

Table S1: The list of accessions, their country origin, improvement status, plant height (PH), Days to heading (DH) and disease scores at seedling stage and adult stage (AUDPC)

Entry number	USDA Reference	Taxonomy	Origin	Improvement Status	Plant height PH in cm	Days to Heading DH	Seedling scores	AUDPC	Adult response	Cluster 7A	Cluster 7B
1	PI 352409	Bidi 17 Mohamed	Algeria	Cultivar	150	152	2	571.6049	MR	3	-
2	PI 352443	Ben Bachir	Algeria	Landrace	135	159	2	538.2716	MR	3	-
3	PI 434902	Giza 10	Egypt	Landrace	115	159	2	353.7037	R	4	4
4	PI 434905	Giza 13	Egypt	Landrace	130	152	2	394.4444	R	4	4
5	PI 434907	Giza 15	Egypt	Landrace	120	152	2	432.0988	R	4	4
6	PI 434921	Giza 29	Egypt	Landrace	125	152	2	513.5802	MR	4	-
7	PI 192003	Giza 4	Egypt	Cultivar	150	159	2	394.4444	R	3	2
8	PI 366100	Baladi 116	Egypt	Cultivar	120	159	2	367.284	R	4	4
				Uncertain improvement							
9	PI 366101	Baladi Bahtim	Egypt	status	135	159	3	812.963	S	1	3
10	PI 278261	Greece 14	Greece	Landrace	120	159	2	333.3333	R	4	4
11	PI 469018	MG 27074	Greece	Landrace	110	145	2	538.2716	MR	2	-
12	PI 469088	MG 27976	Greece	Landrace	115	138	2	412.963	R	2	1
13	PI 264933	339	Greece	Landrace	130	138	3	477.7778	R	2	1
14	PI 265019	216	Greece	Landrace	145	152	2	448.1481	R	3	2
15	PI 43251	Lapsista	Greece	Landrace	145	159	1	435.1852	R	3	2
16	PI 338527	Ilektra	Greece	Cultivar	115	145	2	460.4938	R	2	1
17	PI 43245	Mavraani	Greece	Landrace	150	159	1	469.1358	R	3	2
18	PI 264996	579	Greece	Landrace	130	159	2	421.6049	R	3	4
				Breeding							
19	PI 295964	W 8-1992	Israel	material	115	152	2	394.4444	R	4	4
20	PI 52503	Hati	Israel	Landrace	135	145	3	394.4444	R	2	1
21	PI 264951	Timilia Bufala	Italy	Cultivar	130	159	4	872.2222	S	1	3
22	PI 264952	Rossa	Italy	Cultivar	145	152	4	799.3827	S	1	3
23	PI 278347	Biancuccia	Italy	Landrace	135	159	2	355.5556	R	3	2
24	PI 352416	Dauno III	Italy	Cultivar	140	159	5	993.8272	S	1	3
				Breeding							
25	PI 322738	Maliani 7D Aziziah	Italy	material	140	159	2	394.4444	R	3	2
26	PI 352415	17/45	Italy	Cultivar	130	159	3	619.7531	MS	1	-

27	PI 404588	Valselva	Italy	Cultivar	85	152	2	553.0864	MR	4	-
28	PI 278355	Scorsonera	Italy	Landrace	160	152	2	329.6296	R	3	2
29	PI 278357	Urria	Italy	Landrace	145	152	2	333.3333	R	3	2
30	PI 470758	MG 4468	Italy	Landrace	150	159	2	500	MR	3	-
31	PI 223159	Jaljuli 45 Qutma	Jordan	Cultivar	110	159	2	314.8148	R	4	4
32	PI 283153	Horani	Jordan	Landrace Uncertain improvement	110	159	2	487.6543	R	4	4
33	PI 371822	Diera Alla 2 Hourani	Jordan	status	85	159	2	433.3333	R	4	4
34	PI 371830	Nowavi	Jordan	Landrace	100	152	3	533.9506	MR	4	-
35	PI 371833	Safra Maan	Jordan	Landrace	120	152	3	833.3333	S	1	3
36	PI 420940	14	Jordan	Landrace	130	159	3	783.9506	S	1	3
37	PI 487293	SY 272	Jordan	Landrace	165	159	3	551.8519	MR	3	-
38	PI 342645	Haurani 27	Lebanon	Cultivar	120	164	4	836.4198	S	1	3
39	PI 192487	Merzaga	Morocco	Landrace Breeding material	135	159	4	686.4198	MS	1	-
40	PI 278653	738	Morocco	material	130	152	3	335.1852	R	4	4
41	PI 525374	1208	Morocco	Landrace Uncertain improvement	120	152	3	564.8148	MR	4	-
42	PI 525383	1230	Morocco	status	130	159	4	748.1481	S	1	3
43	PI 525393	1263	Morocco	Landrace	150	161	2	555.5556	MR	3	-
44	PI 525394	1264	Morocco	Landrace Uncertain improvement	140	161	4	674.6914	MS	1	-
45	PI 525405	1292	Morocco	status Uncertain improvement	150	159	3	565.4321	MR	3	-
46	PI 192488	Agadir	Morocco	status	130	159	5	672.8395	MS	1	-
47	PI 525392	1262	Morocco	Landrace	150	161	2	585.8025	MR	3	-
48	PI 525397	1273	Morocco	Landrace	150	159	3	711.1111	MS	1	-
49	PI 525398	1274	Morocco	Landrace	150	159	3	435.1852	R	3	2
50	PI 525399	1275	Morocco	Landrace	135	159	4	711.1111	MS	1	-
51	PI 525404	1291	Morocco	Landrace	130	161	5	709.8765	MS	1	-
52	PI 525390	1260	Morocco	Landrace	140	161	3	823.4568	S	1	3
53	PI 525391	1261	Morocco	Landrace	150	161	2	541.9753	MR	3	-

54	PI 525385	1244	Morocco	Landrace	135	159	4	787.037	S	1	3
55	PI 525386	1253	Morocco	Landrace	120	152	3	629.6296	MS	4	-
56	PI 525387	1255	Morocco	Landrace	125	164	4	869.1358	S	1	3
57	PI 525370	1176	Morocco	Landrace	140	145	3	598.7654	MR	2	-
58	PI 525335	1011b	Morocco	Landrace	150	159	4	622.8395	MS	3	-
59	PI 525368	1150	Morocco	Landrace	130	145	3	564.8148	MR	2	-
				Uncertain improvement status							
60	PI 525381	1225	Morocco	status	140	159	3	663.5802	MS	1	-
				Uncertain improvement status							
61	PI 525382	1227	Morocco	status	160	159	2	353.7037	R	3	2
62	PI 525373	1190	Morocco	Landrace	125	154	3	511.1111	MR	4	-
63	PI 517188	GR 296	Morocco	Landrace	85	138	2	394.4444	R	2	1
64	PI 525432	1356	Morocco	Landrace	135	159	5	750.6173	S	1	3
				Uncertain improvement status							
65	PI 191814	H 22 B 13377	Portugal	status	125	156	3	725.9259	S	1	3
66	PI 191836	3220	Portugal	Breeding material	110	159	3	461.7284	R	4	4
				Uncertain improvement status							
67	PI 191839	H 22 B 13376	Portugal	status	135	152	2	353.7037	R	3	2
68	PI 266905	Preto Amarelo	Portugal	Landrace	130	159	2	335.1852	R	3	4
69	PI 269237	I 834	Portugal	Breeding material	135	159	2	629.6296	MS	1	-
70	PI 270134	Lobeiro	Portugal	Landrace	130	164	2	508.0247	MR	3	-
71	PI 270135	Balatuta	Portugal	Landrace	145	164	2	335.1852	R	3	2
				Uncertain improvement status							
72	PI 278399	Ideal Rijo	Portugal	status	140	159	2	541.9753	MR	3	-
				Uncertain improvement status							
73	PI 278401	Yavardo Glauco Lobeiro	Portugal	status	150	152	3	734.5679	S	1	3
74	PI 185186	Ruivo	Portugal	Landrace	120	150	2	308.642	R	4	4

		Mourisco									
75	PI 192439	Ruivo	Portugal	Landrace	120	159	5	725.9259	S	1	3
76	PI 192855	Escuro	Portugal	Landrace	120	159	3	551.8519	MR	4	-
77	PI 192018	Mourisco	Portugal	Landrace	140	159	2	538.2716	MR	3	-
		Raspinegr									
78	PI 192036	o	Portugal	Landrace	130	159	4	734.5679	S	1	3
79	PI 192041	Anafil	Portugal	Landrace	130	159	4	577.7778	MR	1	-
80	PI 221411	Fanfarron	Spain	Landrace	145	159	3	511.1111	MR	3	-
		Carita de									
81	PI 47887	Raton	Spain	Landrace	130	159	1	629.0123	MS	1	-
		Carita de									
82	PI 48208	Raton	Spain	Landrace	130	152	1	663.5802	MS	1	-
		Macolo de									
83	PI 136573	Jerez	Spain	Landrace	140	159	2	438.2716	R	3	2
		Senatore									
84	PI 136576	Capelli	Spain	Landrace	135	159	3	585.8025	MR	1	-
		Blanca de									
85	PI 47885	Nules	Spain	Landrace	120	159	1	329.6296	R	4	4
86	PI 47894	Baza	Spain	Landrace	140	152	1	367.284	R	3	2
		Enano de									
87	PI 48209	Jaen	Spain	Landrace	135	159	1	435.1852	R	3	2
				Uncertain							
				improvement							
88	PI 42569	Cltr 5142	Spain	status	155	159	1	329.6296	R	3	2
				Uncertain							
				improvement							
89	PI 42570	AUS 10115	Spain	status	135	159	1	380.2469	R	3	2
		Cana									
90	PI 47886	Maciza	Spain	Landrace	130	159	2	404.9383	R	3	4
		Rubio									
91	PI 47892	Candeal	Spain	Landrace	150	159	1	648.1481	MS	1	-
92	PI 47893	Semental	Spain	Landrace	140	159	1	268.5185	R	3	2
93	PI 278499	Sevilla 26	Spain	Landrace	160	152	2	354.9383	R	3	2
		12899-2L-		Breeding							
94	PI 519632	1AP-0AP	Syria	material	95	138	2	585.8025	MR	2	-
		A 4590-									
		51P-4P-2P-		Breeding							
95	PI 520398	2P	Syria	material	100	145	2	355.5556	R	2	1

96	PI 211688	173-39	Turkey	Uncertain improvement status	150	159	3	469.1358	R	3	2
97	PI 264966	44203	Turkey	Landrace	150	152	2	354.9383	R	3	2
98	PI 341417	Acme	Turkey	Uncertain improvement status	140	159	3	513.5802	MR	3	-
99	PI 422305	Dicle 74	Turkey	Cultivar	115	159	2	656.7901	MS	1	-
100	PI 341284	Uveyik	Turkey	Landrace	130	152	2	797.5309	S	1	3
101	PI 182402	2532	Turkey	Landrace	120	159	2	294.4444	R	4	4
102	PI 341453	Sari	Turkey	Landrace	130	164	3	507.4074	MR	3	-
103	PI 341487	Karakilcik	Turkey	Landrace	140	159	2	448.7654	R	3	2
104	PI 24605	Cltr 4370	Turkey	Landrace	130	159	2	582.0988	MR	1	-
105	PI 352402	Izmir	Turkey	Uncertain improvement status	120	159	2	513.5802	MR	4	-
106	PI 341446	Sert	Turkey	Landrace	120	159	5	809.8765	S	1	3
107	PI 341374	Kunduru	Turkey	Landrace	120	159	3	764.1975	S	1	3
108	PI 470740	79TK012-058	Turkey	Landrace	140	159	2	486.4198	R	3	2
109	PI 341330	Ali Bayir	Turkey	Landrace	130	152	4	497.5309	MR	4	-
110	PI 341360	Kunduru	Turkey	Landrace	135	159	4	617.9012	MS	1	-
111	PI 341612	Sari Basak	Turkey	Landrace	125	164	3	729.6296	S	1	3
112	PI 341613	Karakilcik	Turkey	Landrace	125	145	2	513.5802	MR	2	-
113	PI 341723	Bugday	Turkey	Landrace	115	152	2	512.3457	MR	4	-

Table S2: The area under disease progress curve (AUDPC) of checks implemented in the experimental design

	AUDPC Rep1	AUDPC Rep2	AUDPC Rep3	AUDPC Rep4	average	Standard deviation
‘Nasr’	701.235	720.988	728.395	735.802	721.605	14.866
‘Salim’	490.123	488.889	523.457	469.136	492.901	22.526