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Supplementary Material

Screening quinoa (*Chenopodium quinoa*) germplasm for resistance to downy mildew (*Peronospora variabilis*) in Turkey

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Table S1. Origin, plant height, AUDPC, disease score and reaction types of accessions screened in 2018

Quinoa accessions were obtained from North Central Regional Plant Introduction Station of Iowa State University. DAS, days after sowing; AUDPC, area under disease progress curve; HR, highly resistant; MR, moderately resistant; MS, moderately susceptible; HS, highly susceptible. Means with the same letter are not significantly different ($P<0.01$) according to Tukey's multiple range test. Owing to excessive data in the table, lettering of the data was firstly performed with lower-case letters and then second one was done with upper case letters, which was maintained till end of the data. Data including three replicates (one replicate for each block and in total three replicates in three blocks) of each different time points (67, 98 and 135 DAS) were separately analyzed. The last timepoint (135 DAS) was used for classification of reaction types.

No	Accessions	Origin	Plant height (cm)	AUDPC	Disease score	Reaction type
1	AMES 13738	U.S.A.	88.33 o-s	858	2	MR
2	PI 634923	U.S.A.	88.00 o-t	805	2	MR
3	PI 614937	U.S.A.	87.33 o-t	2798	4	HS
4	PI 614934	Peru	76.66 u-A	1526	3	MS
5	PI 614908	U.S.A.	68.33 AB	2925	4	HS
6	PI 614930	Bolivia	74.00 v-A	1533	3	MS
7	PI 614884	U.S.A.	76.00 u-A	1518	3	MS
8	PI 587173	India	96.00 j-o	858	2	MR
9	PI 510547	Peru	69.00 z-B	2561	4	HS
10	PI 478411	Bolivia	101.33 f-m	737	2	MR
11	PI 478418	Bolivia	113.66 b-e	231	1	HR
12	PI 510550	Mexico	96.66 h-m	858	2	MR
13	PI 510543	Mexico	99.00 h-m	805	2	MR
14	PI 478410	U.S.A.	99.00 h-m	842	2	MR
15	AMES 13755	U.S.A.	70.33 y-B	2699	4	HS
16	PI 470932	Bolivia	93.33 l-q	805	2	MR
17	AMES 13737	U.S.A.	83.00 r-v	2573	4	HS
18	AMES 13753	U.S.A.	99.00 h-m	790	2	MR
19	AMES 13723	U.S.A.	76.66 u-A	2647	4	HS
20	PI 614907	U.S.A.	126.00 a	295	1	HR
21	PI 614906	U.S.A.	93.33 l-q	753	2	MR
22	PI 665273	U.S.A.	72.33 w-A	2835	4	HS
23	AMES 13724	U.S.A.	89.00 n-s	910	2	MR
24	PI 614885	U.S.A.	103.00 f-l	790	2	MR
25	AMES 13739	U.S.A.	113.33 b-e	284	1	HR
26	PI 614002	U.S.A.	110.00 c-f	235	1	HR
27	PI 596498	U.S.A.	118.33 a-d	321	1	HR
28	PI 476820	U.S.A.	98.33 ı-n	858	2	MR
29	AMES 13727	U.S.A.	100.00 g-m	895	2	MR
30	PI 510545	Peru	68.33 AB	2851	4	HS
31	AMES 13762	U.S.A.	105.33 e-j	827	2	MR
32	AMES 13736	India	79.33 s-y	2604	4	HS
33	PI 478415	Peru	111.00 b-f	410	1	HR

34	AMES 13760	Peru	81.66 s-w	2612	4	HS
35	AMES 13758	Peru	84.66 p-u	737	2	MR
36	AMES 13756	Peru	84.00 q-u	799	2	MR
37	AMES 13728	U.S.A.	81.66 s-w	2872	4	HS
38	PI 665277	U.S.A.	94.33 k-p	805	2	MR
39	PI 478414	Bolivia	97.00 j-o	753	2	MR
40	PI 665276	U.S.A.	109.66 c-g	685	2	MR
41	PI 665274	India	62.33 B	2798	4	HS
42	PI 634921	India	91.66 m-r	737	2	MR
43	PI 614935	U.S.A.	118.66 abc	373	1	HR
44	PI 614932	Bolivia	108.66 d-h	842	2	MR
45	PI 614917	Bolivia	87.33 o-t	768	2	MR
46	PI 614915	Peru	114.33 b-e	305	1	HR
47	PI 614881	U.S.A.	91.66 m-r	700	2	MR
48	AMES 13730	U.S.A.	93.33 l-q	700	2	MR
49	PI 510542	India	71.33 x-B	2761	4	HS
50	AMES 13725	U.S.A.	71.00 y-B	2693	4	HS
51	PI 510538	U.S.A.	81.00 s-x	2850	4	HS
52	PI 510536	India	93.66 k-q	648	2	MR
53	AMES 13735	U.S.A.	110.33 c-f	315	1	HR
54	AMES 13759	U.S.A.	110.33 c-f	737	2	MR
55	AMES 13744	U.S.A.	107.66 e-ı	737	2	MR
56	AMES 13740	Peru	104.66 e-j	895	2	MR
57	PI 674266	U.S.A.	113.33 b-e	268	1	HR
58	PI 674265	U.S.A.	76.66 u-A	2761	4	HS
59	PI 614903	U.S.A.	78.33 t-z	2709	4	HS
60	PI 614901	Bolivia	84.00 q-u	2619	4	HS
61	PI 614923	India	80.00 s-y	2625	4	HS
62	PI 643079	India	101.33 f-m	858	2	MR
63	PI 614928	Bolivia	103.33 f-k	685	2	MR
64	PI 614924	Bolivia	120.66 ab	253	1	HR
65	PI 510551	Bolivia	113.33 b-e	244	1	HR
66	PI 433232	Bolivia	101.66 f-l	895	2	MR
67	PI 634919	Bolivia	85.33 p-u	2746	4	HS
68	PI 634917	Bolivia	127.00 a	268	1	HR
69	PI 510541	U.S.A.	83.33 r-v	1428	3	MS
70	PI 614918	U.S.A.	93.33 l-q	821	2	MR
Mean			93.69	1293.42		

Table S2. Origin, plant height, AUDPC, disease score and reaction type of accessions screened in 2019

Quinoa accessions were obtained from North Central Regional Plant Introduction Station of Iowa State University. DAS, days after sowing; AUDPC, area under disease progress curve; HR, highly resistant; MR, moderately resistant; MS, moderately susceptible; HS, highly susceptible. Means with the same letter are not significantly different ($P<0.01$) according to Tukey's multiple range test. Owing to excessive data in the table, lettering of the data was firstly performed with lower-case letters and then second one was done with upper case letters, which was maintained till end of the data. Data including three replicates (one replicate for each block and in total three replicates in three blocks) of each different time points (58, 85 and 110 DAS) were separately analyzed. The last timepoint (110 DAS) was used for classification of reaction types.

No	Accessions	Origin	Plant height (cm)	AUDPC	Disease score	Reaction type
1	PI 614910	Bolivia	151.66 f	285	1	HR
2	PI 614902	Bolivia	126.00 mn	706	2	MR
3	PI 510539	Bolivia	79.66 RS	746	2	MR
4	PI 665272	Bolivia	125.00 no	314	1	HR
5	PI 614911	U.S.A.	83.66 OP	350	1	HR
6	PI 510537	U.S.A.	109.33 z	903	2	MR
7	PI 634918	U.S.A.	78.33 RST	1482	3	MS
8	AMES 13721	U.S.A.	113.00 vw	915	2	MR
9	PI 510549	U.S.A.	114.00 v	787	2	MR
10	PI 614889	U.S.A.	110.00 yz	864	2	MR
11	PI 614888	U.S.A.	109.66 yz	825	2	MR
12	PI 614886	U.S.A.	80.00 R	759	2	MR
13	PI 510534	U.S.A.	110.33yz	707	2	MR
14	AMES 13754	U.S.A.	131.33 j	336	1	HR
15	AMES 13752	U.S.A.	116.66 tu	838	2	MR
16	AMES 13751	U.S.A.	90.00 KL	1664	3	MS
17	AMES 13750	U.S.A.	175.00 b	337	1	HR
18	AMES 13729	U.S.A.	190.66 a	292	1	HR
19	AMES 13749	U.S.A.	122.00 pq	733	2	MR
20	AMES 13748	U.S.A.	90.00 KL	1351	3	MS
21	AMES 13747	U.S.A.	91.00 JK	959	2	MR
22	AMES 13733	U.S.A.	117.00 tu	312	1	HR
23	AMES 13746	U.S.A.	118.33 st	981	2	MR
24	AMES 13745	U.S.A.	82.00 P	1315	3	MS
25	AMES 13734	U.S.A.	70.00 V	733	2	MR
26	PI 665283	U.S.A.	65.33 X	1379	3	MS
27	AMES 13726	U.S.A.	93.00 I	939	2	MR
28	PI 665275	U.S.A.	122.33 pq	272	1	HR
29	PI 510533	U.S.A.	105.00 CD	748	2	MR
30	PI 510532	U.S.A.	118.00 t	1597	3	MS
31	AMES 13722	U.S.A.	125.33 mn	1417	3	MS
32	PI 614926	U.S.A.	79.00 RS	708	2	MR
33	PI 614920	U.S.A.	127.00 lm	887	2	MR

34	PI 510546	U.S.A.	118.00 t	733	2	MR
35	PI 614880	U.S.A.	141.66 h	707	2	MR
36	PI 634925	U.S.A.	85.00 NO	1276	3	MS
37	PI 634922	U.S.A.	93.33 HI	877	2	MR
38	PI 614923	U.S.A.	111.33 wy	836	2	MR
39	PI 614938	U.S.A.	85.00 NO	1533	3	MS
40	AMES 13741	U.S.A.	110.00 yz	747	2	MR
41	PI 614916	U.S.A.	90.00 KL	1544	3	MS
42	AMES 13742	U.S.A.	113.00 vw	954	2	MR
43	AMES 13736	U.S.A.	91.00 JK	1506	3	MS
44	AMES 13761	U.S.A.	70.00 V	822	2	MR
45	AMES 13757	U.S.A.	88.33 LM	735	2	MR
46	AMES 13752	U.S.A.	100.00 F	323	1	HR
47	PI 584524	U.S.A.	130.00 jk	773	2	MR
48	PI 614886	U.S.A.	161.33 c	821	2	MR
49	PI 665278	U.S.A.	86.66 MN	1723	4	HS
50	PI 614922	U.S.A.	120.00 rs	747	2	MR
51	PI 614887	U.S.A.	161.33 c	284	1	HR
52	PI 614883	U.S.A.	105.33 BCD	1249	3	MS
53	PI 510540	Bolivia	121.33 qr	707	2	MR
54	PI 677097	Bolivia	161.33 c	323	1	HR
55	AMES 13743	U.S.A.	159.66 cd	286	1	HR
56	PI 614933	U.S.A.	128.66 kl	760	2	MR
57	PI 634920	U.S.A.	92.00 IJ	1544	3	MS
58	PI 614936	U.S.A.	155.33 e	296	1	HR
59	PI 614931	U.S.A.	150.33 f	322	1	HR
60	PI 614929	U.S.A.	112.00 w	785	2	MR
61	PI 614914	U.S.A.	146.33 g	851	2	MR
62	PI 614913	U.S.A.	100.00 F	1275	3	MS
63	PI 614909	U.S.A.	95.00 H	1223	3	MS
64	PI 614882	U.S.A.	84.00 O	2195	4	HS
65	PI 510548	U.S.A.	82.00 P	2553	4	HS
66	PI 478408	India	100.33 F	759	2	MR
67	AMES 13720	India	77.00 TU	2291	4	HS
68	AMES 13719	India	128.00 l	310	1	HR
69	PI 596293	India	91.00 JK	2480	4	HS
70	PI 510544	India	104.00 DE	889	2	MR
71	PI 510534	India	106.00 BC	325	1	HR
72	PI 478410	India	107.00 AB	337	1	HR
73	PI 614880	India	108.66 zA	786	2	MR
74	PI 614002	India	102.33 E	323	1	HR
75	PI 634921	India	116.00 u	706	2	MR
76	PI 510538	India	105.33 BCD	350	1	HR
77	PI 510536	India	131.00 j	303	1	HR
78	PI 510535	India	135.66 ı	375	1	HR
79	PI 478414	India	159.33 d	369	1	HR
80	PI 677100	India	106.33 BC	786	2	MR
81	PI 677096	Bolivia	109.00 z	362	1	HR
82	PI 677099	Bolivia	99.66 FG	314	1	HR

83	PI 614912	Bolivia	75.33 U	1468	3	MS
84	AMES 13751	Bolivia	150.00 f	345	1	HR
85	PI 614919	Bolivia	123.33 op	876	2	MR
86	AMES 13750	Bolivia	98.00 G	825	2	MR
87	PI 614921	Bolivia	75.33 U	1467	3	MS
88	AMES 13749	Bolivia	118.33 st	773	2	MR
89	AMES 13748	Bolivia	127.00 lm	851	2	MR
90	PI 614925	Bolivia	91.66 IJK	1941	4	HS
91	PI 614927	Bolivia	90.00 KL	1494	3	MS
92	AMES 13746	Bolivia	91.66 IJK	1210	3	MS
93	PI 665283	Bolivia	78.33 RST	2471	4	HS
94	PI 510533	Bolivia	78.00 ST	2459	4	HS
95	PI 510532	Bolivia	99.66 FG	1515	3	MS
Mean			110.02	931.68		