Dissecting the genotype × environment interaction for potato tuber yield and components

Table S1. *F* values of main effects and their interactions resulting from three-way analysis of variance (ANOVA) of potato yield and yield-related traits.

Source	df	MY	UT	NMTP	AMTW	TSG	CT < 40 mm	CT 40–60 mm	CT > 60 mm
Blocks	2	1.03^{ns}	1.03^{ns}	2.70^{ns}	1.04^{ns}	1.82^{ns}	1.16^{ns}	4.23^{*}	2.75^{ns}
Location (L)	2	5.06^{**}	22.78^{***}	16.38^{***}	55.00^{***}	19.30^{***}	43.97^{***}	35.16^{***}	21.75^{***}
Year (Y)	3	189.03^{***}	5.39^{**}	204.42^{***}	117.93^{***}	46.87^{***}	121.83^{***}	82.81^{***}	42.56^{***}
Genotype (G)	4	41.08^{***}	9.97^{***}	5.09^{***}	49.35^{***}	85.11^{***}	57.45^{***}	5.84^{***}	70.41^{***}
(L) × (Y)	6	32.05^{***}	8.42^{***}	23.77^{***}	52.16^{***}	2.49^{*}	28.04^{***}	11.98^{***}	34.57^{***}
(L) × (G)	8	23.09^{***}	5.50^{***}	4.43^{***}	8.23^{***}	5.44^{***}	3.00^{**}	10.78^{***}	8.67^{***}
(Y) × (G)	12	21.41^{***}	4.10^{***}	4.87^{***}	5.89^{***}	3.84^{***}	11.10^{***}	3.50^{***}	6.34^{***}
(L) × (Y) × (G)	23	14.89^{***}	6.16^{***}	3.50^{***}	8.03^{***}	4.90^{***}	4.92^{***}	6.02^{***}	9.55^{***}
CV (%)		9.37	45.19	14.39	10.20	0.37	22.45	6.91	24.32

Values are given as *F* of Fisher; df = degrees of freedom; ***, ** and * indicate significant at $p<0.001$, $p<0.01$ and $p<0.05$, respectively, and ^{ns}, not significant.

MY: marketable yield; UT: unmarketable tubers; NMTP: number of marketable tubers plant^{-1}; AMTW: average marketable tuber weight; TSG: tuber specific gravity; CT: calibre tubers.

Table S2. IPC1 and IPC2 scores derived from AMMI analysis of the 5 potato genotypes and 12 environments under study.

	MY		**UT**		**NMTP**	
	IPC1	*IPC2*	*IPC1*	*IPC2*	*IPC1*	*IPC2*
G1	-0.4780	-1.8771	-0.3716	1.1494	-1.0524	0.3942
G2	4.3870	1.9072	0.0391	1.5943	-0.8683	1.0011
G3	-0.0022	-0.1790	-2.3028	0.3360	0.0944	-0.5809
G4	0.7121	0.7217	-0.9948	-2.6634	-0.4689	-0.2096
G5	-4.6191	2.4274	3.6301	-0.4163	1.9952	0.5552
E1	-0.8515	-1.2301	-2.0402	-0.5796	-0.3454	-0.5601
E2	-0.7875	-0.9922	0.5613	-2.0243	0.3387	0.4272
E3	1.5780	-2.3283	3.2907	0.7669	-1.4834	0.9154
E4	0.2657	1.3447	-0.1681	-0.7129	0.3290	0.2166
E5	1.1335	-0.8468	0.3256	0.4354	-0.6399	-1.3203
E6	-0.8034	1.3255	-1.1681	0.7743	-0.0720	-0.4538
E7	-1.3200	1.1051	-0.4188	0.5951	1.2394	0.3908
E8	-3.6066	1.2364	-1.3530	1.6824	1.0435	-0.2571
E9	-0.6702	-2.7106	0.6673	0.7352	-0.2617	0.1715
E10	-0.1037	0.6180	0.4549	-0.1645	0.1313	0.0781
E11	2.9198	-0.7755	-0.3355	-0.8855	-0.4336	0.2904
E12	3.2461	3.2538	0.1839	-0.6225	0.1540	0.1014
	AMTW		**TSG**		**CT 40–60 mm**	
	IPC1	*IPC2*	*IPC1*	*IPC2*	*IPC1*	*IPC2*
G1	-7.6064	-1.8699	-1.7956	0.3657	-2.2319	2.0865
G2	4.4574	-4.6008	1.3904	2.0834	-0.1853	-2.2758
G3	-4.1127	-1.4650	-0.8259	-0.4305	-2.2694	0.7675
G4	2.3599	-0.1390	-2.7113	0.8936	0.6642	-2.4724
G5	-1.4595	0.1447	3.0906	0.0879	4.0224	1.8941
E1	-2.6053	1.2478	-1.0723	0.3680	2.3816	-1.6799
E2	-4.3718	-3.1247	-1.6652	-0.0292	-1.5437	0.5578
E3	-0.5414	1.6677	-0.7539	1.7744	-0.3113	-0.0715
E4	0.4721	-0.5693	-0.5761	-0.4247	-1.5473	-0.3606
E5	0.0657	1.2118	-0.0794	0.9660	-2.2331	0.4616
E6	3.1530	4.4031	-0.3617	0.0455	-0.6351	0.3492
E7	0.6642	-1.7859	3.0090	0.0210	0.0706	-1.5149
E8	-1.0601	2.4596	-0.2645	0.2605	-1.4326	-1.0055
E9	-2.0298	1.1686	-0.9572	-1.2068	0.6052	0.0441
E10	0.5895	0.1389	1.9425	-2.1399	2.4266	-0.1106
E11	-0.8171	-3.7089	-0.8322	-1.6172	0.9148	-0.2522
E12	6.4809	-3.1088	1.6109	1.9823	1.3044	3.5826

Notes: MY: marketable yield; UT: unmarketable tubers; NMTP: number of marketable tubers plant^{-1}; AMTW: average marketable tuber weight; TSG: tuber specific gravity; CT: calibre tubers.

Table S3. PC1 and PC2 scores derived from GGE analysis of the 5 potato genotypes and 12 environments under study.

	MY		**UT**		**NMTP**	
	PC1	*PC2*	*PC1*	*PC2*	*PC1*	*PC2*
G1	-6.5463	28.2662	-2.6320	5.9194	-2.8470	1.3854
G2	-33.9705	-6.7596	-1.2457	7.,4698	-2.0205	0.3176
G3	13.8074	-12.1439	-8.7411	-5.7860	-0.0189	0.8505
G4	0.2302	-14.1337	-4.5284	-4.8294	0.0651	-3.5560
G5	26.4793	4.7710	17.1472	-2.7737	4.8213	1.0026
E1	-0.0830	0.3419	-0.3771	-0.3940	-0.2046	0.1700
E2	-0.0563	0.2822	0.2039	-0.5816	0.0787	0.3326
E3	-0.3695	0.2946	0.7886	0.0448	-0.6728	0.4540
E4	-0.2376	0.1031	0.0351	-0.3312	0,0795	0.2435
E5	-0.1861	-0.1690	0.1338	-0.0937	-0.2807	-0.4528
E6	0.0173	-0.1511	-0.1894	-0.1609	-0.0617	-0.1488
E7	-0.0382	0.0234	-0.0280	-0.1024	0.4530	0.2658
E8	0.3076	0.0233	-0.2536	0.1646	0.3554	0.3316
E9	-0.0540	0.3639	0.2067	-0.0124	-0.1799	0.4045
E10	-0.0237	0.1264	0.1578	-0.1289	0.0099	0.0906
E11	-0.6737	0.2701	0.0179	-0.5530	-0.2146	0.0471
E12	-0.4562	-0.6141	0.0791	0.0004	0.0183	0.1154
	AMTW		**TSG**		**CT 40–60 mm**	
	PC1	*PC2*	*PC1*	*PC2*	*PC1*	*PC2*
G1	-1.4614	-73.4821	-17.2352	6.8425	-10.6486	7.9367
G2	80.3824	21.6201	8.8943	-6.6518	-1.5527	-8.4690
G3	-78.4322	27.8449	34.4425	4.7227	-13.5105	3.9061
G4	25.6059	18.6728	-14.9341	10.7365	5.2337	-12.6752
G5	-26.0947	5.3444	-11.1675	-15.6499	20.4780	9.3015
E1	0.1436	-0.2826	0.2092	0.2218	0.4003	-0.3326
E2	0.2508	-0.5580	0.2259	0.3713	-0.3746	0.1872
E3	-0.0157	0.0180	0.0645	0.0744	-0.1176	0.0160
E4	0.3108	-0.0164	0.3078	0.1666	-0.3353	-0.1175
E5	0.1466	0.0204	0.1747	-0.0165	-0.4663	0.0843
E6	0.1463	0.3999	0.2872	0.1021	-0.1869	0.1320
E7	0.2756	0.0201	0.2573	-0.6438	-0.0369	-0.2910
E8	0.1534	-0.1022	0.2907	0.0837	-0.3496	-0.1522
E9	0.0656	-0.1813	0.3407	0.2753	0.0532	0.0682
E10	0.4671	-0.0518	0.4873	-0.2876	0.3863	0.0641
E11	0.4660	-0.2451	0.3208	0.2482	0.1263	-0.0419
E12	0.4874	0.5843	0.2936	-0.3568	0.1709	0.8351

Notes: MY: marketable yield; UT: unmarketable tubers; NMTP: number of marketable tubers plant^{-1}; AMTW: average marketable tuber weight; TSG: tuber specific gravity; CT: calibre tubers.