

Table S1: *Lens* genotypes characterized for traits related to phosphorus use efficiency

Sl. No.	Species	Genotype(s)
1.	<i>Lens culinaris</i> subsp. <i>culinaris</i> Cultivated varieties	L4717, L4147, L4727, L4076, PL06, PL02, DPL62, K75, IPL81, IPL220, JL-1, IPL-321, L4594, DPL15, NDL1, K-75, WBL-77, IPL-316, HUL-57, SEHORE 74-3, PL-05, L-830, L4729, JL-7, HM-1
	Advanced breeding lines	L4618, BM4, KBL-104, LH84-8, LL931, L4603, PRECOZ, PL-97, PL117, KLS-218, MC6, L4649, IG69568, IC321808, IC560135, IG136607, I-G-Y-5, IG134340, LL699, IC268238, IPL7103, L 04610, IG129560, L4650, P43120, IG115, IC208352, L4602
2.	<i>L. ervoides</i>	Wild EC 718383, EC 718355, EC718351, EC718330, EC718339, EC718366, EC718347, EC718409, EC718329, EC718348, EC718332, EC718326, EC718331, EC718336
3.	<i>L.c. ssp. odemensis</i>	EC 718306, EC 718464, EC718283, EC718287, EC718309, EC718312, EC718243, EC718276, EC718677, EC718292, EC718297, EC718281, EC718295, EC718282
4.	<i>L. lamottei</i>	EC718692,
5.	<i>L. nigricans</i>	EC714238
6.	<i>L. orientalis</i>	ILWL-118

Table S 2: Classification of genotypes into efficient (E), medium (M) and inefficient (I) types based on five traits recorded under normal and low phosphorus conditions.

Genotypes	Low Phosphorus					High Phosphorus											
	SD W	R D W	T D W	R S R	P %	Pu pE	Pu tiE	Total score/ out of 20	SD W	R D W	T D W	R S R	P %	Pu pE	Pu tiE	Total score/ out of 20	Total score/ out of 40
L4717	M	M	M	M	E	M	M	15	M	M	M	I	M	M	M	13	28
L4618	M	M	M	M	M	M	M	14	M	M	M	M	M	M	M	14	28
L4147	E	M	M	I	M	E	E	16	M	M	M	M	M	M	E	15	31
L4727	E	M	E	I	M	M	M	15	E	M	M	I	M	M	M	14	29
L4076	M	M	M	M	M	M	M	14	M	I	M	I	M	M	M	12	26
BM4	E	M	E	I	M	M	E	16	M	M	M	M	M	M	E	15	31
PL06	E	E	E	M	M	M	E	18	M	M	M	I	M	M	E	14	32
PL02	M	M	M	M	M	M	E	15	I	I	I	M	M	M	E	12	27
DPL62	E	E	E	I	M	M	E	17	M	I	M	I	M	M	E	13	30
WBL-81	E	E	E	M	M	M	E	18	M	M	M	M	M	I	E	14	32
IPL81	E	M	E	M	M	M	M	16	M	E	M	E	M	M	M	16	32
IPL220	M	M	M	M	M	M	E	15	I	I	I	M	E	M	E	13	28
JL-1	I	I	I	M	E	M	M	12	M	M	M	M	M	M	M	14	26
IPL-321	M	M	M	M	M	M	I	13	E	M	E	I	I	M	I	13	26
KBL-104	M	M	M	M	M	M	M	14	M	M	M	M	M	M	M	14	28
L4594	M	M	M	M	M	M	M	14	M	M	M	M	M	M	M	14	28
LH84-8	M	I	M	I	M	M	E	13	I	M	I	E	E	M	E	15	28
LL931	M	E	E	M	E	M	M	17	E	M	E	M	I	I	M	14	31
DPL15	E	E	E	M	M	M	M	17	E	E	E	M	I	I	M	15	32
NDL1	M	E	M	E	M	M	M	16	M	M	M	M	M	I	M	13	29
K-75	M	M	M	E	E	M	M	16	M	M	M	M	M	M	M	14	30
WBL-77	I	M	M	E	E	M	M	15	I	M	I	E	E	E	M	15	30
IPL-316	M	M	M	M	E	M	M	15	M	M	M	M	M	M	M	14	29
L4603	M	M	M	M	M	M	M	14	M	M	M	M	M	M	M	14	28
PRECO Z	I	M	I	E	E	M	M	14	I	M	I	E	E	E	M	15	29
HUL-57	E	M	E	I	M	M	E	16	M	M	M	M	E	E	E	17	33
SEHORE 74-3	E	E	E	M	M	M	E	18	M	M	M	M	M	M	E	15	33
PL-97	E	E	E	I	I	M	E	16	M	M	M	M	M	E	E	16	32
IPL-406	M	M	M	M	I	M	I	12	M	E	E	E	M	E	I	17	29
PL-05	M	M	M	M	M	M	I	13	E	E	E	E	M	E	I	18	31
PL117	M	M	M	M	M	M	I	13	E	E	E	M	M	M	I	16	29
KLS-218	M	M	M	M	M	M	I	13	M	M	M	I	M	E	I	13	26
L-830	M	M	M	M	M	M	M	14	M	M	M	M	E	M	M	15	29
L4729	M	M	M	M	M	M	M	14	M	M	M	M	M	E	M	15	29
MC6	E	E	E	M	E	M	M	18	M	M	M	M	E	M	M	15	33
JL-7	M	M	M	M	M	M	E	15	I	I	I	M	M	M	E	12	27
HM-1	M	M	M	E	E	E	M	17	I	M	I	E	M	M	M	13	30
L4649	M	I	M	M	M	E	E	15	M	I	M	M	E	E	E	16	31

IG6956 8	M	M	M	M	M	E	M	15		I	I	I	M	E	M	M	12	27
IC3218 08	M	I	I	M	M	M	E	13		M	M	M	M	E	M	E	16	29
IC5601 35	M	M	M	M	E	M	I	14		M	M	M	M	M	M	M	14	28
IG1366 07	M	M	M	M	M	M	M	14		M	M	M	E	M	M	M	15	29
I-G-Y- 50	M	E	M	M	M	I	M	14		M	I	M	I	M	M	M	12	26
IG1343 40	M	M	M	M	M	M	E	15		M	M	M	M	M	M	E	15	30
LL699	M	M	M	M	M	I	M	13		M	E	M	E	M	M	M	16	29
IC2682 38	M	M	M	M	M	M	M	14		E	E	E	M	M	M	M	17	31
IPL710 3	M	M	M	M	M	M	I	13		E	M	E	M	M	E	I	16	29
L4610	I	M	M	M	M	M	I	12		M	M	M	M	M	M	I	13	25
IG1295 60	M	I	M	I	M	M	M	12		M	M	M	M	M	M	M	14	26
L4650	M	M	M	M	I	M	I	12		I	M	I	M	M	M	I	11	23
P43120	M	M	M	M	M	M	E	15		I	I	I	M	E	M	E	13	28
IG115	M	M	M	M	M	M	M	14		M	M	M	M	M	E	M	15	29
IC2083 52	M	M	M	M	M	M	M	14		M	E	M	E	M	M	M	16	30
L4602	M	M	M	M	I	M	M	13		E	E	E	M	M	M	M	17	30
EC7183 83	M	M	M	M	M	M	I	13		M	M	M	M	M	M	I	13	26
EC 718355	I	M	M	E	M	M	M	14		M	M	M	E	M	M	M	15	29
EC 718351	I	M	M	E	I	M	M	13		M	M	M	M	M	M	M	14	27
EC 718306	I	M	M	E	M	M	M	14		E	M	E	M	M	M	M	16	30
EC 718464	M	M	M	M	I	M	I	12		M	M	M	M	M	M	I	13	25
EC7182 92	M	M	M	M	M	M	I	13		I	M	I	E	M	M	I	12	25
EC7186 92	I	M	M	E	M	M	M	14		M	M	M	M	E	I	M	14	28
EC7142 38	E	E	E	M	E	M	E	19		E	E	E	M	M	M	E	18	37
EC7183 32	E	E	E	M	M	E	M	18		M	M	M	M	I	I	M	12	30
EC7182 83	M	M	M	M	M	E	E	16		M	M	M	M	I	I	E	13	29
EC7182 97	M	M	M	M	M	E	M	15		I	M	I	E	I	M	M	12	27
EC7183 39	E	M	E	I	M	E	M	16		E	E	E	M	E	M	M	18	34
EC7183 66	M	M	M	M	M	E	M	15		E	E	E	M	I	M	M	16	31
EC7183 47	M	M	M	E	M	M	I	14		M	M	M	M	M	M	I	13	27
EC7184 09	M	M	M	M	M	M	M	14		M	M	M	M	M	I	M	13	27
EC7183 29	M	M	M	M	I	M	M	13		M	M	M	M	M	M	M	14	27
EC7182 87	M	M	M	M	M	M	M	14		M	M	M	E	M	I	M	14	28
EC7183 48	E	E	E	M	I	M		14		E	E	E	M	I	M	M	16	30
EC7183 09	E	E	E	I	I	E	M	16		M	M	M	E	I	M	M	14	30

EC7183 30	M	I	M	M	I	E	E	14	M	M	M	M	M	M	E	15	29
EC7183 26	M	M	M	M	M	E	M	15	M	M	M	M	M	M	M	14	29
EC7183 12	M	M	M	M	I	M	I	12	E	E	E	M	M	M	I	16	28
EC7182 81	M	M	M	M	I	M	I	12	E	E	E	M	M	I	I	15	27
EC7182 95	M	M	M	M	M	M	I	13	E	E	E	M	I	I	I	14	27
EC7183 31	E	M	E	I	M	M	I	14	M	M	M	M	I	M	I	12	26
EC7182 43	M	E	M	E	I	M	M	15	M	M	M	I	M	M	M	13	28
EC7182 76	M	M	M	E	I	M	M	14	M	M	M	I	M	E	M	14	28
EC7182 82	I	M	M	E	I	I	M	12	M	M	M	M	E	I	M	14	26
EC7183 36	M	M	M	E	M	I	M	14	M	M	M	M	I	M	M	13	27
EC7186 77	E	M	E	I	M	I	M	14	M	M	M	M	M	I	M	13	27
ILWL- 118	I	M	M	E	M	I	E	14	M	M	M	M	I	M	E	14	28

Table S3: Phosphorus deficiency tolerance indices were calculated for 85 genotypes grown under high and low phosphorus conditions.

Genotypes	Phosphorus Deficiency Tolerance Indices							
	SSI	MPI	GMPI	HMI	STI	TI	SI	STS
DPL15	1.20	100.53	2.88	2.91	3.37	1.43	-0.66	110.46
EC714238	0.97	79.56	2.45	2.66	2.75	0.57	-0.13	87.86
EC718348	1.00	79.56	2.43	2.61	2.72	0.66	-0.21	87.78
EC718281	1.70	73.97	1.38	0.69	1.37	2.75	-1.76	78.40
EC718295	1.50	69.78	1.64	1.29	1.69	1.98	-1.31	75.07
PL-05	1.59	66.98	1.41	0.92	1.40	2.25	-1.52	71.44
L4727	0.65	62.78	2.08	2.41	2.25	-0.24	0.57	69.85
EC718339	1.20	62.78	1.78	1.78	1.86	1.03	-0.65	68.58
EC718366	1.65	62.78	1.19	0.61	1.14	2.38	-1.65	66.45
LL931	1.15	57.19	1.66	1.69	1.71	0.85	-0.55	62.55
IC268238	1.60	53.00	1.01	0.52	0.94	2.07	-1.54	56.00
EC718312	1.53	46.01	0.93	0.55	0.85	1.75	-1.39	48.69
EC718309	0.42	41.81	1.49	1.82	1.50	-0.74	1.07	46.96
PL117	1.56	40.41	0.73	0.32	0.64	1.75	-1.45	42.40
L4602	1.52	39.02	0.75	0.39	0.66	1.61	-1.37	41.07
IPL81	0.93	36.22	1.17	1.32	1.12	0.17	-0.06	39.94
IPL-321	1.53	34.82	0.63	0.26	0.53	1.57	-1.38	36.43
PL-97	0.27	27.83	1.08	1.39	1.02	-1.01	1.41	31.72
IPL-406	1.49	23.64	0.37	0.07	0.27	1.30	-1.29	24.35
EC 718306	1.62	23.64	0.19	-0.28	0.09	1.66	-1.59	23.70
IPL7103	1.58	22.24	0.22	-0.21	0.11	1.52	-1.50	22.39
EC718332	0.18	18.04	0.78	1.08	0.69	-1.15	1.61	21.06
EC718331	0.50	18.04	0.75	1.01	0.65	-0.69	0.89	20.65
PL06	0.15	16.65	0.74	1.03	0.65	-1.19	1.68	19.56
EC718326	1.39	15.25	0.25	0.05	0.14	0.94	-1.06	15.56
MC6	0.11	12.45	0.61	0.90	0.51	-1.24	1.76	14.99
DPL62	0.08	11.05	0.57	0.85	0.47	-1.28	1.84	13.50
EC 718464	1.40	12.45	0.15	-0.06	0.05	0.94	-1.10	12.43
WBL-81	0.26	9.66	0.52	0.79	0.41	-1.06	1.43	11.75
IG129560	1.39	11.05	0.13	-0.08	0.02	0.89	-1.07	10.95
BM4	0.40	6.86	0.42	0.67	0.31	-0.88	1.12	8.50
EC718287	1.04	6.86	0.25	0.30	0.14	0.12	-0.29	7.38
IC208352	1.35	6.86	0.04	-0.13	-0.06	0.75	-0.99	6.48
SEHORE 74-3	0.08	2.67	0.31	0.57	0.20	-1.28	1.83	4.30
EC718677	0.23	2.66	0.31	0.56	0.20	-1.10	1.49	4.12
HUL-57	0.20	1.27	0.27	0.51	0.16	-1.15	1.57	2.63
LL699	1.31	2.67	-0.05	-0.19	-0.14	0.62	-0.90	2.01
EC718330	1.36	2.66	-0.08	-0.26	-0.17	0.71	-1.00	1.87
EC718383	0.99	-0.13	0.06	0.12	-0.04	-0.01	-0.19	-0.19
L4717	1.19	-0.13	-0.04	-0.10	-0.14	0.35	-0.63	-0.69
EC718243	0.66	-2.93	0.08	0.25	-0.02	-0.56	0.55	-2.62
KBL-104	1.11	-2.93	-0.08	-0.08	-0.17	0.17	-0.45	-3.54

EC718276	1.11	-2.93	-0.08	-0.08	-0.17	0.17	-0.45	-3.54
NDL1	0.83	-7.12	-0.09	0.02	-0.18	-0.33	0.17	-7.52
IG136607	1.11	-7.12	-0.20	-0.21	-0.28	0.12	-0.44	-8.13
L4147	0.40	-8.52	-0.05	0.15	-0.14	-0.92	1.12	-8.36
EC718347	1.17	-9.92	-0.32	-0.37	-0.38	0.21	-0.59	-11.36
KLS-218	0.85	-12.72	-0.27	-0.17	-0.34	-0.33	0.12	-13.70
EC718283	0.85	-12.72	-0.27	-0.17	-0.34	-0.33	0.12	-13.70
IPL-316	0.91	-12.71	-0.29	-0.21	-0.35	-0.24	-0.01	-13.82
I-G-Y-50	0.41	-14.11	-0.22	-0.04	-0.30	-0.92	1.09	-14.50
L4603	0.95	-14.11	-0.34	-0.29	-0.40	-0.20	-0.10	-15.43
L4594	1.06	-14.11	-0.39	-0.38	-0.44	-0.01	-0.35	-15.68
EC 718355	1.27	-14.11	-0.50	-0.62	-0.54	0.35	-0.81	-16.23
IC560135	1.21	-15.51	-0.50	-0.58	-0.54	0.21	-0.66	-17.57
L4618	1.00	-18.31	-0.48	-0.46	-0.52	-0.15	-0.21	-20.13
L-830	0.79	-19.71	-0.46	-0.36	-0.50	-0.47	0.26	-21.23
EC718329	0.92	-19.71	-0.50	-0.44	-0.53	-0.29	-0.02	-21.49
IG115	1.04	-19.70	-0.54	-0.53	-0.57	-0.11	-0.29	-21.74
EC718336	0.93	-22.50	-0.58	-0.54	-0.61	-0.29	-0.06	-24.57
K-75	0.99	-22.50	-0.61	-0.58	-0.62	-0.20	-0.19	-24.70
EC 718351	1.05	-26.70	-0.75	-0.76	-0.74	-0.15	-0.31	-29.41
IG134340	1.03	-28.09	-0.78	-0.78	-0.76	-0.20	-0.26	-30.89
L4729	1.07	-29.49	-0.84	-0.86	-0.81	-0.15	-0.35	-32.51
EC718409	0.91	-30.89	-0.83	-0.79	-0.80	-0.38	-0.01	-33.70
L4610	1.08	-32.29	-0.93	-0.96	-0.88	-0.15	-0.39	-35.60
L4076	0.47	-33.69	-0.83	-0.70	-0.80	-0.92	0.97	-35.97
EC718692	0.94	-36.48	-1.01	-0.99	-0.93	-0.38	-0.08	-39.87
EC718282	0.94	-36.48	-1.01	-0.99	-0.93	-0.38	-0.08	-39.87
ILWL-118	0.94	-36.48	-1.01	-0.99	-0.93	-0.38	-0.08	-39.87
HM-1	0.31	-39.28	-0.99	-0.85	-0.92	-1.10	1.33	-41.81
L4649	0.86	-40.68	-1.11	-1.07	-1.01	-0.51	0.10	-44.28
IC321808	1.00	-40.68	-1.15	-1.16	-1.04	-0.33	-0.22	-44.58
PL02	0.21	-42.08	-1.07	-0.94	-0.98	-1.19	1.54	-44.72
EC718292	0.67	-42.08	-1.11	-1.03	-1.01	-0.74	0.52	-45.45
IPL220	0.27	-43.47	-1.11	-0.99	-1.01	-1.15	1.42	-46.31
L4650	0.37	-46.27	-1.21	-1.10	-1.08	-1.06	1.18	-49.52
EC718297	0.65	-46.27	-1.24	-1.16	-1.10	-0.78	0.57	-49.98
LH84-8	0.33	-47.67	-1.25	-1.14	-1.10	-1.10	1.29	-50.97
PRECOZ	0.86	-47.67	-1.32	-1.30	-1.15	-0.56	0.09	-51.90
JL-1	1.29	-47.67	-1.47	-1.62	-1.26	-0.01	-0.84	-52.88
WBL-77	0.75	-49.07	-1.34	-1.29	-1.17	-0.69	0.35	-53.21
JL-7	0.54	-53.26	-1.44	-1.36	-1.23	-0.92	0.80	-57.41
IG69568	0.06	-54.66	-1.45	-1.35	-1.24	-1.33	1.87	-58.16
P43120	0.56	-56.06	-1.52	-1.46	-1.29	-0.92	0.78	-60.47