

Table S1. Place of origin and status of lentil lines screened for tolerance against imazethapyr herbicide

Sr. No.	Genotypes	Origin	Line status
1	EC28514	South Africa	Germplasm line
2	EC72393	Unknown origin	Germplasm line
3	EC78390	USA	Germplasm line
4	EC78391	USA	Germplasm line
5	EC78414	USA	Germplasm line
6	EC78424	Unknown origin	Germplasm line
7	EC78430	Unknown origin	Germplasm line
8	EC78436	USA	Germplasm line
9	EC78439	Unknown origin	Germplasm line
10	EC78440	USA	Germplasm line
11	EC78441B	Unknown origin	Germplasm line
12	EC78442	Unknown origin	Germplasm line
13	EC78446	Unknown origin	Germplasm line
14	EC78447	Unknown origin	Germplasm line
15	EC78452	USA	Germplasm line
16	EC78455	Unknown origin	Germplasm line
17	EC78455B	Unknown origin	Germplasm line
18	EC78472	USA	Germplasm line
19	EC78474	USA	Germplasm line
20	EC78477	Unknown origin	Germplasm line
21	EC78484	USA	Germplasm line
22	EC78490	USA	Germplasm line
23	EC78503A	Unknown origin	Germplasm line
24	EC78509	Unknown origin	Germplasm line
25	EC78547	Unknown origin	Germplasm line
26	EC223294	Unknown origin	Germplasm line
27	EC223397	Unknown origin	Germplasm line
28	EC225488B	Unknown origin	Germplasm line
29	EC241429	Israel	Germplasm line
30	EC255491	Mexico	Germplasm line
31	EC255492	Mexico	Germplasm line
32	EC255494	Unknown origin	Germplasm line
33	EC267514	Unknown origin	Germplasm line
34	EC267526A	Unknown origin	Germplasm line
35	EC267527	Syria	Germplasm line
36	EC267528B	Syria	Germplasm line
37	EC267530	Syria	Germplasm line

38	EC267533	Syria	Germplasm line
39	EC267535	Syria	Germplasm line
40	EC267537	Syria	Germplasm line
41	EC267539	Syria	Germplasm line
42	EC267540	Syria	Germplasm line
43	EC267544A	Unknown origin	Germplasm line
44	EC267546	Syria	Germplasm line
45	EC267547	Syria	Germplasm line
46	EC267554	Syria	Germplasm line
47	EC267555	Syria	Germplasm line
48	EC267558A	Syria	Germplasm line
49	EC267564	Syria	Germplasm line
50	EC267565	Syria	Germplasm line
51	EC267567	Syria	Germplasm line
52	EC267570	Syria	Germplasm line
53	EC267571	Syria	Germplasm line
54	EC267572	Syria	Germplasm line
55	EC267573	Syria	Germplasm line
56	EC267574	Syria	Germplasm line
57	EC267575	Syria	Germplasm line
58	EC267576B	Unknown origin	Germplasm line
59	EC267577	Syria	Germplasm line
60	EC267578	Syria	Germplasm line
61	EC267579A	Unknown origin	Germplasm line
62	EC267582	Syria	Germplasm line
63	EC267583	Syria	Germplasm line
64	EC267585	Syria	Germplasm line
65	EC267590	Unknown origin	Germplasm line
66	EC267591	Syria	Germplasm line
67	EC267595A	Unknown origin	Germplasm line
68	EC267596	Syria	Germplasm line
69	EC267598	Syria	Germplasm line
70	EC267603B	Unknown origin	Germplasm line
71	EC267607	Syria	Germplasm line
72	EC267608	Syria	Germplasm line
73	EC267609	Syria	Germplasm line
74	EC267611	Syria	Germplasm line
75	EC267614B	Unknown origin	Germplasm line
76	EC267629	Syria	Germplasm line
77	EC267644	Syria	Germplasm line
78	EC267656	Syria	Germplasm line

79	EC267657	Syria	Germplasm line
80	EC267660	Syria	Germplasm line
81	EC267662	Syria	Germplasm line
82	EC267663	Syria	Germplasm line
83	EC267664	Syria	Germplasm line
84	EC267665	Syria	Germplasm line
85	EC267668	Syria	Germplasm line
86	EC267672	Syria	Germplasm line
87	EC267677	Syria	Germplasm line
88	EC267687	Syria	Germplasm line
89	EC267688	Syria	Germplasm line
90	EC267692	Syria	Germplasm line
91	EC267702	Syria	Germplasm line
92	L830	India	Advance breeding line
93	L4076 (Shivalik)	India	Cultivar
94	L4147 (Pusa Vaibhav)	India	Cultivar
95	L4590	India	Advance breeding line
96	L4594 (Pusa Masoor 5)	India	Cultivar
97	L4709	India	Advance breeding line
98	DPL15 (Priya)	India	Cultivar
99	DPL62 (Sheri)	India	Cultivar
100	IPL220	India	Advance breeding line
101	IPL221	India	Advance breeding line
102	IPL223	India	Advance breeding line
103	IPL326	India	Advance breeding line
104	IPL327	India	Advance breeding line
105	IPL406 (Angoori)	India	Cultivar
106	PL4	India	Cultivar
107	PL024	India	Cultivar
108	PL063	India	Cultivar
109	PL117	India	Advance breeding line
110	PL134	India	Advance breeding line
111	PL141	India	Advance breeding line
112	PL146	India	Advance breeding line
113	PL406	India	Cultivar
114	NDL-12-2	India	Advance breeding line
115	VL522	India	Advance breeding line
116	LL699	India	Cultivar
117	LL931	India	Cultivar
118	LL1146	India	Advance breeding line

119	LL1203	India	Advance breeding line
120	LL1209	India	Advance breeding line
121	LL1223	India	Advance breeding line
122	LL1242	India	Advance breeding line
123	LL1252	India	Advance breeding line
124	LL1255	India	Advance breeding line
125	LL1266	India	Advance breeding line
126	LL1277	India	Advance breeding line
127	LL1316	India	Advance breeding line
128	LL1318	India	Advance breeding line
129	LL1320	India	Advance breeding line
130	LL1326	India	Advance breeding line
131	LL1336	India	Advance breeding line
132	LL1359	India	Advance breeding line
133	LL1360	India	Advance breeding line
134	LL1361	India	Advance breeding line
135	LL1362	India	Advance breeding line
136	LL1363	India	Advance breeding line
137	LL1364	India	Advance breeding line
138	LL1365	India	Advance breeding line
139	LL1366	India	Advance breeding line
140	LL1367	India	Advance breeding line
141	LL1368	India	Advance breeding line
142	LL1369	India	Advance breeding line
143	LL1370	India	Advance breeding line
144	LL1371	India	Advance breeding line
145	LL1372	India	Advance breeding line
146	LL1373	India	Advance breeding line
147	LL1374	India	Advance breeding line
148	LL1375	India	Advance breeding line
149	LL1376	India	Advance breeding line
150	LL1377	India	Advance breeding line
151	LL1378	India	Advance breeding line
152	LL1379	India	Advance breeding line
153	LL1380	India	Advance breeding line
154	LL1381	India	Advance breeding line
155	LL1382	India	Advance breeding line
156	LL1383	India	Advance breeding line
157	LL1384	India	Advance breeding line
158	LL1385	India	Advance breeding line
159	LL1386	India	Advance breeding line

160	LL1387	India	Advance breeding line
161	LL1389	India	Advance breeding line
162	LL1390	India	Advance breeding line
163	LL1391	India	Advance breeding line
164	LL1392	India	Advance breeding line
165	LL1393	India	Advance breeding line
166	LL1394	India	Advance breeding line
167	LL1395	India	Advance breeding line
168	LL1396	India	Advance breeding line
169	LL1397	India	Advance breeding line
170	LL1398	India	Advance breeding line
171	LL1399	India	Advance breeding line
172	RVL11-6	India	Advance breeding line
173	RKL604-05	India	Advance breeding line
174	RKL606-09	India	Advance breeding line
175	SL11-4	India	Advance breeding line
176	KLS113	India	Advance breeding line
177	KLB121	India	Advance breeding line
178	RLG147	India	Advance breeding line
179	RLG156	India	Advance breeding line
180	RLG157	India	Advance breeding line

Table S2. Chlorophyll content (mg chl g⁻¹ fresh tissue) of some tolerant and sensitive lentil genotypes in control and imazethapyr treated plots

	Genotype	Control	Treated	% Reduction
Tolerant	EC78452-Tolerant	3.87	3.50	9.6
	IPL406-Tolerant	4.34	3.92	9.5
	LL699-Tolerant	4.48	4.14	7.7
	LL1397-Tolerant	4.27	4.12	3.6
Sensitive	DPL15-Sensitive	3.85	2.02	47.7
	IPL327-Sensitive	4.35	2.92	33.0
	LL1377-Sensitive	4.37	3.37	22.7
	LL1365-Sensitive	3.63	2.89	20.2
Mean		4.15	3.36	19.20

LSD (p=0.05) Factor A-Herbicide (H) : 0.05

Factor B- Genotype (G) : 0.09

Interaction- H × G : 0.13

Table S3. Seed yield (kg ha⁻¹) in control and imazethapyr treated plots and percent yield reduction of lentil genotypes during 2013-14 and 2014-15

Sr. No.	Genotype	2013-14			2014-15		
		Control plot	Treated plot	% Reduction	Control plot	Treated plot	% Reduction
1	EC28514	1268.8	1040.0	18.0	1033.7	686.4	33.6
2	EC72393	1122.9	806.6	28.2	1059.7	764.3	27.9
3	EC78390	805.6	448.9	44.3	914.2	493.7	46.0
4	EC78391	1037.0	706.3	31.9	1099.3	694.8	36.8
5	EC78414	1362.8	1142.8	16.1	1307.1	1129.6	13.6
6	EC78424	986.0	691.3	29.9	914.2	613.9	32.9
7	EC78430	1078.6	859.4	20.3	1084.2	855.7	21.1
8	EC78436	912.3	729.1	20.1	995.4	751.8	24.5
9	EC78439	1231.6	870.8	29.3	1278.8	910.4	28.8
10	EC78440	969.0	740.4	23.6	1072.9	800.9	25.4
11	EC78441B	974.7	661.1	32.2	1020.0	742.3	27.2
12	EC78442	1052.1	855.7	18.7	1129.6	935.0	17.2
13	EC78446	1261.8	1027.6	18.6	1225.9	1035.1	15.6
14	EC78447	1088.0	649.8	40.3	1146.6	664.9	42.0
15	EC78452	1311.5	1096.3	16.4	1374.5	1167.1	15.1
16	EC78455	1217.4	1027.7	15.6	1050.2	645.3	38.6
17	EC78455B	965.2	738.6	23.5	936.9	698.9	25.4
18	EC78472	1401.6	634.7	54.7	1352.4	576.1	57.4
19	EC78474	1467.7	1037.0	29.3	1433.7	1003.0	30.0
20	EC78477	1232.3	636.1	48.4	939.9	524.7	44.2
21	EC78484	1346.8	955.8	29.0	1418.6	1054.0	25.7
22	EC78490	1370.4	806.6	41.1	1275.0	770.7	39.6
23	EC78503A	1121.1	589.3	47.4	1038.9	538.3	48.2
24	EC78509	1122.0	914.9	18.5	1067.2	872.7	18.2
25	EC78547	960.1	610.2	36.4	1034.7	637.3	38.4
26	EC223294	1191.9	897.2	24.7	1231.6	846.2	31.3
27	EC223397	1329.8	768.8	42.2	759.2	489.6	35.5
28	EC225488B	1180.6	872.7	26.1	1112.6	768.8	30.9
29	EC241429	1282.4	723.8	43.6	905.3	556.4	38.5
30	EC255491	766.9	498.7	35.0	842.4	589.3	30.0
31	EC255492	1158.8	763.1	34.1	1227.8	853.8	30.5
32	EC255494	1017.2	560.6	44.9	795.1	472.6	40.6
33	EC267514	1011.2	672.4	33.5	747.4	472.3	36.8
34	EC267526A	1290.1	504.3	60.9	1280.7	498.7	61.1
35	EC267527	1228.7	1042.7	15.1	1329.8	1097.4	17.5
36	EC267528B	1125.8	751.8	33.2	1193.8	800.9	32.9
37	EC267530	738.6	664.9	10.0	778.2	706.4	9.2
38	EC267533	725.3	515.7	28.9	765.0	570.4	25.4

Table S3 Cont.....

Sr. No.	Genotype	2013-14			2014-15		
		Control plot	Treated plot	% Reduction	Control plot	Treated plot	% Reduction
39	EC267535	948.2	506.2	46.6	1012.4	527.0	47.9
40	EC267537	864.5	487.3	43.6	926.3	519.7	43.9
41	EC267539	757.4	627.1	17.2	800.9	646.0	19.3
42	EC267540	1091.8	918.0	15.9	1165.4	995.4	14.6
43	EC267544A	1257.8	1031.9	18.0	885.6	579.4	34.6
44	EC267546	819.8	598.8	27.0	791.4	647.9	18.1
45	EC267547	885.9	721.6	18.6	802.8	634.7	20.9
46	EC267554	829.2	487.3	41.2	867.0	540.2	37.7
47	EC267555	946.3	676.2	28.5	1003.0	723.4	27.9
48	EC267558A	1135.2	940.7	17.1	1186.2	969.0	18.3
49	EC267564	1093.7	851.9	22.1	1163.6	961.4	17.4
50	EC267565	1025.7	789.6	23.0	993.6	778.2	21.7
51	EC267567	975.6	776.3	20.4	1059.7	865.1	18.4
52	EC267570	710.7	471.7	33.6	486.4	342.8	29.5
53	EC267571	1067.2	935.4	12.4	1042.7	904.8	13.2
54	EC267572	695.1	587.4	15.5	736.7	606.3	17.7
55	EC267573	1355.3	1018.1	24.9	1310.9	959.6	26.8
56	EC267574	1316.6	1148.4	12.8	1326.0	1173.0	11.5
57	EC267575	952.0	782.0	17.9	1112.6	902.9	18.8
58	EC267576B	1271.2	1074.8	15.5	1288.2	1129.6	12.3
59	EC267577	1301.4	1055.9	18.9	1337.3	1116.3	16.5
60	EC267578	993.6	851.9	14.3	1063.4	929.3	12.6
61	EC267579A	1424.2	1040.8	26.9	1369.4	1133.3	17.2
62	EC267582	1370.4	1144.7	16.5	1422.3	1156.0	18.7
63	EC267583	1290.1	867.0	32.8	1242.9	904.8	27.2
64	EC267585	1055.9	795.2	24.7	1135.2	846.2	25.5
65	EC267590	1306.2	1112.6	14.8	1409.1	1231.6	12.6
66	EC267591	1051.7	870.3	17.2	933.3	668.3	28.4
67	EC267595A	734.8	468.4	36.2	746.1	502.4	32.7
68	EC267596	956.7	723.4	24.4	897.2	748.0	16.6
69	EC267598	1237.2	564.4	54.4	1211.5	856.0	29.3
70	EC267603B	970.9	757.4	22.0	957.7	731.0	23.7
71	EC267607	797.1	570.4	28.4	840.6	625.2	25.6
72	EC267608	1201.3	808.4	32.7	1037.0	829.2	20.0
73	EC267609	825.4	589.3	28.6	878.3	695.1	20.9
74	EC267611	1080.4	734.8	32.0	1148.4	893.4	22.2
75	EC267614B	917.1	561.0	38.8	884.0	534.6	39.5
76	EC267629	1068.2	827.3	22.5	1140.9	893.4	21.7
77	EC267644	778.2	542.1	30.3	923.7	610.1	33.9
78	EC267656	1399.7	840.6	39.9	1278.8	989.8	22.6
79	EC267657	1230.6	1082.3	12.0	1286.3	1142.8	11.2

Table S3 Cont.....

Sr. No.	Genotype	2013-14			2014-15		
		Control plot	Treated plot	% Reduction	Control plot	Treated plot	% Reduction
80	EC267660	1159.8	855.7	26.2	1054.0	765.0	27.4
81	EC267662	808.4	413.7	48.8	861.3	508.1	41.0
82	EC267663	898.2	568.6	36.7	952.0	621.4	34.7
83	EC267664	933.1	562.9	39.7	1052.1	778.2	26.0
84	EC267665	1054.0	704.6	33.2	1133.3	793.3	30.0
85	EC267668	1211.7	827.3	31.7	1354.3	1093.7	19.2
86	EC267672	963.3	753.7	21.8	936.9	719.7	23.2
87	EC267677	1154.1	950.1	17.7	1212.7	1035.1	14.6
88	EC267687	845.0	546.8	35.3	753.9	513.8	31.8
89	EC267688	1175.8	891.6	24.2	1161.7	817.9	29.6
90	EC267692	1010.6	799.0	20.9	1084.2	797.1	26.5
91	EC267702	974.7	636.6	34.7	1122.0	936.9	16.5
92	L830	742.3	551.6	25.7	819.8	615.8	24.9
93	L4076	763.1	511.9	32.9	819.8	506.2	38.2
94	L4147	1256.8	1022.1	18.7	1134.2	851.0	25.0
95	L4590	1091.8	742.3	32.0	1318.4	1033.2	21.6
96	L4594	884.9	417.4	52.8	986.0	523.2	46.9
97	L4709	663.0	494.9	25.4	576.1	398.6	30.8
98	DPL15	1031.1	514.1	50.1	977.8	358.8	63.3
99	DPL62	1240.1	776.3	37.4	1178.7	800.9	32.1
100	IPL220	927.4	570.4	38.5	1065.3	770.7	27.7
101	IPL221	904.8	598.8	33.8	1061.6	795.2	25.1
102	IPL223	1254.2	946.3	24.5	1401.6	1187.5	15.3
103	IPL326	668.7	532.7	20.3	776.3	566.7	27.0
104	IPL327	842.2	353.2	58.1	877.4	347.3	60.4
105	IPL406	1256.7	1049.1	16.5	1206.6	1027.2	14.9
106	PL4	1055.9	814.1	22.9	1203.2	950.1	21.0
107	PL024	1119.2	672.4	39.9	1235.3	987.9	20.0
108	PL063	927.9	504.1	45.7	908.6	632.1	30.4
109	PL117	970.9	761.5	21.6	1131.4	969.0	14.4
110	PL134	870.8	581.8	33.2	997.3	615.8	38.3
111	PL141	1021.3	643.8	37.0	879.0	568.4	35.3
112	PL146	1174.9	766.9	34.7	1150.3	825.4	28.2
113	PL406	1064.5	557.2	47.7	864.2	612.3	29.1
114	NDL-12-2	1382.7	950.1	31.3	1322.2	963.3	27.1
115	VL522	855.7	634.7	25.8	950.1	723.4	23.9
116	LL699	1295.3	1136.1	12.3	1359.7	1229.6	9.6
117	LL931	1324.8	1017.7	23.2	1247.7	788.5	36.8
118	LL1146	1173	804.7	31.4	1116.3	808.4	27.6

Table S3 Cont.....

Sr. No.	Genotype	2013-14			2014-15		
		Control plot	Treated plot	% Reduction	Control plot	Treated plot	% Reduction
119	LL1203	1322.6	1147.4	13.2	1279.0	1043.6	18.4
120	LL1209	1215.3	836.3	31.2	1151.4	786.5	31.7
121	LL1223	1324.1	872.7	34.1	1231.6	923.7	25.0
122	LL1242	1231.6	774.4	37.1	1207.0	831.1	31.1
123	LL1252	1167.3	846.2	27.5	1250.4	993.6	20.5
124	LL1255	1271.2	851.9	33.0	1293.9	906.7	29.9
125	LL1266	1079.5	816.0	24.4	1082.3	946.3	12.6
126	LL1277	1426.1	974.7	31.7	1365.7	1040.8	23.8
127	LL1316	1278.8	953.9	25.4	1343.0	1076.7	19.8
128	LL1318	1231.6	833.0	32.4	1316.6	948.2	28.0
129	LL1320	1142.8	833.0	27.1	1203.2	946.3	21.4
130	LL1326	1063.4	721.6	32.1	1040.8	765.0	26.5
131	LL1336	1023.3	689.5	32.6	996.2	705.7	29.2
132	LL1359	1326.0	789.6	40.5	1361.9	931.2	31.6
133	LL1360	1199.4	931.2	22.4	1123.9	861.3	23.4
134	LL1361	1418.6	829.2	41.5	1361.9	885.9	35.0
135	LL1362	1460.1	1040.8	28.7	1382.7	1174.9	15.0
136	LL1363	1480.9	1163.6	21.4	1365.7	1174.9	14.0
137	LL1364	900.1	719.7	20.0	919.9	742.3	19.3
138	LL1365	1041.5	396.7	61.9	968.1	317.2	67.2
139	LL1366	1317.2	1003.1	23.8	1186.8	767.1	35.4
140	LL1367	1326.2	735.3	44.6	1418.9	833.5	41.3
141	LL1368	1242.9	780.1	37.2	1157.9	901.0	22.2
142	LL1369	1306.2	1087.8	16.7	1279.0	923.5	27.8
143	LL1370	1241.4	836.7	32.6	1321.5	918.7	30.5
144	LL1371	1401.6	1128.4	19.5	1297.7	1178.7	9.2
145	LL1372	1132.8	878.1	22.5	1030.5	775.1	24.8
146	LL1373	1426.1	882.1	38.1	1333.6	1006.8	24.5
147	LL1374	1424.4	1214.4	14.7	1330.0	951.4	28.5
148	LL1375	1183.4	904.8	23.5	1324.1	1080.4	18.4
149	LL1376	1267.9	1035.2	18.4	1183.5	702.9	40.6
150	LL1377	878.5	378.2	56.9	901.6	335.8	62.8
151	LL1378	1365.7	978.4	28.4	1428.0	1205.1	15.6
152	LL1379	1388.3	989.8	28.7	1460.1	1169.2	19.9
153	LL1380	1325.6	1056.8	20.3	1282.3	958.0	25.3
154	LL1381	1125.8	808.4	28.2	1059.7	816.0	23.0
155	LL1382	1050.2	816.0	22.3	1133.3	950.1	16.2
156	LL1383	1386.2	875.9	36.8	1306.3	856.3	34.5
157	LL1384	1417.7	1061.4	25.1	1529.2	926.7	39.4

Table S3 Cont.....

Sr. No.	Genotype	2013-14			2014-15		
		Control plot	Treated plot	% Reduction	Control plot	Treated plot	% Reduction
158	LL1385	1315.2	1077.1	18.1	1359.7	966.3	28.9
159	LL1386	1416.7	1011.1	28.6	1433.7	872.4	39.2
160	LL1387	944.4	663.0	29.8	986.0	757.4	23.2
161	LL1389	1178.7	698.3	40.8	810.7	512.7	36.8
162	LL1390	918.0	653.6	28.8	984.1	731.0	25.7
163	LL1391	1107.8	842.4	24.0	1052.1	808.4	23.2
164	LL1392	852.4	571.1	33.0	809.9	553.7	31.6
165	LL1393	820.3	524.7	36.0	721.0	469.6	34.9
166	LL1394	1352.6	983.2	27.3	1338.3	819.8	38.7
167	LL1395	1261.1	998.6	20.8	1128.4	793.4	29.7
168	LL1396	1186.2	995.4	16.1	1324.1	1150.3	13.1
169	LL1397	1372.4	1165.3	15.1	1481.8	1310.3	11.6
170	LL1398	1282.2	969.1	24.4	976.1	684.8	29.8
171	LL1399	1225.9	814.1	33.6	1357.4	1037.4	23.6
172	RVL11-6	685.7	483.6	29.5	729.1	540.2	25.9
173	RKL604-05	511.9	362.7	29.2	555.3	430.7	22.4
174	RKL606-09	889.7	579.9	34.8	1010.6	695.1	31.2
175	SL11-4	763.1	606.3	20.5	840.6	651.7	22.5
176	KLS113	1333.6	1052.1	21.1	1480.9	1252.3	15.4
177	KLB121	1392.1	1025.7	26.3	1335.4	1097.4	17.8
178	RLG147	891.6	663.0	25.6	1020.0	787.7	22.8
179	RLG156	951.2	776.3	18.4	928.4	640.3	31.0
180	RLG157	1059.7	759.3	28.3	984.1	855.7	13.1
Mean		1107.0	789.0	29.0	1102.0	807.0	27.3
Range		511.9 - 1480.9	353.2 - 1214.4	10 - 61.9	486.4 - 1529.2	317.2 - 1310.3	9.2 - 67.2