

Supplementary data

**Performance of Ethiopian bread wheat (*Triticum aestivum* L.) genotypes under contrasting water regimes: potential sources of variability for drought resistance breeding**

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**Supplementary Table 1. Mean values for Root length (RL), shoot length (SHL) and fresh biomass (FBM) of 248 wheat genotypes tested under PEG induced water stress and non-stress growing conditions and their calculated drought indices.**

Accession	Region	Zone	District	Altitude	Non-Stress			Stress			Drought indices			
					RL	SHL	FBM	RL	SHL	FBM	SSI	STI	GMP	DRI
221735	Tigray	Debubawi	Enderta	2170	16.7	15.7	253.7	13.1	11.1	73.3	2.0	0.13	7.88	0.52
219354	Oromiya	Borena	Liben	1460	13.7	22.7	253.7	11.1	11.6	173.3	1.6	0.11	10.89	1.00
226251	Amara	Semen Shewa	Debre Berhan Zuria	2810	10.7	14.7	153.8	10.1	11.1	173.3	1.4	0.09	10.17	0.77
226246	Tigray	Debubawi	Enderta	2687	13.7	13.7	143.7	11.6	12.1	173.3	1.8	0.11	8.87	1.26
226236	Oromiya	Misrak Shewa	Gimbichu	2970	9.7	6.7	53.75	11.1	14.1	73.3	2.2	0.09	6.69	0.27
226235	Oromiya	Misrak Shewa	Gimbichu	2970	14.2	16.2	153.8	3.6	2.6	73.3	0.1	0.08	16.65	0.77
226215	Oromiya	Semen Shewa	Berehna Aleltu	3066	13.7	15.7	253.7	11.1	10.6	73.3	1.4	0.11	11.06	0.55

231521	Oromiya	Mirab Shewa	Dendi	2390	13.5	19.2	253.7	8.6	11.6	173.	1.2	0.10	12.96	0.37
231487	Tigray	Mehakelegnaw	Lalay Maychew	2367	11.2	12.7	153.8	12.1	13.6	73.3	-1.0	0.10	19.44	0.63
242426	Oromiya	Mirab Harerge	Chiro	2213	13.7	14.2	153.8	6.1	9.1	73.3	2.3	0.09	9.20	1.26
231578	Amara	Debub Gondar	Lay Gayint	2980	16.2	14.7	53.75	13.6	12.1	173.3	0.9	0.13	13.18	1.23
231553	Oromiya	Arssi	Gedeb	2460	7.7	7.2	53.75	3.6	2.6	73.33	0.9	0.05	14.92	0.50
231567	SNNP	Hadiya	Soro	2440	15.7	10.2	153.8	11.1	7.1	73.33	1.5	0.12	10.71	1.06
226384	Oromiya	Mirab Shewa	Cheliya	2340	15.2	11.7	53.75	13.1	9.1	173.3	1.0	0.13	14.10	0.25
242427	Oromiya	Mirab Harerge	Chiro	2220	16.2	20.7	153.8	9.1	7.6	73.33	0.4	0.11	9.63	1.16
242425	Oromiya	Mirab Harerge	Chiro	2206	16.7	13.7	153.8	4.6	8.1	73.33	-0.7	0.10	10.84	1.47
242424	Oromiya	Mirab Harerge	Chiro	1865	10.7	17.7	153.8	7.6	12.6	173.3	0.4	0.08	14.37	0.83
242423	Oromiya	Mirab Harerge	Chiro	1855	10.7	16.7	53.75	5.1	10.6	73.33	-3.1	0.07	12.59	1.08
231614	Oromiya	Misrak Harerge	Kurfa Chele	2510	18.2	17.7	153.8	16.1	16.1	173.3	-2.1	0.15	15.36	0.99
243704	Amara	Semen Weoll	Dawuntna Delant	2950	16.7	6.7	153.8	11.1	7.1	73.33	1.0	0.12	10.43	0.30
243702	Amara	Semen Weoll	Dawuntna Delant	2950	12.7	7.7	53.75	10.1	9.6	73.33	1.6	0.10	12.30	0.41
242429	Oromiya	Mirab Harerge	Chiro	2229	10.7	17.7	153.8	8.1	12.6	173.3	1.6	0.08	8.06	0.54
242428	Oromiya	Mirab Harerge	Chiro	2206	13.7	14.2	53.75	13.1	11.6	73.33	0.9	0.12	7.27	0.79

226938	Oromiya	Misrak Harerge	Deder	2200	11.7	17.2	53.75	8.1	14.6	173.3	0.4	0.09	18.35	0.66
226893	Oromiya	Semen Shewa	Gerar Jarso	2820	15.7	16.7	53.75	13.6	10.6	73.33	2.1	0.13	6.29	0.55
243697	Amara	Debub Wello	Kalu	2415	13.2	17.2	53.75	9.1	13.6	73.33	1.4	0.10	10.88	1.10
243696	Amara	Debub Wello	Kalu	2415	9.2	11.7	53.75	12.6	8.6	73.33	2.0	0.10	9.61	0.61
242430	Oromiya	Mirab Harerge	Chiro	1815	14.7	14.7	53.75	15.6	14.1	173.3	1.4	0.14	11.77	0.59
231550	Oromiya	Arssi	Robe	2430	15.2	9.7	153.8	11.6	11.1	73.33	0.6	0.12	6.12	1.28
231549	Oromiya	Arssi	Robe	2430	12.7	10.7	53.75	12.6	12.6	73.33	2.6	0.11	5.62	0.96
231546	Oromiya	Arssi	Digeluna Tijo	2660	16.2	15.2	253.7	13.1	12.1	73.33	1.4	0.13	13.53	0.62
231545	Oromiya	Arssi	Digeluna Tijo	2660	15.2	13.7	53.75	10.6	10.6	73.33	1.6	0.12	11.59	0.41
231535	SNNP	Hadiya	Konteb	2570	15.7	16.7	253.7	12.6	14.1	73.33	1.4	0.13	13.19	1.08
231529	Oromiya	Misrak Shewa	Lome	2250	18.7	11.2	253.7	10.6	6.1	73.33	1.4	0.13	10.17	0.83
243734	Amara	Debub Gondar	Kemekem	2135	12.7	18.7	153.8	12.1	12.6	73.33	1.4	0.11	12.30	0.26
243732	Amara	Semen Gondar	Gondar Zuria	2145	17.2	15.7	153.8	12.1	10.6	73.33	1.0	0.13	11.66	0.47
243710	Tigray	Debubawi	Endamehoni	2455	13.2	13.2	153.8	8.6	7.6	73.33	0.9	0.10	12.47	0.89
231485	Oromiya	Misrak Shewa	Lome	2300	18.2	15.7	353.7	11.6	10.6	273.3	1.0	0.13	14.10	0.17
226966	Oromiya	Arssi	Sherka	2780	12.7	11.2	153.8	12.1	11.6	73.33	1.2	0.11	11.73	0.68

226252	Amara	Semen Shewa	Debre Berhan Zuria	2810	17.7	17.7	253.7	9.6	10.6	173.3	1.3	0.12	10.51	0.48
226944	Amara	Debub Wello	Dessie Zuria	1980	18.7	21.2	353.7	12.1	13.1	273.3	1.0	0.14	7.98	0.13
226941	Amara	Oromiya	Bati	1960	15.7	13.7	253.7	5.1	9.6	73.33	0.6	0.09	12.33	3.42
226939	Oromiya	Misrak Harerge	Deder	2200	7.2	13.7	153.8	3.6	4.6	73.33	-1.3	0.05	14.79	0.88
226256	Amara	Semen Shewa	Angolela Terana Asag	2780	14.7	14.7	253.7	10.6	9.6	73.33	1.9	0.11	10.60	0.86
226261	SNNP	Hadiya	Soro	2250	12.7	13.7	153.8	15.1	15.6	173.3	1.0	0.12	9.92	0.79
226258	Amara	Semen Shewa	Angolela Terana Asag	2780	17.7	16.7	253.7	12.1	11.6	173.3	0.2	0.13	9.89	0.53
226259	SNNP	Hadiya	Soro	2250	13.7	15.7	153.8	11.7	10.6	73.33	1.5	0.11	9.12	1.67
226270	Amara	Semen Shewa	Debre Berhan Zuria	3020	15.7	14.7	153.8	10.9	11.6	173.3	2.2	0.12	6.69	1.15
226318	SNNP	Hadiya	Soro	2430	13.2	10.7	153.8	10.1	8.1	73.33	1.5	0.10	11.24	1.38
226316	Amara	Semen Shewa	Moretna Jiru	2650	9.7	11.7	153.8	7.9	6.1	73.33	2.5	0.08	5.98	0.99
226284	Oromiya	Arssi	Sherka	2355	16.7	13.7	253.7	7.1	12.1	173.3	1.7	0.11	8.39	0.25
226283	Oromiya	Arssi	Sherka	2355	13.7	15.7	253.7	8.1	9.6	73.33	2.5	0.10	6.18	0.09
226276	Oromiya	Arssi	Sherka	2630	7.7	8.7	153.8	5.1	4.6	73.33	0.9	0.06	12.47	0.37

226355	Oromiya	Arssi	Tena	2400	13.2	16.7	53.75	11.6	13.1	73.33	0.5	0.11	14.33	3.97
226343	Amara	Semen Shewa	Angolela Terana Asag	2780	15.7	14.7	253.7	11.6	14.1	173.3	1.3	0.12	13.15	0.84
231571	Oromiya	Arssi	Dodotana Sire	2650	15.7	14.7	153.8	12.6	9.6	173.3	0.9	0.13	12.47	0.11
226341	Oromiya	Misrak Shewa	Ada'a Chukala	2755	12.7	11.7	253.7	8.1	10.1	173.3	0.9	0.09	12.67	0.60
226376	Oromiya	Semen Shewa	Yaya Gulelena D/Liba	2700	11.7	10.7	153.8	11.1	8.1	173.3	1.4	0.10	12.30	0.41
226369	Oromiya	Arssi	Robe	2100	13.7	11.7	153.8	10.6	12.6	73.33	1.8	0.11	11.16	0.53
226368	Oromiya	Arssi	Robe	2110	15.7	9.7	153.8	11.1	8.4	73.33	0.9	0.12	13.18	0.36
226815	Oromiya	Bale	Sinanana Dinsho	2530	10.7	8.7	53.75	11.6	13.6	73.33	1.5	0.10	10.71	0.52
226385	Oromiya	Mirab Shewa	Ambo	1970	15.7	12.7	153.8	15.1	22.6	173.3	1.2	0.14	11.54	0.41
226379	Oromiya	Semen Shewa	Gerar Jarso	2800	18.2	17.7	253.7	14.1	10.1	173.3	-0.3	0.15	13.39	0.50
243731	Amara	Semen Gondar	Gondar Zuria	2050	14.7	14.7	253.7	12.1	10.6	173.3	1.9	0.12	9.32	0.75
243727	Amara	Semen Gondar	Dabat	2605	12.7	13.7	253.7	10.6	12.6	73.33	1.0	0.10	12.17	0.41
243726	Amara	Semen Gondar	Debark	3115	15.7	10.2	353.7	10.6	7.6	173.3	1.6	0.12	12.30	1.47
243723	Tigray	Mehakelegnaw	Adwa	2030	14.7	14.2	153.8	11.6	14.6	73.33	0.7	0.12	12.04	0.35
243722	Tigray	Mehakelegnaw	Adwa	2075	10.7	12.7	153.8	7.6	9.6	73.33	1.4	0.08	11.77	0.64

243721	Tigray	Mehakelegnaw	Kola Temben	1990	16.7	16.2	153.8	8.6	10.6	73.33	1.6	0.11	11.06	0.42
243720	Tigray	Mehakelegnaw	Kola Temben	1990	17.7	21.2	353.7	8.6	12.1	73.33	1.2	0.12	11.73	0.53
243714	Tigray	Mehakelegnaw	Degua Temben	2620	15.2	17.7	353.7	9.1	13.6	173.3	1.0	0.11	8.69	1.44
243711	Tigray	Debubawi	Endamehoni	2330	16.7	15.7	253.7	9.1	9.6	173.3	0.8	0.12	11.03	0.45
231604	Oromiya	Misrak Harerge	Kombolcha	2420	14.2	11.7	153.8	12.6	9.6	73.33	1.0	0.12	12.37	1.54
231612	Oromiya	Misrak Harerge	Kurfa Chele	2510	9.7	18.2	153.8	9.1	11.6	73.33	1.7	0.08	9.10	1.74
231611	Oromiya	Misrak Harerge	Kurfa Chele	2630	14.7	11.2	153.8	9.1	12.6	73.33	1.6	0.11	11.93	0.50
231605	Oromiya	Misrak Harerge	Kombolcha	2420	15.7	17.2	253.7	9.1	14.6	73.33	1.2	0.11	12.25	0.57
226933	Oromiya	Arssi	Gedeb	2555	11.7	13.7	153.8	11.1	10.6	73.33	1.0	0.10	11.14	0.57
226932	Oromiya	Arssi	Gedeb	2440	9.7	13.7	353.7	9.6	12.4	73.33	0.9	0.09	11.24	0.96
226931	Oromiya	Arssi	Gedeb	2440	16.7	20.7	353.7	15.1	16.1	173.3	1.7	0.14	12.10	0.45
226930	Oromiya	Arssi	Kofele	2570	14.2	8.7	53.75	10.1	9.6	173.3	1.4	0.11	10.17	1.81
7565	Amara	Debub Wello	Were Ilu	2800	16.8	18.1	173.7	16.5	12.9	93.33	1.3	0.15	8.76	0.81
7341	Oromiya	Mirab Harerge	Tulo	2420	13.8	16.6	193.7	4.5	12.4	93.33	0.6	0.08	12.33	0.71
222439	Amara	Semen Gondar	Debark	2720	15.3	14.1	193.7	2.5	4.9	123.3	1.1	0.08	13.79	1.04
222389	Oromiya	Arssi	Amigna	2490	15.8	16.6	173.7	8	8.9	0	2.2	0.11	7.15	0.17

222381	Oromiya	Arssi	Chole	2760	12.8	11.6	133.8	3.5	5.9	43.33	-0.4	0.07	10.38	0.76
7459	Somali	Shinile	Afdem	1800	14.3	14.1	193.7	5.5	8.4	93.33	0.5	0.09	12.61	0.49
7453	Amara	Debub Gondar	Farta	2330	13.8	13.1	203.7	7.5	7.9	103.3	0.2	0.10	10.40	0.65
226223	Oromiya	Misrak Shewa	Ada'a Chukala	2800	17.3	15.6	193.7	11	15.9	153.3	1.4	0.13	13.04	0.85
222292	Amara	Semen Gondar	Gondar Zuria	2750	17.3	15.1	203.7	6.5	10.9	83.33	0.8	0.11	12.48	0.77
226154	Oromiya	Misrak Shewa	Ada'a Chukala	2083	13.8	15.6	183.8	7.5	10.9	153.3	0.9	0.10	14.63	0.77
219348	Oromiya	Borena	Yabelo	1550	9.8	14.6	193.7	6.5	9.4	103.3	0.4	0.07	12.66	3.04
222376	Oromiya	Arssi	Sherka	2995	12.8	22.6	223.7	6.5	9.9	123.3	-0.6	0.09	13.85	0.85
222313	Oromiya	Bale	Sinanana Dinsho	2250	10.3	15.6	203.7	9.5	13.4	153.3	0.9	0.09	13.08	0.70
222300	Oromiya	Bale	Agarfa	2460	12.3	13.2	133.8	8	9.9	133.3	1.0	0.09	6.27	0.91
216837	Oromiya	Misrak Harerge	Meta	2160	13.8	14.6	133.8	8	11.4	143.3	1.2	0.10	10.53	0.34
226153	Oromiya	Misrak Shewa	Ada'a Chukala	2083	18.3	16.1	133.8	8	10.4	93.33	1.7	0.12	10.89	0.89
222800	Oromiya	Bale	Goro	1900	13.3	14.1	183.8	9.5	8.4	163.3	0.6	0.10	8.75	0.74
216099	Oromiya	Arssi	Gedeb	2600	15.3	12.6	253.7	9	10.9	153.3	0.7	0.11	11.55	0.71
214589	Amara	Debub Wello	Debresina	2540	17.3	15.6	193.7	11.5	11.9	113.3	1.1	0.13	10.14	0.18
214495	Oromiya	Arssi	Gedeb	2600	14.8	17.6	243.8	10.5	11.4	153.3	0.8	0.11	13.50	0.60

214488	Amara	Semen Gondar	Gondar Zuria	2750	14.3	15.6	213.8	9.5	9.9	43.33	0.4	0.11	12.37	1.20
222798	Oromiya	Bale	Goro	1760	13.8	17.1	263.8	9	10.4	153.3	0.9	0.10	13.20	0.44
222761	SNNP	Bench Maji	Konso Special	1500	15.8	16.6	223.7	9.5	13.4	103.3	0.7	0.11	12.05	0.45
222712	Amara	Misrak Gojam	Shebel Berenta	2420	17.8	17.1	243.8	8	10.4	113.3	0.2	0.12	11.40	0.04
222705	Amara	Semen Wello	Dawuntna Delant	2865	13.8	13.1	233.8	6	9.4	143.3	0.7	0.09	16.02	1.23
222691	Amara	Semen Wello	Wadla	2250	15.3	13.6	203.7	10	10.4	143.3	0.4	0.11	14.11	0.70
214312	Amara	Semen Gondar	Wegera	2720	16.8	15.1	213.8	9	9.4	143.3	0.1	0.12	15.40	0.96
212648	Amara	Debub Wello	Debresina	2370	13.8	14.6	193.7	7.5	13.4	123.3	-0.3	0.10	11.14	0.86
211488	SNNP	Bench Maji	Konso Special	1860	18.3	16.1	133.8	9.5	11.9	103.3	0.4	0.12	14.61	0.57
208934	Oromiya	Mirab Shewa	Cheliya	2780	16.8	9.6	133.8	8	11.4	143.3	0.9	0.11	11.98	0.03
204830	Oromiya	Mirab Shewa	Walisona Goro	2000	18.3	15.1	193.7	10	10.4	43.33	0.3	0.13	15.88	0.53
204586	Amara	Agew Awi	Dangela	2400	15.8	16.6	133.8	2	2.9	93.33	0.0	0.08	9.65	0.86
204585	Amara	Agew Awi	Dangela	2400	6.8	11.6	293.7	5.5	12.4	143.3	0.2	0.06	11.40	0.15
222610	Amara	Debub Gondar	Lay Gayint	3050	10.8	13.1	243.8	7	10.4	143.3	0.9	0.08	9.73	0.57
222604	Amara	Debub Gondar	Lay Gayint	3000	15.3	16.1	133.8	9	9.4	113.3	1.5	0.11	5.09	1.04
222583	Oromiya	Misrak Harerge	Kersa	2380	16.3	15.6	183.8	7.5	10.9	123.3	2.0	0.11	8.95	0.57



222582	Oromiya	Misrak Harerge	Kersa	2380	16.3	18.6	183.8	8.5	10.4	63.33	1.1	0.11	15.04	0.44
204571	Oromiya	Mirab Shewa	Ambo	2500	16.3	18.6	243.8	8.5	9.9	93.33	0.1	0.11	12.40	0.79
204543	Oromiya	Mirab Shewa	Dendi	2600	16.8	15.1	193.7	5.5	8.4	93.33	1.1	0.10	14.53	0.35
204542	Oromiya	Mirab Shewa	Dendi	2600	14.8	10.6	193.7	8	7.4	43.33	-0.2	0.10	11.64	0.52
204522	Oromiya	Semen Shewa	Gerar Jarso	2820	11.3	16.1	213.8	3.5	7.4	103.3	1.1	0.07	10.77	1.27
222560	Oromiya	Arssi	Bekoji	2530	17.8	15.6	183.8	8.5	13.4	113.3	1.3	0.12	14.08	1.35
222559	Oromiya	Arssi	Bekoji	2530	14.8	12.1	173.7	10	9.4	43.33	0.6	0.11	14.06	0.57
204476	Amara	Semen Gondar	Gondar Zuria	2510	12.8	17.6	213.8	8.5	11.9	93.33	0.9	0.10	12.69	0.42
204506	Oromiya	Semen Shewa	Kembibit	2850	17.8	14.6	183.8	8.5	8.4	153.3	0.6	0.12	14.57	0.63
204509	Oromiya	Semen Shewa	Kembibit	2850	11.8	11.6	193.7	5.5	6.9	123.3	0.0	0.08	12.65	0.73
204511	Amara	Semen Shewa	Moretna Jiru	2640	8.8	11.6	223.7	6	7.4	123.3	0.7	0.07	13.28	0.70
204521	Oromiya	Semen Shewa	Gerar Jarso	2820	19.8	15.6	223.7	17	16.4	123.3	1.6	0.17	5.26	0.91
226161	Oromiya	Arssi	Hitosa	2033	11.8	16.1	193.7	6.5	10.9	143.3	0.9	0.08	13.20	1.14
222581	Oromiya	Misrak Harerge	Kersa	2380	13.8	16.6	193.7	10.5	10.9	103.3	0.6	0.11	14.06	0.51
222680	Amara	Debub Wello	Dessie Zuria	2640	12.8	14.1	173.7	9.5	11.4	103.3	0.5	0.10	14.84	0.65
204463	Oromiya	Arssi	Jeju	2600	11.8	14.1	193.7	20	18.4	173.3	0.3	0.14	13.38	0.93

222556	Oromiya	Arssi	Sherka	2400	15.8	18.6	143.7	5.5	10.4	113.3	1.3	0.10	11.95	0.38
204454	Oromiya	Arssi	Jeju	2620	8.8	9.6	163.7	18	15.4	133.3	1.1	0.12	11.57	0.25
222552	Oromiya	Arssi	Gedeb	2495	12.8	15.1	193.7	14	11.4	43.33	0.2	0.12	9.40	1.02
204453	Oromiya	Arssi	Jeju	2660	15.3	16.6	213.8	13.5	11.4	163.3	0.3	0.13	17.12	0.99
204444	Oromiya	Arssi	Chole	2920	9.8	16.6	193.7	12	10.4	43.33	1.6	0.10	7.39	1.14
204432	Oromiya	Arssi	Jeju	2760	10.3	13.1	183.8	9	13.4	153.3	0.9	0.09	9.02	1.19
222531	Amara	Semen Gondar	Gondar Zuria	2510	15.3	14.1	173.7	7.5	8.9	163.3	2.2	0.10	8.76	0.62
222550	Oromiya	Arssi	Gedeb	2495	14.8	14.6	223.7	9	6.9	163.3	1.7	0.11	9.14	0.89
222529	Amara	Semen Gondar	Gondar Zuria	2710	15.8	18.6	233.8	11	13.4	123.3	1.3	0.12	12.14	0.44
222527	Amara	Semen Gondar	Gondar Zuria	2740	17.8	14.1	243.8	7	8.9	43.33	0.1	0.11	13.40	0.85
204428	Oromiya	Arssi	Jeju	2690	17.3	18.6	183.8	11.5	12.4	183.3	0.7	0.13	9.31	1.07
204410	Oromiya	Arssi	Merti	2275	15.3	17.6	223.7	7.5	8.9	43.33	-0.2	0.10	15.14	1.02
204409	Amara	Misrak Gojam	Enarj Enawga	2390	17.8	17.6	223.7	12.5	13.4	193.3	-1.1	0.14	10.77	0.79
16352	Oromiya	Misrak Wellega	Limu	2168	18.8	17.6	203.7	4.5	7.4	93.33	0.9	0.10	10.96	0.54
203777	Amara	Semen Gondar	Gondar Zuria	2100	15.8	19.1	213.8	11	14.4	103.3	0.6	0.12	11.33	1.63
222450	Oromiya	Semen Shewa	Mulona Sululta	2500	14.8	20.6	183.8	10.5	15.4	153.3	1.0	0.11	13.62	0.52

222451	Oromiya	Semen Shewa	Mulona Sululta	2500	15.8	19.6	203.7	13	14.9	113.3	1.0	0.13	10.65	1.02
222520	Amara	Semen Gondar	Wegera	2850	16.8	19.6	223.7	9	14.9	133.3	1.4	0.12	12.33	0.81
222454	Oromiya	Semen Shewa	Mulona Sululta	2735	17.3	19.1	243.8	10	11.9	123.3	1.2	0.12	11.76	0.75
222482	Oromiya	Misrak Wellega	Guto Wayu	2470	14.8	20.6	203.7	10.5	15.4	123.3	1.5	0.11	12.34	3.71
222484	Oromiya	Misrak Wellega	Guto Wayu	2470	15.3	17.6	243.8	10.5	13.4	113.3	1.4	0.12	11.98	0.45
8314	SNNP	Semen Omo	Chencha	2600	16.8	19.1	253.7	20.5	16.9	153.3	0.9	0.18	9.02	0.63
7991	Oromiya	Mirab Shewa	Walisona Goro	2000	16.8	16.1	203.7	10	10.4	103.3	0.6	0.12	13.06	0.76
7506	Amara	Semen Wello	Meket	2750	12.8	11.6	213.8	3.5	6.4	63.33	1.0	0.07	12.90	0.80
7946	Tigray	Mirabawi	Tahtay Koraro	1960	15.3	16.6	173.7	8	9.4	73.33	0.5	0.10	11.60	0.43
7451	Amara	Debub Gondar	Este	2330	15.8	15.6	203.7	7.5	3.4	43.33	0.5	0.10	13.34	0.86
222405	Oromiya	Arssi	Jeju	2650	14.3	16.6	153.8	2.5	6.4	53.33	0.9	0.08	14.43	1.25
222437	Amara	Semen Gondar	Gondar Zuria	2510	12.8	14.6	163.7	5.5	7.4	43.33	0.1	0.08	12.40	1.48
KSN1	KARC			NA	16.1	19.7	242.5	9.4	10.5	63.33	1.2	0.11	12.30	0.36
KSN2	KARC			NA	15.6	16.2	252.5	8.9	10	73.33	1.0	0.11	13.14	0.70
KSN3	KARC			NA	14.1	16.2	212.5	9.9	10	73.33	1.4	0.11	12.54	0.75
KSN4	KARC			NA	13.6	15.7	142.5	10.4	11.5	113.3	1.1	0.11	9.98	0.17

KSN5	KARC	NA	15.1	15.7	162.5	7.4	7.5	133.3	1.2	0.10	14.56	1.03
KSN6	KARC	NA	21.1	14.7	152.5	9.2	9.9	91.33	1.1	0.14	16.10	1.54
KSN7	KARC	NA	11.6	16.2	242.5	9.9	10	133.3	1.2	0.10	16.18	0.61
KSN8	KARC	NA	18.1	16.2	52.5	9.4	11.5	103.3	1.7	0.12	12.83	0.70
KSN9	KARC	NA	16.6	15.2	152.5	11.2	12.5	143.3	0.2	0.12	13.25	0.66
KSN10	KARC	NA	16.3	17.7	203.3	10.6	11.5	96.67	0.2	0.12	11.74	0.77
KSN11	KARC	NA	17.1	18.7	292.5	9.2	10	83.33	0.3	0.12	12.99	0.40
KSN12	KARC	NA	12.6	15.2	112.5	7.9	9.5	73.33	1.3	0.09	11.78	0.58
KSN13	KARC	NA	18.6	17.2	212.5	11.4	10.5	53.33	1.4	0.13	11.27	0.72
KSN14	KARC	NA	20.1	17.7	232.5	12.9	14.5	143.3	1.2	0.15	14.76	0.63
KSN15	KARC	NA	21.1	16.7	192.5	12.4	10.5	83.33	0.8	0.15	10.38	0.78
KSN16	KARC	NA	19.6	15.7	222.5	8.4	5.5	53.33	1.0	0.13	12.74	0.04
KSN17	KARC	NA	13.6	17.7	192.5	12.9	13	143.3	1.1	0.12	13.65	0.61
KSN18	KARC	NA	12.1	16.7	222.5	11.4	12	43.33	0.3	0.11	11.98	0.46
KSN19	KARC	NA	13.6	16.7	162.5	12.4	9.5	73.33	0.9	0.12	14.98	0.82
KSN20	KARC	NA	15.5	17.7	203.3	8.2	10.8	93.33	0.8	0.11	14.35	0.70

KSN21	KARC	NA	19.1	20.2	352.5	11.4	12.5	163.3	1.3	0.14	11.97	0.55
KSN22	KARC	NA	12.1	16.7	232.5	8.9	11	143.3	0.7	0.09	12.40	0.37
KSN23	KARC	NA	15.6	16.7	222.5	10.4	10.5	93.33	0.9	0.12	11.81	0.49
KSN24	KARC	NA	17.1	16.2	172.5	10.9	12	103.3	1.0	0.13	11.43	0.41
KSN25	KARC	NA	12.6	18.2	202.5	11.4	12.5	93.33	1.2	0.11	13.53	0.69
KSN26	KARC	NA	18.1	16.7	132.5	12.4	12.5	133.3	1.2	0.14	14.76	0.64
KSN27	KARC	NA	16.6	17.2	202.5	12.4	13.5	153.3	1.2	0.13	13.21	0.69
KSN28	KARC	NA	16.1	17.7	192.5	8.9	10.5	83.33	1.5	0.11	14.81	0.64
KSN29	KARC	NA	14.1	14.2	62.5	10.9	12	193.3	0.5	0.11	14.69	0.68
KSN30	KARC	NA	14.2	17	220	9.2	11.8	123.3	0.8	0.11	11.10	0.50
KSN31	KARC	NA	17.6	15.2	102.5	10.4	11.5	73.33	0.8	0.13	9.87	1.16
KSN32	KARC	NA	19.1	20.2	252.5	11.4	10	113.3	0.3	0.14	11.98	0.53
KSN33	KARC	NA	17.1	18.2	152.5	10.2	11.5	93.33	0.7	0.12	12.40	0.55
KSN34	KARC	NA	21.1	20.2	342.5	10.4	11	63.33	0.7	0.14	11.89	0.41
KSN35	KARC	NA	16.1	16.2	262.5	13.4	12.5	83.33	1.0	0.13	12.82	0.24
KSN36	KARC	NA	13.1	17.2	282.5	9.4	10.5	73.33	-0.4	0.10	10.23	1.01

KSN37	KARC	NA	11.6	16.2	92.5	8.4	13	113.3	1.1	0.09	13.14	0.50
KSN38	KARC	NA	12.6	12.2	22.5	11.4	10.5	83.33	0.9	0.11	11.81	0.66
KSN39	KARC	NA	14.1	17.7	192.5	10.9	10	73.33	0.8	0.11	12.83	0.51
KSN40	KARC	NA	15.8	17.7	203.3	10.4	11.7	103.3	1.2	0.12	12.82	0.55
KSN41	KARC	NA	9.6	14.2	142.5	10.9	11.5	83.33	1.5	0.09	11.81	0.26
KSN42	KARC	NA	16.6	16.7	222.5	10.4	10.5	73.33	0.8	0.12	11.60	0.33
KSN43	KARC	NA	14.1	17.7	172.5	9.9	9	63.33	1.3	0.11	11.78	0.36
KSN44	KARC	NA	15.1	16.2	252.5	10.9	11	83.33	1.2	0.12	12.11	0.18
KSN45	KARC	NA	16.6	20.7	292.5	9.9	11	143.3	1.5	0.12	10.57	1.03
KSN46	KARC	NA	16.6	15.7	262.5	8.4	11.5	123.3	0.1	0.11	14.00	0.73
KSN47	KARC	NA	13.6	14.7	172.5	9.9	11	103.3	1.9	0.11	11.63	0.88
KSN48	KARC	NA	15.6	16.7	302.5	8.9	13	173.3	2.1	0.11	10.89	0.72
KSN49	KARC	NA	15.6	14.7	252.5	9.4	12.5	123.3	1.1	0.11	13.65	0.68
KSN50	KARC	NA	14.2	17.5	223.3	13.8	13.5	123.3	1.4	0.13	12.34	0.19
KSN51	KARC	NA	19.6	20.2	372.5	6.9	11.5	93.33	-6.9	0.12	6.55	1.32
KSN52	KARC	NA	20.1	15.7	142.5	5.9	8	33.33	1.0	0.12	12.74	0.36

KSN53	KARC	NA	17.1	17.7	192.5	10.9	13.5	193.3	0.6	0.13	11.67	0.35
KSN54	KARC	NA	17.1	16.2	302.5	8.9	12	203.3	0.3	0.12	14.73	0.48
KSN55	KARC	NA	3.6	8.2	22.5	11.9	12.5	133.3	1.8	0.07	13.15	0.74
KSN56	KARC	NA	15.6	14.2	42.5	10.4	13.5	173.3	1.7	0.12	13.93	0.79
KSN57	KARC	NA	13.1	15.7	132.5	10.4	12	173.3	0.6	0.11	14.31	0.47
KSN58	KARC	NA	15.6	15.7	72.5	13.9	13	203.3	1.0	0.13	11.51	0.21
KSN59	KARC	NA	20.6	17.7	282.5	8.4	12	153.3	1.1	0.13	11.20	1.06
KSN60	KARC	NA	16	17.3	190	12.8	13	146.7	1.0	0.13	13.96	0.43
KSN61	KARC	NA	14.1	15.7	182.5	9.4	14.5	113.3	0.8	0.11	11.10	1.13
KSN62	KARC	NA	14.1	15.7	182.5	8.9	11.5	133.3	1.4	0.10	12.15	0.11
KSN63	KARC	NA	17.1	14.2	312.5	11.4	12	153.3	1.2	0.13	13.34	1.04
KSN64	KARC	NA	13.1	17.2	252.5	9.4	13.5	113.3	1.0	0.10	11.51	0.10
KSN65	KARC	NA	16.6	15.7	152.5	8.9	9	103.3	0.2	0.11	9.74	0.75
KSN66	KARC	NA	17.1	15.7	202.5	10.4	12	133.3	1.2	0.12	13.34	0.70
KSN67	KARC	NA	14.1	16.7	332.5	9.4	15	163.3	0.4	0.11	10.72	0.83
KSN68	KARC	NA	10.1	11.7	132.5	9.4	11.5	163.3	1.1	0.09	12.45	0.28

KSN69	KARC	NA	17.1	16.2	182.5	10.4	10.5	153.3	1.5	0.12	13.93	0.70
KSN70	KARC	NA	15.5	16	186.7	10	11.3	176.7	0.8	0.11	12.62	0.58
KSN71	KARC	NA	19.6	17.7	292.5	9.9	13	153.3	1.5	0.13	12.69	0.10
KSN72	KARC	NA	14.6	18.2	172.5	10.9	12.5	183.3	0.8	0.11	16.29	0.34
KSN73	KARC	NA	18.1	21.7	282.5	8.9	13	153.3	1.5	0.12	13.93	0.66
KSN74	KARC	NA	19.1	18.7	242.5	13.9	13	193.3	0.6	0.15	13.91	0.69
KSN75	KARC	NA	19.6	17.7	152.5	9.9	12	103.3	0.5	0.13	12.45	0.77
KSN76	KARC	NA	15.6	16.7	112.5	12.4	11.5	123.3	1.4	0.13	13.57	0.61
KSN77	KARC	NA	13.6	17.7	92.5	11.4	12	103.3	1.0	0.11	12.23	0.68
KSN78	KARC	NA	18.6	20.2	392.5	9.9	13	123.3	1.4	0.13	13.04	0.49
KSN79	KARC	NA	15.1	18.7	162.5	9.9	11	123.3	0.4	0.11	15.31	0.50
KSN80	KARC	NA	16.5	18.7	200	14.2	13.2	143.3	0.2	0.14	16.99	0.75
KSN81	KARC	NA	17.6	14.2	172.5	16.4	10.5	143.3	1.1	0.15	12.62	0.75
KSN82	KARC	NA	16.1	14.7	242.5	9.9	14.5	153.3	1.6	0.12	10.92	0.92
KSN83	KARC	NA	16.1	16.2	172.5	7.4	13.5	133.3	1.0	0.11	13.96	0.60
KSN84	KARC	NA	17.1	17.7	252.5	11.4	13	183.3	1.2	0.13	15.98	0.65



KSN85	KARC	NA	20.6	17.7	302.5	12.4	14	133.3	0.6	0.15	13.91	1.25
KSN86	KARC	NA	15.6	17.2	242.5	12.4	14	103.3	1.1	0.13	13.14	0.50
KSN87	KARC	NA	16.6	20.7	252.5	10.4	12	143.3	1.1	0.12	12.43	0.77
KSN88	KARC	NA	15.6	16.7	112.5	9.9	11.5	153.3	1.0	0.11	13.64	1.13

\*SSI=stress susceptibility index, STI=stress tolerance index, GMP=geometric mean performance index, RID=relative drought resistance index

**Supplementary Table 2. SEDs and LSD values for root length (RL) shoot length (SHL) and fresh biomass (FBM) data at 5% probability under stress and non-stress conditions**

Comparison	Non-stress						Stress					
	RL		SHL		FBM		RL		SHL		FBM	
	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	
Between	SED	LSD	SED	LSD	SED	LSD	SED	LSD	SED	LSD	SED	LSD
Two replicated means	2.2	4.6	2.1	4.5	40.0	90.0	3.3	7.1	2.3	4.9	28.8	61.8
Two means in the same block	3.8	8.0	3.7	7.9	70.0	20.0	5.8	12.4	3.9	8.4	49.9	106.9
Two means in different blocks	4.0	8.5	3.9	8.3	70.0	20.0	6.1	13.1	4.2	8.9	52.9	113.4
Adjusted and replicated means	3.3	7.0	3.2	6.8	61.0	100.0	5.0	10.7	3.4	7.3	43.2	92.6

\* SED=standard error of differences and LSD=least significant difference at 5% probability.