

Additional file 12 Distribution of resistance-associated alleles of significant markers in the diversity panel

Marker names	IACX5824	Kukri_c2289_635	BS00110064_51	RAC875_c4196_1689	Kukri_rep_c103613_253	RAC875_c13920_836	durum_contig14542_85	BS00067975_51	RAC875_c8069_1709	RAC875_c64593_117	durum_contig92921_19	BS00109036_51	Resistance alleles	BLUP_DS	BLUE_IT
genotype	Allele distribution in the diversity panel ^a														
P296	S	S	S	S	R	R	S	S	S	R	R	R	7	8.87	2.38
P265	S	S	S	S	S	S	S	S	S	S	S	R	11	33.56	4.95
P269	S	S	R	S	S	S	S	S	S	S	S	R	10	42.73	5.53
P277	S	S	S	S	R	R	S	S	S	R	R	S	8	33.35	4.96
P268	S	S	R	S	S	S	S	S	S	S	S	R	10	64.35	6.67
P272	S	S	R	S	S	S	S	S	S	S	S	R	10	55.28	6.21
P305	S	S	R	S	S	S	S	S	S	S	S	R	10	52.26	6.21
P274	S	S	S	S	S	S	S	S	S	S	S	R	11	47.72	5.87
P304	S	S	R	S	S	S	S	S	S	S	S	R	10	62.84	6.78
P294	S	S	R	S	S	S	S	S	S	S	S	R	10	50.37	6.10
P293	S	S	S	S	S	S	S	S	S	S	S	S	12	24.46	4.39
P266	S	S	R	S	S	R	S	S	S	S	S	R	9	18.41	3.82
P303	S	S	R	S	S	S	S	S	S	S	S	R	10	56.04	6.33
P297	S	S	R	S	S	S	S	S	S	S	S	R	10	48.47	5.76
P298	S	S	R	S	S	S	S	S	S	S	S	R	10	45.45	5.64
P275	S	S	S	S	S	S	S	S	S	S	S	S	12	36.37	5.30
P295	S	S	R	S	S	S	S	S	S	S	S	S	11	51.50	6.21
P282	S	S	S	S	S	S	S	S	S	S	S	R	11	41.67	5.42
P301	S	S	R	S	S	S	S	S	S	S	S	R	10	71.92	7.01
P278	S	S	R	S	R	R	S	S	S	R	R	R	6	51.50	5.87
P280	S	S	S	S	R	R	S	S	S	R	R	R	7	62.88	6.67
P263	S	S	R	S	S	S	S	S	R	S	S	S	10	10.43	2.56
P261	S	S	S	S	S	S	S	S	S	S	S	R	11	61.33	6.78
P259	S	S	S	S	S	S	S	S	S	S	S	S	12	36.75	5.19
P299	S	S	S	S	S	S	S	S	S	S	S	R	11	52.97	5.87
P257	S	S	R	S	S	S	S	S	S	S	S	R	10	62.09	6.44
P300	S	S	R	S	S	S	S	S	S	S	S	R	10	61.33	6.33
P283	S	S	R	S	S	S	S	S	S	S	S	R	10	43.56	5.64
P292	S	S	S	S	R	R	S	S	S	R	R	S	8	65.11	6.78
P271	R	R	R	S	S	S	S	S	S	S	S	S	9	46.21	5.87
P279	S	S	S	S	R	R	S	S	S	R	R	R	7	37.13	5.30
P289	S	S	R	S	S	S	S	S	S	S	S	S	11	62.84	6.56
P290	S	S	S	R	S	S	S	S	S	R	S	R	9	29.98	4.62
P264	R	R	R	S	S	S	S	S	S	S	S	S	9	53.77	6.10
P260	S	S	R	S	S	S	S	S	S	S	S	R	10	52.63	6.21
P287	S	S	R	S	R	S	S	S	S	S	S	R	9	56.79	6.33
P262	S	S	S	S	S	S	S	S	S	S	S	R	11	54.52	6.10
P285	S	S	S	S	S	S	S	S	S	S	S	S	12	48.85	5.99
P284	S	S	S	S	S	S	S	S	S	S	S	R	11	44.69	5.53
P288	S	S	R	S	S	S	S	S	S	S	S	S	11	73.39	7.13
P267	S	S	R	S	S	S	S	S	S	S	S	R	10	43.94	5.64
P273	S	S	S	S	S	S	S	S	S	S	S	R	11	71.12	6.90
P302	S	S	R	S	R	R	S	S	S	R	R	R	6	44.32	5.87
P258	S	S	R	S	R	R	S	S	S	R	R	R	6	67.38	6.78
P281	S	S	S	S	R	R	S	S	S	R	R	S	8	42.80	5.64
P286	R	R	R	S	S	S	S	S	S	S	S	R	8	47.72	5.76
P104	R	R	R	R	S	S	S	S	S	S	S	S	8	15.43	3.82
P008	S	S	R	S	S	S	S	S	S	S	S	R	10	57.17	6.21

P052	S	S	S	S	S	S	S	S	S	S	S	R	11	28.40	4.50
P058	S	S	R	S	S	S	S	S	S	S	S	S	11	39.40	5.30
P118	S	S	R	S	S	S	S	S	S	S	S	S	11	59.06	6.33
P158	S	S	S	S	S	S	S	S	S	S	S	R	11	60.95	6.67
P114	R	R	R	S	S	S	S	S	S	S	S	S	9	55.28	6.33
P003	S	S	R	S	S	S	S	S	S	S	S	S	11	62.43	6.44
P022	S	S	R	R	S	S	S	S	S	S	S	S	10	42.05	5.53
P092	S	S	S	S	S	S	S	S	S	S	S	S	12	58.30	6.21
P159	S	S	R	S	S	S	S	S	S	S	S	S	11	68.93	7.01
P006	S	S	R	S	S	S	S	S	S	S	S	R	10	67.38	7.01
P033	S	S	R	S	S	S	S	S	S	R	S	S	10	32.97	5.07
P152	S	S	R	S	S	S	S	S	S	S	S	S	11	74.94	7.35
P081	S	S	R	R	R	S	S	S	S	S	S	S	9	65.87	6.67
P019	S	S	R	S	S	S	S	S	S	S	S	S	11	48.47	5.87
P088	S	S	R	S	S	S	S	S	S	S	S	R	10	55.28	6.33
P166	S	S	R	S	S	S	S	S	S	S	S	S	11	58.31	6.33
P099	S	S	R	S	S	S	S	S	S	S	S	S	11	62.09	6.56
P138	S	S	R	S	S	S	S	S	S	S	S	S	11	53.01	6.21
P123	S	S	R	S	S	S	S	S	S	S	S	R	10	57.55	6.44
P023	S	S	S	S	S	R	S	S	S	S	S	S	11	53.77	6.10
P028	S	S	R	S	S	S	S	S	S	S	S	S	11	81.75	7.81
P087	S	S	R	S	S	S	S	S	S	S	S	R	10	81.79	7.58
P029	S	S	R	S	S	S	S	S	S	S	S	S	11	59.82	6.44
P013	S	S	R	S	S	S	S	S	S	R	S	R	9	68.89	6.78
P048	S	S	R	S	S	S	S	S	S	S	S	R	10	18.53	3.93
P126	S	S	S	S	S	S	S	S	S	S	S	R	11	57.55	6.33
P153	S	S	R	S	S	S	S	S	S	S	S	R	10	52.26	5.99
P117	S	S	R	S	S	S	S	S	S	S	S	R	10	74.90	7.24
P150	S	S	R	R	S	S	S	S	S	S	S	S	10	51.50	5.99
P071	S	S	R	S	R	S	S	S	S	S	S	R	9	52.26	6.21
P063	S	S	R	S	R	S	S	S	S	S	S	S	10	25.11	4.62
P105	S	S	S	S	S	S	S	S	S	S	S	R	11	40.16	5.42
P085	S	S	S	S	S	S	S	S	S	S	S	S	12	31.27	4.73
P055	S	S	R	S	S	S	S	S	S	S	S	S	11	59.06	6.56
P102	S	S	R	S	S	S	S	S	S	S	S	S	11	63.60	6.78
P121	S	S	R	S	S	S	S	S	S	S	R	S	10	57.55	6.33
P120	S	S	R	S	S	S	S	S	S	S	S	R	10	65.91	6.90
P076	S	S	S	S	S	S	S	S	S	S	S	S	12	54.52	6.10
P097	S	S	S	S	S	S	S	S	S	S	S	S	12	49.99	5.87
P142	S	S	S	S	S	S	S	S	S	S	S	R	11	45.07	5.87
P119	S	S	R	S	S	S	S	S	S	S	S	R	10	37.13	5.42
P034	S	S	S	S	S	S	R	R	S	S	S	R	9	37.32	5.42
P007	S	S	S	S	S	S	S	S	S	S	S	S	12	84.06	7.93
P035	R	R	R	S	S	S	S	S	S	S	S	S	9	56.04	6.21
P100	S	S	S	S	S	S	S	S	S	S	S	R	11	47.72	5.76
P056	S	S	S	R	S	S	S	S	S	S	S	S	11	60.95	6.56
P079	S	S	S	S	S	S	S	S	S	S	S	R	11	17.47	3.93
P109	S	S	S	S	S	S	S	S	S	S	S	R	11	56.04	6.33
P012	S	S	S	R	S	S	S	S	S	S	S	S	11	17.09	3.93
P075	R	R	R	S	S	S	S	S	S	S	S	S	9	23.90	4.62
P002	S	S	R	S	S	S	S	S	S	S	S	S	11	55.28	6.10
P036	S	S	R	S	R	R	S	S	S	S	S	R	8	54.52	6.10
P107	S	S	R	S	S	S	S	S	S	S	S	R	10	74.94	7.13
P040	S	S	S	S	S	S	S	S	S	S	S	R	11	42.42	5.53
P050	S	S	R	S	S	S	S	S	S	S	S	S	11	71.92	7.13
P139	S	S	R	S	S	S	S	S	S	S	S	R	10	62.09	6.78
P054	S	S	R	S	S	S	S	S	S	S	S	S	11	56.04	6.33
P024	S	S	R	S	S	S	S	S	S	S	S	R	10	43.94	5.64
P161	S	S	R	R	S	S	S	S	S	S	S	S	10	66.62	6.78
P060	S	S	S	S	S	S	S	S	S	S	S	S	12	64.36	7.01

P098	S	S	S	S	S	S	S	S	S	S	S	R	11	32.48	4.85
P046	S	S	S	S	S	S	S	S	S	S	S	S	12	62.84	6.67
P078	S	S	R	S	R	R	S	S	S	S	R	R	7	45.45	5.87
P149	S	S	R	S	S	S	S	S	S	S	S	S	11	8.58	2.45
P039	S	S	S	S	S	S	S	S	S	S	S	R	11	47.30	5.64
P162	S	S	S	S	S	S	S	S	S	S	S	R	11	51.88	6.10
P141	S	S	S	S	S	S	S	S	S	S	S	R	11	62.09	6.67
P090	R	R	S	S	S	S	S	S	S	S	S	R	9	35.54	4.73
P032	S	S	S	S	S	S	S	S	S	S	S	S	12	60.12	6.44
P068	S	S	R	S	S	S	S	S	S	S	S	S	11	61.44	6.44
P044	R	R	R	S	R	R	S	S	S	S	S	R	5	40.91	5.42
P064	S	S	R	S	S	S	S	S	S	S	S	R	10	70.41	6.78
P108	S	S	R	S	S	S	S	S	S	S	S	S	11	61.33	6.67
P145	S	S	R	S	S	S	S	S	S	S	S	S	11	66.62	6.90
P020	S	S	R	S	S	S	S	S	S	S	S	R	10	51.50	5.87
P154	S	S	R	R	R	S	S	S	S	S	S	S	9	55.28	6.21
P151	S	S	R	S	S	S	S	S	S	S	S	R	10	61.33	6.56
P084	S	S	R	S	S	S	S	S	S	S	S	S	11	63.60	6.67
P146	S	S	R	S	S	S	S	S	S	S	S	S	11	57.55	6.33
P133	S	S	R	S	S	S	S	S	S	S	S	S	11	60.57	6.44
P077	S	S	S	S	S	S	S	S	S	S	S	S	12	24.09	4.50
P136	R	R	R	S	R	R	S	S	S	S	R	R	5	68.89	7.13
P106	S	S	R	S	S	S	S	S	S	S	S	S	11	45.45	5.87
P042	S	S	R	S	R	S	S	S	S	S	S	R	9	72.67	7.13
P125	S	S	R	S	S	S	S	S	S	S	S	R	10	53.39	5.99
P059	S	S	S	S	S	S	S	S	S	S	S	R	11	59.82	6.44
P021	S	S	S	S	S	S	S	S	S	S	S	R	11	43.18	5.64
P164	S	S	S	S	S	S	S	S	S	S	S	R	11	38.83	5.30
P069	S	S	R	S	S	S	S	S	S	S	S	S	11	50.40	5.64
P094	S	S	R	S	S	S	S	S	S	S	S	S	11	65.49	6.67
P016	S	S	R	S	S	S	S	S	S	S	S	S	11	59.82	6.44
P137	S	S	R	S	S	S	S	S	S	S	S	S	11	43.94	5.64
P053	S	S	R	S	S	S	S	S	S	S	S	R	10	50.36	6.10
P061	R	R	R	R	R	R	S	S	R	R	R	S	3	17.17	3.82
P130	S	S	S	S	S	S	S	S	S	S	S	R	11	64.39	6.67
P009	R	R	R	S	S	S	S	S	S	S	S	S	9	49.23	5.76
P038	S	S	R	S	S	S	S	S	S	S	S	S	11	71.92	7.13
P051	S	S	R	R	S	S	S	S	S	S	S	R	9	20.68	4.27
P070	S	S	R	S	S	S	S	S	S	S	S	S	11	13.80	3.36
P163	S	S	S	S	S	S	S	S	S	S	S	R	11	56.04	6.33
P115	S	S	R	S	S	S	S	S	S	S	S	R	10	60.20	6.21
P122	S	S	S	S	S	S	S	S	S	S	S	S	12	43.94	5.53
P026	S	S	R	S	S	S	S	S	S	S	S	R	10	56.79	6.33
P110	S	S	R	R	S	S	S	S	S	S	S	S	10	50.74	6.10
P147	R	R	R	R	S	S	S	S	S	S	S	R	7	33.35	5.07
P025	S	S	R	S	S	S	S	S	S	S	S	R	10	68.14	6.78
P030	S	S	R	R	S	S	S	S	S	S	S	R	9	57.55	6.21
P031	S	S	R	S	S	S	S	S	S	S	S	S	11	54.53	6.10
P096	S	S	R	S	S	S	S	S	S	S	S	R	10	29.57	4.85
P160	R	R	S	S	S	S	S	S	S	S	S	S	10	40.91	5.53
P005	S	S	S	S	S	S	S	S	S	S	S	R	11	60.57	6.33
P017	S	S	R	S	S	S	S	S	S	S	S	S	11	64.36	6.78
P113	S	S	R	S	S	S	S	S	S	S	S	S	11	74.94	7.13
P011	R	R	S	R	S	S	S	S	S	S	S	R	8	32.22	4.96
P065	S	S	R	S	S	S	S	S	S	S	S	R	10	41.67	5.53
P165	S	S	S	S	S	S	S	S	S	S	S	S	12	62.09	6.44
P083	S	S	R	S	S	S	S	S	S	S	S	R	10	59.06	6.56
P144	S	S	R	S	S	S	S	S	S	S	S	S	11	42.24	5.42
P143	S	S	S	S	S	S	S	S	S	S	S	R	11	38.64	5.30
P089	S	S	S	S	S	S	S	S	S	S	S	R	11	60.57	6.44

P043	S	S	R	S	S	S	S	S	S	S	S	S	11	64.36	6.67
P074	S	S	R	S	S	S	S	S	S	S	S	R	10	56.04	6.21
P135	S	S	R	S	S	S	S	S	S	S	S	S	11	75.77	7.35
P049	S	S	R	S	S	S	S	S	S	S	S	S	11	43.18	5.42
P004	S	S	R	S	S	S	S	S	S	S	S	S	11	51.12	5.99
P156	S	S	R	S	S	S	S	S	S	S	S	S	11	72.67	7.24
P067	S	S	S	S	S	S	S	S	S	S	S	R	11	59.06	6.33
P155	R	R	R	S	R	R	R	R	S	R	R	S	3	11.04	3.02
P127	S	S	R	S	S	S	S	S	S	S	S	S	11	65.11	6.67
P086	R	R	R	S	S	S	S	S	S	S	S	R	8	27.68	4.73
P082	S	S	S	S	S	S	S	S	S	S	S	R	11	38.64	5.42
P073	S	S	R	S	S	S	S	S	S	S	S	S	11	48.47	5.87
P093	S	S	R	S	S	S	S	S	S	S	S	R	10	48.47	5.87
P057	S	S	S	S	S	S	S	S	S	S	S	R	11	52.26	5.99
P072	R	R	R	S	R	R	S	S	S	R	R	S	5	68.89	6.90
P103	S	S	R	S	S	S	S	S	S	S	S	S	11	63.60	6.78
P080	S	S	R	S	S	S	S	S	S	S	S	R	10	65.49	6.56
P148	R	R	R	R	S	S	S	S	S	R	S	S	7	34.94	4.96
P140	S	S	R	S	S	S	S	S	S	S	S	S	11	59.06	6.44
P041	S	S	R	S	S	S	S	S	S	S	S	S	11	29.87	4.50
P018	S	S	R	S	S	S	S	S	S	S	S	S	11	73.43	7.13
P112	S	S	R	S	S	S	S	S	S	S	S	S	11	32.97	4.39
P132	S	S	R	S	S	S	S	S	S	S	S	S	11	65.87	6.90
P116	S	S	R	S	S	S	S	S	S	S	S	R	10	66.62	6.90
P047	S	S	R	S	S	S	S	S	S	S	S	S	11	59.82	6.44
P045	S	S	R	S	S	S	S	S	S	S	S	R	10	62.09	6.56
P027	S	S	R	S	S	S	S	S	S	S	S	S	11	56.79	6.33
P220	S	S	R	S	S	S	S	S	S	S	S	S	11	54.90	6.10
P180	S	S	R	S	S	S	S	S	S	S	S	R	10	77.21	7.35
P219	R	R	R	R	R	R	S	S	S	R	R	S	4	21.36	4.27
P226	R	R	R	R	S	S	S	S	S	S	S	S	8	54.52	6.10
P241	R	R	R	R	R	S	R	R	S	S	S	R	4	41.29	5.53
P170	S	S	R	S	S	S	S	S	S	S	R	S	10	49.23	5.76
P206	R	R	R	S	R	R	R	R	R	R	R	R	1	15.99	2.79
P182	S	S	R	S	S	S	S	S	S	S	S	R	10	9.72	2.45
P179	S	S	R	R	R	R	S	S	S	R	R	S	6	14.94	3.70
P238	S	S	S	S	S	S	S	S	S	S	S	S	12	11.34	3.02
P203	S	S	R	S	S	S	S	S	S	S	S	R	10	60.57	6.44
P252	R	R	S	R	R	R	S	S	S	R	R	R	4	8.24	2.45
P177	S	S	R	S	S	R	S	S	S	S	S	S	10	73.43	7.24
P205	S	R	R	S	S	S	R	R	S	S	S	S	8	45.45	5.76
P172	S	S	S	S	S	S	S	S	S	S	S	S	12	58.30	6.21
P186	S	S	R	S	S	S	S	S	S	S	S	S	11	65.49	6.44
P188	R	R	R	S	S	S	S	S	S	S	S	S	9	37.13	5.19
P227	S	S	S	S	S	S	S	S	S	S	R	S	11	39.02	5.53
P195	R	R	R	R	R	R	S	S	S	R	R	S	4	22.61	3.59
P251	R	R	R	S	S	S	S	S	S	S	R	S	8	32.22	5.07
P211	R	R	S	S	S	S	R	R	R	S	S	S	7	7.11	1.99
P216	S	S	R	S	S	S	S	S	R	S	R	S	9	54.52	5.42
P230	S	S	S	S	S	S	S	S	S	S	S	R	11	35.81	4.96
P201	R	R	R	S	R	S	S	S	S	S	S	S	8	59.06	6.56
P253	R	R	R	R	R	R	S	S	S	R	R	S	4	12.52	3.13
P232	R	R	R	S	S	S	S	S	S	S	S	S	9	64.36	6.78
P254	S	S	R	S	S	S	S	S	S	S	S	S	11	68.89	7.01
P213	S	S	R	S	S	S	R	R	R	S	S	S	8	62.09	6.67
P207	R	R	S	S	R	R	R	R	S	R	R	S	4	13.23	2.45
P256	S	S	S	S	S	S	R	R	S	S	S	R	9	15.77	3.70
P194	R	R	S	R	S	S	S	S	S	S	R	S	8	35.24	5.07
P223	R	R	R	S	S	S	S	S	S	S	S	S	9	30.32	4.85
P191	S	S	R	R	S	S	R	R	S	S	S	S	8	28.43	4.85

P212	S	S	R	S	S	S	S	S	S	S	S	S	11	63.60	6.56
P245	R	R	R	R	S	S	S	S	S	S	S	S	8	21.44	4.05
P222	S	S	R	S	S	S	S	S	S	S	S	S	11	68.10	6.90
P202	S	S	S	S	S	S	S	S	S	S	S	S	12	38.64	5.64
P235	R	R	R	R	S	S	S	S	S	S	S	S	8	49.23	5.99
P237	S	S	R	S	R	R	S	S	S	S	R	R	6	74.94	7.01
P193	R	R	S	S	R	S	R	R	R	S	S	S	6	20.46	3.93
P210	S	S	R	S	S	S	S	S	S	S	S	S	11	77.21	7.47
P184	S	S	R	S	S	S	S	S	S	S	S	S	11	80.24	7.47
P244	R	R	R	S	S	S	S	S	S	S	S	S	9	28.25	4.73
P242	S	S	R	S	S	S	S	S	S	S	S	S	11	53.73	6.10
P176	S	S	R	S	S	S	S	S	R	S	S	S	10	66.62	6.78
P255	R	R	R	R	S	S	S	S	S	S	S	S	8	57.55	6.33
P197	R	R	S	S	R	S	R	R	R	S	S	S	6	16.37	3.93
P192	R	R	R	S	S	S	S	S	S	S	S	S	9	29.57	4.85
P231	R	R	R	S	R	R	R	R	R	R	R	R	2	21.63	4.16
P221	R	R	R	R	S	S	S	S	S	S	S	S	8	56.79	6.21
P183	S	S	R	S	S	S	S	S	S	S	S	R	10	68.14	6.78
P249	S	S	S	S	S	S	S	S	S	S	R	S	11	56.41	6.21
P196	S	S	R	S	S	S	S	S	S	S	S	S	11	38.64	5.53
P189	S	S	S	S	R	R	S	S	S	S	R	R	7	35.24	5.30
P234	S	S	S	S	S	S	S	S	S	S	S	S	12	54.15	5.99
P246	S	S	R	S	S	S	S	S	S	S	S	S	11	68.89	6.90
P168	R	R	R	S	S	S	S	S	S	S	R	S	8	48.85	5.87
P208	R	R	R	S	S	S	S	S	S	S	S	S	9	44.69	5.53
P198	R	R	S	S	R	R	R	R	S	R	R	S	4	15.96	3.93
P209	S	S	S	S	S	S	S	S	S	S	S	S	12	64.36	6.78
P190	S	S	R	S	S	S	S	S	S	S	S	R	10	32.40	4.96
P215	R	R	R	R	S	S	S	S	S	S	S	S	8	35.05	4.96
P185	R	R	S	S	S	S	S	S	S	S	S	R	9	15.01	3.70
P243	R	R	S	S	R	R	R	R	R	R	R	S	3	5.78	1.54
P171	S	S	R	S	S	S	S	S	S	S	S	S	11	46.96	5.76
P225	S	S	R	S	S	S	S	S	S	S	S	S	11	67.76	7.01
P228	R	R	R	R	S	S	S	S	S	S	S	S	8	54.52	6.33
P124	S	S	R	S	S	S	S	S	S	S	S	S	11	66.63	6.90
P250	S	S	R	S	R	R	S	S	S	R	R	R	6	18.41	3.82
P200	R	R	S	S	S	S	R	R	R	S	S	R	6	8.51	2.34
P247	S	S	R	S	S	S	S	S	S	S	S	R	10	63.60	6.67
P091	S	S	R	S	S	S	S	S	S	S	S	S	11	60.57	6.56
P291	S	S	R	S	S	S	S	S	S	S	S	R	10	35.20	4.96
P129	S	S	S	S	S	S	S	S	S	S	S	S	12	60.57	6.33
P214	S	S	S	S	S	S	S	S	S	S	S	S	12	81.75	7.70
P236	S	S	S	S	S	S	S	S	S	S	S	R	11	75.70	7.47
P157	R	R	R	S	S	S	S	S	S	S	S	S	9	35.69	4.96
P270	S	S	S	S	S	S	S	S	S	S	S	R	11	27.49	4.62
P173	S	S	S	R	S	R	S	S	S	S	S	S	10	50.74	6.10
P131	S	S	S	S	S	S	S	S	S	S	S	S	12	59.86	6.56
P128	S	S	R	S	S	S	S	S	S	S	S	R	10	72.67	7.47
P181	S	S	S	S	S	S	S	S	S	S	S	R	11	69.65	7.01
P240	S	S	S	S	S	S	S	S	S	S	S	S	12	55.28	6.33
P229	S	S	S	S	S	S	S	S	S	S	S	S	12	70.44	7.13
P248	S	S	R	S	S	S	S	S	S	S	S	S	11	60.57	6.67
P218	S	S	R	S	S	S	S	S	S	S	S	S	11	80.24	7.81
P204	R	R	R	S	S	S	S	S	R	S	S	S	8	65.11	6.78
P178	S	S	S	S	R	R	S	S	R	R	R	S	7	32.59	4.85
P187	S	S	S	S	R	R	S	S	R	R	R	S	7	60.57	6.44
P233	S	S	R	S	S	S	S	S	S	S	S	S	11	65.87	6.90
P217	S	S	R	S	S	S	S	S	S	S	S	S	11	51.50	5.99
P224	S	S	R	S	S	S	S	S	S	S	S	S	11	70.37	7.01
P062	R	R	R	S	S	S	S	S	S	S	S	R	8	56.04	6.10

P066	S	S	R	S	S	S	S	S	S	S	S	S	11	54.71	6.33
P167	S	S	R	S	S	S	S	S	S	S	S	S	11	39.36	5.19
P037	S	S	R	S	S	S	S	S	S	S	S	R	10	54.52	6.21
P101	S	S	R	S	S	S	S	S	S	S	S	R	10	29.57	4.85
P014	S	S	R	S	S	S	S	S	S	S	S	R	10	32.59	5.07
P111	S	S	R	S	S	S	S	S	S	S	S	R	10	56.04	6.10
P010	R	R	R	S	S	S	S	S	S	S	S	S	9	50.74	5.87
P095	R	R	R	S	S	S	S	S	S	S	S	R	8	61.33	6.56
P015	S	S	S	S	S	S	S	S	S	S	S	S	12	35.43	4.96
P001	S	S	S	S	S	S	S	S	S	S	S	S	12	55.28	6.21
P134	S	S	S	S	S	S	S	S	S	S	S	R	11	62.81	6.67
P276	S	S	S	S	S	S	S	S	S	S	S	R	11	69.65	6.90

^aR=Allele associated with resistance, S=Allele associated with susceptibility