

Supplementary Table 1. Mean performance of 36 wheat genotypes for various yield based selection indices under Low N conditions over the years (2013-14 and 2014-15).

Code	Name of genotypes	TOL		SSI		GMP		YSI	
		2013-14	2014-15	2013-14	2014-15	2013-14	2014-15	2013-14	2014-15
G1	DPW 621-50	593	615	0.792	0.867	1333	1339	0.643	0.634
G2	MACS 6478	448	451	0.701	0.738	1174	1202	0.684	0.689
G3	MACS 3125	472	480	0.717	0.771	1202	1211	0.677	0.675
G4	HD 2967	438	435	0.698	0.735	1153	1165	0.686	0.690
G5	BH 1146	506	540	0.820	0.870	1088	1169	0.631	0.633
G6	KRL 210	556	498	0.935	0.838	1004	1132	0.579	0.646
G7	CBW 38	473	478	0.766	0.830	1110	1100	0.655	0.650
G8	DBW 17	575	585	0.884	0.952	1119	1126	0.602	0.598
G9	RAJ 4229	482	474	0.810	0.843	1052	1069	0.635	0.644
G10	NIAW 301	447	482	0.736	0.869	1102	1047	0.668	0.633
G11	K 0307	620	452	1.108	0.855	879	1001	0.501	0.639
G12	HW 2044	545	528	0.923	0.944	1001	1028	0.584	0.602
G13	RAJ 4037	450	443	0.793	0.848	1010	992	0.643	0.642
G14	MACS 6222	490	495	0.810	0.927	1070	987	0.635	0.609
G15	MACS 6273	480	466	0.849	0.893	986	976	0.618	0.623
G16	DBW 39	458	444	0.741	0.810	1119	963	0.666	0.633
G17	PDW 314	564	532	0.981	0.975	953	992	0.558	0.589
G18	NIAW 917	773	550	1.333	1.006	813	982	0.399	0.575
G19	KRL 213	480	444	0.871	0.889	953	936	0.608	0.625
G20	HI 8498	512	530	0.919	1.034	946	912	0.586	0.564
G21	HD 2733	618	570	1.182	1.081	793	922	0.467	0.544
G22	DBW 51	593	425	1.060	0.846	898	955	0.523	0.643
G23	DBW 71	535	598	0.891	1.055	1030	1000	0.598	0.555
G24	GW 322	385	365	0.780	0.808	883	869	0.649	0.659
G25	DBW 46	627	671	1.059	1.213	950	916	0.523	0.488
G26	DBW 14	516	488	1.060	1.044	780	829	0.522	0.560
G27	HD 2932	629	530	1.214	1.092	774	844	0.453	0.539
G28	KRL 19	516	446	1.068	1.020	772	782	0.519	0.569
G29	NW 1067	931	639	1.563	1.232	719	852	0.296	0.480
G30	DBW16	551	557	1.084	1.163	807	810	0.512	0.509
G31	MACS 2496	596	546	1.318	1.168	640	789	0.406	0.507
G32	RAJ 4238	650	645	1.332	1.323	685	767	0.400	0.442
G33	KRL 1-4	734	644	1.517	1.324	604	766	0.317	0.441
G34	DBW 88	931	884	1.559	1.581	723	764	0.297	0.333
G35	KH 65	529	551	1.568	1.373	406	617	0.294	0.421
G36	WH 1021	661	720	1.316	1.565	711	635	0.407	0.339
	Mean	566	533	1.021	1.012	923	957	0.540	0.573
	Min.	385	365	0.698	0.735	406	617	0.294	0.333
	Max.	931	884	1.568	1.581	1333	1339	0.686	0.690

TOL = Tolerance index, SSI = Stress susceptibility index, GMP= Geometric mean productivity, and YSI=Yield stability index.

Supplementary Table 2. Percent reduction in the mean performance of seven yield components under low N and high N conditions over two years (2013-14 and 2014-15).

Genotype Code	Name of genotype	PRPH	PRPT	PRTGW	PRGNPS	PRGWPS	PRBY	PRGY
G1	DPW 621-50	10.75	20.62 (3)	8.89	18.42	4.09 (10)	12.08 (6)	36.12 (10)
G2	MACS 6478	11.24	25.00 (9)	4.26 (7)	1.54 (6)	15.79	17.67 (8)	31.38 (2)
G3	MACS 3125	13.98	33.04	10.87	15.52	3.10 (7)	11.35 (4)	32.43 (3)
G4	HD 2967	4.60 (4)	40.28	8.89	11.29	25.63	19.51 (10)	31.19 (1)
G5	BH 1146	2.54 (3)	25.21 (10)	6.82 (10)	15.09	20.49	34.98	36.83
G6	KRL 210	14.89	28.18	11.11	23.73	4.98	25.44	38.64
G7	CBW 38	7.29 (8)	26.40	2.27 (4)	18.97	9.22	21.92	34.72 (5)
G8	DBW 17	16.28	37.10	0.01 (3)	5.17 (10)	5.04	36.99	40.00
G9	RAJ 4229	10.47	24.11 (7)	15.91	31.75	-16.92 (1)	26.83	36.05 (9)
G10	NIAW 301	1.11 (1)	18.02 (2)	2.33 (5)	4.48 (9)	15.54	25.67	34.91 (6)
G11	K 0307	11.76	27.83	2.33 (6)	7.41	14.90	27.22	42.98
G12	HW 2044	2.27 (2)	27.59	13.64	17.19	-3.86 (2)	18.83 (9)	40.74
G13	RAJ 4037	8.14 (9)	23.89 (5)	6.67 (9)	22.22	1.23 (5)	22.63	35.71 (8)
G14	MACS 6222	10.64	33.91	2.33 (6)	12.12	1.57 (6)	11.75 (5)	37.73
G15	MACS 6273	6.59 (6)	24.76 (8)	0.00 (2)	-8.33 (2)	12.85	24.59	37.96
G16	DBW 39	11.46	24.04 (6)	9.09	8.93	0.81 (4)	7.10 (1)	34.93 (7)
G17	PDW 314	16.67	17.89 (1)	11.11	13.11	4.07 (9)	27.93	42.65
G18	NIAW 917	9.89	31.58	13.64	11.11	20.42	33.77	51.20
G19	KRL 213	13.04	33.01	9.76	8.57	9.09	29.86	38.37
G20	HI 8498	9.68	28.71	29.82	12.50	0.36 (3)	20.00	42.50
G21	HD 2733	9.30	42.64	9.30	18.18	23.64	36.11	49.29
G22	DBW 51	12.12	37.61	13.64	-1.61 (5)	29.31	27.01	41.82
G23	DBW 71	12.50	34.26	13.95	6.90	14.85	14.55 (7)	42.38
G24	GW 322	8.24 (10)	26.21	7.32	6.67	13.16	23.27	34.63 (4)
G25	DBW 46	13.59	31.25	15.91	10.94	21.15	34.24	49.43
G26	DBW 14	9.52	33.91	5.00 (8)	18.75	15.45	31.48	45.89
G27	HD 2932	14.71	30.00	11.36	14.52	30.77	40.12	50.35
G28	KRL 19	6.98 (7)	22.68 (4)	9.76	1.75 (7)	8.73	22.91	45.64
G29	NW 1067	9.78	38.84	14.89	-3.33 (3)	5.34	25.64	61.52
G30	DBW16	11.36	24.76 (8)	7.14	16.13	6.22	11.13 (2)	48.94
G31	MACS 2496	8.89	35.96	12.82	-3.23 (4)	29.15	28.31	54.07
G32	RAJ 4238	10.84	31.19	7.14	1.92 (8)	9.72	36.52	57.82
G33	KRL 1-4	10.87	32.23	-2.63 (1)	7.27	34.47	42.65	61.85
G34	DBW 88	8.70	35.09	11.63	16.67	7.62	28.19	68.45
G35	KH 65	6.25 (5)	31.71	7.69	12.00	24.77	11.31 (3)	63.53
G36	WH 1021	9.80	28.43	7.32	-16.00 (1)	3.45 (8)	46.41	62.65
Mean		9.90	29.66	8.94	9.95	11.83	25.44	44.31
SE of mean		0.61	1.01	0.99	1.58	1.85	1.61	1.70
CV		36.82	20.36	66.34	95.17	93.59	37.99	23.01

PRPH-Percent reduction in plant height, PRPT- Percent reduction in productive tillers, PRTGW- Percent reduction in 1000-grain weight, PRGNPS- Percent reduction in Grains number per spike, PRGWPS- Percent reduction in grain weight per spike, PRBY- Percent reduction in biological yield per plot, PRGY- Percent reduction in grain yield per plot

Supplementary Table 3. Percent reduction in grain yield under low N and high N conditions in 2013-14, 2014-15 and across the year.

Code	Genotypes	2013-14		GY	2014-15		GY	Pooled mean		GY
		high N	low N	PR	high N	low N	PR	high N	low N	PR
G1	DPW 621-50	1662	1069	35.68	1681	1066	36.59	1672	1068	36.12
G2	MACS 6478	1419	971	31.57	1448	997	31.15	1434	984	31.38
G3	MACS 3125	1461	989	32.31	1475	995	32.54	1468	992	32.43
G4	HD 2967	1393	955	31.44	1403	968	31.00	1398	962	31.19
G5	BH 1146	1370	864	36.93	1470	930	36.73	1420	897	36.83
G6	KRL 210	1320	764	42.12	1408	910	35.37	1364	837	38.64
G7	CBW 38	1371	898	34.50	1365	887	35.02	1368	893	34.72
G8	DBW 17	1443	868	39.85	1456	871	40.18	1450	870	40.00
G9	RAJ 4229	1320	838	36.52	1332	858	35.59	1326	848	36.05
G10	NIAW 301	1348	901	33.16	1315	833	36.65	1332	867	34.91
G11	K 0307	1242	622	49.92	1252	800	36.10	1247	711	42.98
G12	HW 2044	1310	765	41.60	1325	797	39.85	1318	781	40.74
G13	RAJ 4037	1260	810	35.71	1238	795	35.78	1249	803	35.71
G14	MACS 6222	1343	853	36.49	1265	770	39.13	1304	812	37.73
G15	MACS 6273	1255	775	38.25	1236	770	37.70	1246	773	37.96
G16	DBW 39	1371	913	33.41	1210	766	36.69	1291	840	34.93
G17	PDW 314	1276	712	44.20	1293	761	41.14	1285	737	42.65
G18	NIAW 917	1287	514	60.06	1295	745	42.47	1291	630	51.20
G19	KRL 213	1223	743	39.25	1184	740	37.50	1204	742	38.37
G20	HI 8498	1236	724	41.42	1215	685	43.62	1226	705	42.50
G21	HD 2733	1160	542	53.28	1250	680	45.60	1205	611	49.29
G22	DBW 51	1242	649	47.75	1191	766	35.68	1217	708	41.82
G23	DBW 71	1332	797	40.17	1343	745	44.53	1338	771	42.38
G24	GW 322	1096	711	35.13	1070	705	34.11	1083	708	34.63
G25	DBW 46	1314	687	47.72	1311	640	51.18	1313	664	49.43
G26	DBW 14	1080	564	47.78	1108	620	44.04	1094	592	45.89
G27	HD 2932	1150	521	54.70	1150	620	46.09	1150	571	50.35
G28	KRL 19	1072	556	48.13	1036	590	43.05	1054	573	45.64
G29	NW 1067	1322	391	70.42	1229	590	51.99	1276	491	61.52
G30	DBW16	1128	577	48.85	1135	578	49.07	1132	578	48.94
G31	MACS 2496	1004	408	59.36	1108	562	49.28	1056	485	54.07
G32	RAJ 4238	1083	433	60.02	1155	510	55.84	1119	472	57.82
G33	KRL 1-4	1074	340	68.34	1153	509	55.85	1114	425	61.85
G34	DBW 88	1325	394	70.26	1325	441	66.72	1325	418	68.45
G35	KH 65	749	220	70.63	951	400	57.94	850	310	63.53
G36	WH 1021	1115	454	59.28	1090	370	66.06	1103	412	62.65
	Mean	1254	689	46.01	1263	730	42.72	1259	709	44.31
	Min.	749	220	31.44	951	370	31.00	850	310	31.19
	Maxi.	1662	1069	70.63	1681	1066	66.72	1672	1068	68.45

Supplementary Table 4. Parameters of PCA for low and high N conditions during 2013-14 and 2014-15 for the indices.

PCA analysis of grain yield (GY) and its component traits under high N (a) and low N (b) during 2014 among 36 wheat cultivars during 2014

a) High Nitrogen

PRINCIPAL COMPONENT ANALYSIS

Statistics	PC1	PC2	PC3	PC4	PC5
Standard deviation	2.1872	1.3525	1.2283	1.0701	0.9886
Proportion of Variance	0.368	0.1407	0.1161	0.0881	0.0752
Cumulative Proportion	0.368	0.5087	0.6248	0.7128	0.788
EigenValues	4.7839	1.8292	1.5087	1.145	0.9773

b) Low Nitrogen

PRINCIPAL COMPONENT ANALYSIS

Statistics	PC1	PC2	PC3	PC4	PC5
Standard deviation	2.0337	1.504	1.3568	1.1655	0.9735
Proportion of Variance	0.3182	0.174	0.1416	0.1045	0.0729
Cumulative Proportion	0.3182	0.4922	0.6338	0.7383	0.8112
EigenValues	4.1361	2.2622	1.841	1.3583	0.9478

PCA analysis of grain yield (GY) and its component traits under high N (a) and low N (b) among 36 wheat cultivars during 2015

a) High Nitrogen

PRINCIPAL COMPONENT ANALYSIS

Statistics	PC1	PC2	PC3	PC4	PC5
Standard deviation	2.0968	1.3767	1.2685	1.048	0.9662
Proportion of Variance	0.3382	0.1458	0.1238	0.0845	0.0718
Cumulative Proportion	0.3382	0.484	0.6078	0.6923	0.7641
EigenValues	4.3965	1.8953	1.6091	1.0983	0.9336

b) Low Nitrogen

PRINCIPAL COMPONENT ANALYSIS

Statistics	PC1	PC2	PC3	PC4	PC5
Standard deviation	2.0646	1.5479	1.3439	1.0856	0.9394
Proportion of Variance	0.3279	0.1843	0.1389	0.0907	0.0679
Cumulative Proportion	0.3279	0.5122	0.6511	0.7418	0.8097
EigenValues	4.2627	2.3959	1.8061	1.1785	0.8825

PCA analysis of grain yield (GY) and selection indices during 2014 (a) and 2015 (b) under low N conditions among 36 wheat cultivars

a).During 2014

PRINCIPAL COMPONENT ANALYSIS

Statistics	PC1	PC2	PC3	PC4	PC5
Standard deviation	2.2143	1.0365	0.1486	0.0228	0.0018
Proportion of Variance	0.8172	0.1791	0.0037	0.0001	0
Cumulative Proportion	0.8172	0.9962	0.9999	1	1
EigenValues	4.903	1.0744	0.0221	0.0005	0

b).During 2015

PRINCIPAL COMPONENT
ANALYSIS

Statistics	PC1	PC2	PC3	PC4	PC5
Standard deviation	2.1492	1.1699	0.1093	0.0201	0.0023
Proportion of Variance	0.7698	0.2281	0.002	0.0001	0
Cumulative Proportion	0.7698	0.9979	0.9999	1	1
EigenValues	4.619	1.3687	0.0119	0.0004	0

Table S5. Correlation between grain and agronomic traits under high nitrogen and low nitrogen conditions during 2014 and 2015.

Trait	High nitrogen		Low nitrogen	
	2014	2015	2014	2015
Plant Height	-0.07 ^{NS}	0.02 ^{NS}	-0.09 ^{NS}	0.05 ^{NS}
Fs/Fm	-0.04 ^{NS}	0.1 ^{NS}	0.3 ^{NS}	0.32 ^{NS}
TKW	0.49***	0.36*	0.59***	0.58***
GNPS	0.37*	0.4**	0.08 ^{NS}	0.03 ^{NS}
GWPS	0.47**	0.45**	0.69***	0.64***
Biological Yield	0.8***	0.7***	0.78***	0.75***
Harvest Index	0.28 ^{NS}	0.49**	0.83***	0.72***
NDVI	0.62***	0.64***	0.55***	0.65***
CT	-0.31 ^{NS}	-0.16 ^{NS}	-0.17 ^{NS}	-0.08 ^{NS}
CHL	0.48**	0.47**	0.46**	0.51**
Fv/Fm	0.39*	0.5**	-0.11 ^{NS}	-0.15 ^{NS}
Fv/Fo	0.41*	0.36*	0.1 ^{NS}	-0.26 ^{NS}