00	2.94	1.85	0.71
244852	Brazil	CULTIVAR	29.50	4.15	1.838	1.07
326336	Colombia	CULTIVAR	29.50	4.38	1.85	1.11
520005	Mexico	BREEDING	29.50	3.78	1.82	1.00
565213	Bolivia	LANDRACE	30.00	4.44	1.85	1.12
189629	Brazil	CULTIVAR	30.00	3.42	1.75	0.94
625089	Iran	LANDRACE	30.00	3.95	1.71	1.09
625431	Iran	LANDRACE	30.00	6.31	1.64	1.42
185905	Mexico	BREEDING	30.00	3.68	1.555	1.11
525211	Morocco	LANDRACE	30.00	5.72	1.655	1.36
384405	Nigeria	UNCERTAIN	30.00	3.14	1.63	0.92
642383	United States	BREEDING	30.00	3.33	1.85	0.85
351650	Switzerland	BREEDING	50.5	5.00	1.80	1.23
73329	Armenia	LANDRACE	50.5	4.00	1.70	1.10
190449	Norway	CULTIVAR	50.5	3.097591702	1.45	1.02
350801	Austria	LANDRACE	50.5	4.488772351	1.95	1.09
518648	Canada	CULTIVAR	50.5	4.340117911	1.55	1.23
350765	Austria	LANDRACE	51	2.880424606	1.9	0.65
350795	Austria	LANDRACE	51	3.116590477	1.8	0.81
350831	Austria	LANDRACE	51	2.906193907	2.3	0.40
383403	Sweden	CULTIVAR	51	3.304263442	1.95	0.79
350786	Austria	LANDRACE	51.5	3.93941575	1.8	1.04
350808	Austria	LANDRACE	51.5	3.868640255	1.79	1.03
592026	Russian Federation	CULTIVAR	51.5	3.124351651	1.85	0.78
613296	Mexico	BREEDING	51.5	4.317955671	1.72	1.16
254829	Austria	CULTIVAR	52	3.578717718	1.55	1.09
43325	Russian Federation	UNCERTAIN	52.5	4.461386494	1.75	1.17
350822	Austria	LANDRACE	53	3.794979907	1.3	1.26
350766	Austria	LANDRACE	53.5	4.677894714	1.25	1.41
352179	Norway	CULTIVAR	54	5.721281372	1.15	1.53
480479	Bolivia	LANDRACE	54	3.646605189	1.09	1.35
352204	Switzerland	BREEDING	54.5	2.576850416	0.94	1.22

Table S2: Mean grain yield and susceptibility index (SI) for 40 accessions (20 with the lowest RI % and another 20 with the highest RI% obtained from in vitro heat stress) and their yield performance under contrasting field conditions.

Country	Improvement	RI%	Grain yield (ton/hectare)		SI
			Recommended sowing date	Late sowing date	
Ecuador	BREEDING	26.0	5.300	5.082	0.10
Iraq	LANDRACE	26.5	4.100	3.660	0.25
Brazil	BREEDING	27.5	4.100	3.100	0.58
Egypt	BREEDING	27.5	3.820	3.010	0.50
Sudan	LANDRACE	27.5	4.160	2.820	0.76
Croatia	BREEDING	28.0	3.490	3.010	0.33
Oman	LANDRACE	28.0	3.520	2.450	0.72
Brazil	BREEDING	29.0	3.170	2.930	0.18
Philippines	UNCERTAIN	29.0	3.600	2.180	0.93
Uruguay	UNCERTAIN	29.0	2.540	2.370	0.16
Ethiopia	LANDRACE	29.5	3.370	2.840	0.37
Finland	CULTIVAR	29.5	3.770	1.190	1.62
Yemen	UNCERTAIN	29.5	3.170	1.750	1.06
Yemen	UNCERTAIN	29.5	3.580	1.654	1.27
Yemen	UNCERTAIN	29.5	2.690	2.010	0.60
Yemen	UNCERTAIN	29.5	3.740	2.400	0.85
Zimbabwe	BREEDING	29.5	5.610	2.300	1.40
Argentina	BREEDING	30.0	3.160	2.010	0.86
Egypt	BREEDING	30.0	5.110	2.110	1.39
Mexico	CULTIVAR	30.0	3.090	1.920	0.90
Zimbabwe	UNCERTAIN	49	3.30	1.886	1.01
Uruguay	BREEDING	49.5	3.76	1.841	1.21
Argentina	CULTIVAR	49.5	2.49	1.871	0.59
Chile	CULTIVAR	49.5	3.91	1.870	1.24
Argentina	BREEDING	50	3.50	1.771	1.17
Russian Federation	CULTIVAR	50	2.56	1.865	0.65
Russian Federation	CULTIVAR	50	2.93	1.833	0.89
Iran	LANDRACE	50	2.64	1.778	0.78
Mexico	BREEDING	50.5	2.87	1.228	1.36
Zimbabwe	CULTIVAR	50.5	3.47	2.175	0.88
Mexico	BREEDING	51	3.52	1.318	1.48
Uruguay	CULTIVAR	51	3.11	2.140	0.74
Switzerland	BREEDING	51.5	4.02	1.170	1.68
Canada	CULTIVAR	51.5	3.42	1.120	1.59
Zimbabwe	CULTIVAR	51.5	5.69	1.741	1.64
Switzerland	BREEDING	52	3.63	1.738	1.23
Peru	BREEDING	52.5	4.07	1.669	1.40
Uruguay	BREEDING	52.5	5.14	1.502	1.68
United States	BREEDING	54.5	3.58	1.431	1.42
Mexico	BREEDING	56.5	2.58	1.208	1.26