Table S4 Loci associated with significant differences in *Pst* resistance in at least three environments (one at *P*<0.01) in a collection of 875 spring wheat accessions.

Chr.	Pos.[a]	QTL-representative SNP			Associated SNP[e]	PSTv races IT (-log *P*)[g]				*Pst* response (-log *P*)[g]	
	(cM)	Index[b]	Alleles[c]	Freq.[d]	Index IWA	4	14	37	40	IT-ALL[f]	SEV-ALL[f]
1A	39.0	IWA6441	T/C	0.56	-	-	-	-	-	1.5	**2.1**
1A	58.0	IWA5194	A/G	0.32	-	-	-	-	-	1.4	1.3
1A	59.6	IWA4061	A/G	0.63	4646, 4071	-	-	-	1.4	1.6	1.4
1A	84.2	IWA3475	T/C	0.58	5277, 7018, 7898	-	-	-	-	1.6	1.6
1A	88.1	IWA5174	A/C	0.39	6707, 6708	-	-	-	-	1.5	1.5
1A	120.3	IWA1225	T/G	0.69	3145	-	1.3	-	-	**2.0**	**2.8**
1A	148.1	IWA672	A/G	0.36	-	-	-	-	-	**2.0**	1.6
1A	158.6	IWA7893	T/C	0.83	1368	-	-	-	**2.0**	1.7	**3.2**
1A	173.7	IWA2035	A/G	0.63	1560, 693	-	-	-	-	1.6	**2.2**
1B	35.5	IWA962	A/G	0.14	4389	-	-	-	-	1.6	1.9
1B	51.9	IWA6758	A/G	0.31	189, 890, 6073	1.4	-	-	-	1.9	**2.0**
1B	57.6	IWA3307	T/C	0.49	-	-	-	-	-	1.8	1.6
1B	94.7	IWA3017	A/G	0.11	-	-	-	**4.0**	-	1.3	1.9
1B	109.3	IWA1825	T/C	0.35	5847, 1069, 3043	-	-	-	-	**2.0**	**2.4**
1B	123.4	IWA3892	A/G	0.70	846	-	-	-	1.3	**3.2**	**3.5**
1B	141.2	IWA2077	A/G	0.18	6647	1.9	-	-	-	**2.1**	**2.0**
1D	21.4	IWA2547	T/C	0.11	-	**3.0**	-	-	-	1.8	**2.2**
2A	9.9	**IWA422**	T/C	0.31	423, 3468, 3469	-	1.6	-	-	**3.9**	**3.2**
2A	62.2	IWA3520	A/C	0.52	-	-	-	-	-	1.4	1.8
2A	78.3	**IWA424**	T/C	0.70	-	-	1.9	-	**2.0**	1.5	**2.7**
2A	96.2	IWA5272	A/G	0.52	5273	-	-	-	-	**2.1**	**2.1**
2A	110.6	IWA7947	A/C	0.71	-	-	-	-	1.4	**2.2**	**2.2**
2A	160.2	IWA200	A/G	0.84	-	-	-	-	-	**2.1**	**2.0**
2B	112.3	IWA905	A/G	0.82	-	-	-	-	-	1.5	1.4
2B	147.3	IWA586	T/C	0.62	587, 4464	-	-	-	-	1.5	1.3
2B	163.4	IWA226	T/C	0.54	2294	1.4	1.9	-	**2.1**	1.7	**2.3**
2B	266.4	IWA3206	T/C	0.12	1668, 3206, 4619	**2.7**	-	-	**2.0**	1.9	1.6
3A	13.2	IWA5969	T/C	0.14	-	-	-	1.4	-	1.9	1.9
3A	27.5	IWA2049	T/C	0.14	2048, 7085, 2047, 7086	-	-	-	-	1.7	**2.1**
3A	35.0	IWA1996	A/G	0.87	885	1.3	1.5	-	-	1.9	1.6
3A	59.4	IWA5039	T/C	0.64	6877, 1308	-	-	-	**2.7**	1.9	1.8
3A	70.4	IWA8215	T/G	0.27	-	1.3	-	-	-	1.8	-
3A	75.2	IWA7011	A/G	0.24	-	-	1.5	-	-	1.8	1.3
3A	102.9	IWA2332	A/G	0.35	7440	-	-	-	-	1.8	**2.2**
3B	3.9	**IWA5202**	A/G	0.37	4796	-	-	-	-	**3.4**	1.3
3B	57.4	IWA6632	A/C	0.75	-	-	-	-	-	1.9	1.3
3B	73.8	IWA377	T/C	0.76	2622	-	-	-	-	1.4	-
3B	77.5	IWA8480	A/G	0.14	-	-	-	-	-	1.4	1.8
3B	84.5	IWA5890	T/C	0.53	-	-	-	-	-	1.7	**2.1**
3B	95.5	IWA6221	T/C	0.75	-	-	-	-	-	**2.4**	1.8
3B	101.4	IWA321	T/C	0.11	-	-	-	-	-	**2.0**	-
4A	35.2	IWA6100	A/G	0.33	4251	-	-	-	-	**2.4**	1.9

Table S4 Continuation

4A	44.0	IWA1992	A/G	0.58	-	-	-	1.4	-	1.3	**2.2**
4A	54.9	IWA7216	T/C	0.53	-	-	-	-	-	1.6	**2.0**
4A	68.1	IWA1570	T/G	0.17	5687, 3489, 3490, 5036,8, 7203	**2.4**	-	-	-	**3.2**	**3.0**
4A	167.3	IWA2170	A/G	0.37	7765, 1066, 6690	-	-	-	-	**2.4**	**2.3**
4A	181.7	IWA1034	T/C	0.17	-	-	-	-	-	**3.4**	**2.6**
4B	85.2	IWA6461	T/C	0.54	-	-	-	-	-	1.7	1.6
4D	26.9	**IWA5375**	T/G	0.10	5766	1.8	-	-	-	**3.0**	**3.9**
5A	4.9	IWA2144	T/C	0.19	2143, 2146	-	-	-	-	**2.2**	1.6
5A	119.3	IWA1486	T/C	0.24	4648	-	-	**2.0**	-	1.7	-
5A	189.2	**IWA6988**	T/C	0.16	-	-	1.7	-	-	**3.0**	**2.2**
5A	194.9	IWA2646	A/G	0.35	-	1.4	-	1.3	-	**2.6**	**2.3**
5B	0.0	IWA868	T/C	0.19	757	-	-	-	-	1.9	1.6
5B	68.3	IWA7227	T/C	0.31	-	-	**3.0**	1.5	-	**2.1**	1.7
5B	85.9	IWA3633	T/C	0.54	-	-	-	-	-	**2.8**	**2.8**
5B	119.9	IWA4280	A/G	0.10	8069, 7815	-	**24.0**	**8.0**	-	1.7	1.6
5B	205.8	IWA22	A/G	0.26	-	-	-	-	-	-	1.6
6A	75.5	IWA4824	A/G	0.44	-	1.4	-	**3.1**	1.4	1.8	1.8
6A	114.5	IWA6596	T/C	0.51	1671, 5074, 6508	-	-	-	-	1.5	**2.0**
6A	217.7	IWA3066	A/G	0.72	3203, 3204	1.4	-	-	-	**2.4**	**2.4**
6B	37.9	IWA8134	T/C	0.10	-	-	-	**2.3**	-	1.7	**2.5**
6B	38.5	IWA2888	T/C	0.65	1905, 1657	-	1.6	-	-	1.6	**2.4**
6B	50.8	IWA7625	A/G	0.44	2419, 1655, 2417, 2420, 4823, 4825, 4827	1.9	-	**3.1**	1.6	**2.3**	**2.3**
6B	84.5	IWA6770	A/G	0.52	3289, 6660	-	-	-	1.4	**2.5**	**2.6**
6B	112.3	**IWA7257**	T/G	0.23	-	-	-	-	-	**5.0**	**3.2**
6D	68.6	IWA7816	A/G	0.63	-	**2.3**	-	-	-	**2.2**	**2.1**
6D	73.2	**IWA167**	A/C	0.10	-	-	-	-	-	**5.5**	**4.5**
7A	6.2	IWA7306	A/G	0.53	-	1.4	-	-	-	1.7	**2.2**
7A	49.9	IWA7121	T/G	0.70	-	-	-	-	-	1.6	1.6
7A	105.5	IWA7549	A/C	0.83	-	-	-	-	-	**2.0**	**2.0**
7B	40.6	IWA1108	T/C	0.27	6143, 8233	-	-	-	-	1.9	1.7
7B	107.4	IWA615	T/C	0.18	-	-	1.8	-	1.3	**2.0**	1.7

[a] Scaled position from hexaploid wheat consensus map (Cavanagh et al. 2013).

[b] SNP indexes from Illumina iSelect 9K wheat assay (Cavanagh et al. 2013). **Bold**: QTL with experiment –wise Bonferroni *P*< 0.1

[c] SNP variant associated to the resistant response is underlined.

[d] Frequency of the favorable SNP variant.

[e] SNP loci in LD with the representative SNP and significantly associated to the *Pst* response (IWA).

[f] IT= infection type , SEV= disease severity. IT-ALL and SEV-ALL, best linear unbiased estimates (BLUEs) over all environments.

[g] Significances are reported as -log (*P* value): '-' = not-significant, 1.3 = *P*=0.05, values > 2 are in **bold**, and value ≥ 4 (experiment-wise significant at α = 0.10) are in **bold underlined**.