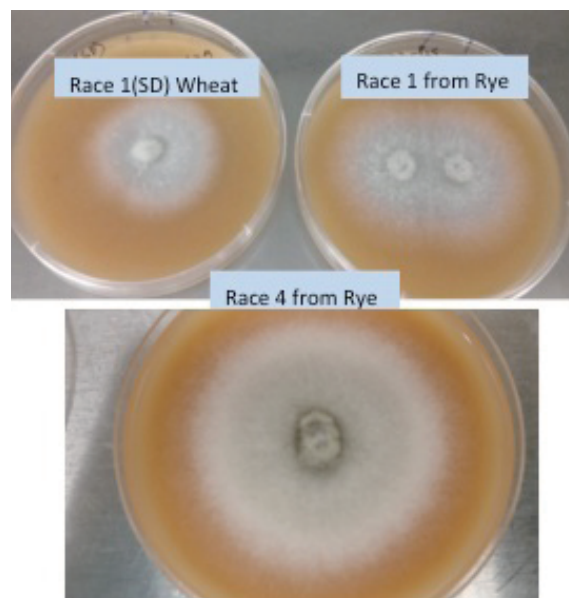




Supplementary Fig. 1. Origin of 211 rye genotypes evaluated in this study.



Supplementary Fig. 2. Mycelial growth of *P. tritici-repentis* isolates recovered from wheat and rye.

Supplementary Table 1. Global collection of 211 rye (*Secale cereale* subsp. *Cereale*) tested against tan spot (*Pyrenophora tritici-repentis* race 1) (n=211), race 5 (171)

S/N.	Country	Accession No	Race 5		Race 1	
			Lesion Type	Reaction	Lesion Type	Reaction
1	Afghanistan	PI 223896	1	R	2	MR
2	Afghanistan	PI 275356	3	MS	2	MR
3	Afghanistan	PI 366503	4	S	2	MR
4	Afghanistan	PI 253957	3	MS	1	R
5	Algeria	PI 280842	2	MR	1	R
6	Argentina	PI 240676	1	R	1	R
7	Argentina	PI 534987	1	R	1	R
8	Argentina	PI 534988	1	R	4	S
9	Argentina	PI 543398	5	S	1	R
10	Argentina	PI 534951	-	-	2	MR
11	Argentina	PI 534988	-	-	4	S
12	Argentina	PI 535015	-	-	2	MR
13	Australia	Clse 79	2	MR	1	R
14	Australia	PI 345739	2	MR	1	R
15	Australia	PI 345740	2	MR	2	MR
16	Australia	PI 346416	2	MR	1	R
17	Austria	PI 254810	4	S	1	R
18	Austria	PI 534960	4	S	4	MS
19	Austria	PI 535007	1	R	4	S
20	Austria	PI535004	-	-	2	MR
21	Belarus	PI 372116	3	MS	1	R
22	Belarus	PI 372119	4	S	1	R
23	Belgium	PI 534970	3	MS	3	MS
24	Bosnia	PI 349919	3	MS	1	R
25	Bosnia	PI 349923	2	MR	1	R
26	Brazil	PI 239580	3	MS	1	R
27	Brazil	PI 241578	3	MS	1	R
28	Brazil	PI 314964	3	MS	1	R
29	Brazil	PI 542470	1	R	2	MR
30	Bulgaria	PI 294794	1	R	2	MR
31	Bulgaria	PI 294795	4	S	2	MR
32	Canada	PI 445984	3	MS	1	R
33	Canada	PI 445998	3	MS	2	MR
34	Canada	PI 496254	3	MS	1	R
35	Canada	PI 590948	3	MS	2	MR
36	Canada	PI 445999	-	-	1	R

37	Canada	PI 534946	-	-	3.5	MS
38	Canada	PI 534952	-	-	3	MS
39	Canada	PI 534968	-	-	3.5	MS
40	Canada	PI 535008	-	-	4	S
41	Canada	PI 496256	-	-	4	S
42	Chile	PI 436165	3	MS	1	R
43	Chile	PI 436171	4	S	3.5	MS
44	Chile	PI 436185	-	-	2	MR
45	Chile	PI 436192	-	-	4	S
46	China	PI 447337	3	MS	1	R
47	China	PI 452132	2	MR	3.5	MS
48	China	PI 452133	4	S	4	S
49	Czech Republic	PI 534956	2	MR	1	R
50	Estonia	PI 265471	1	R	1	R
51	Estonia	PI 372114	5	S	2	MR
52	Estonia	PI 446514	4	S	4	S
53	Finland	PI 265473	1	R	1	R
54	Finland	PI 290440	4	S	3	MS
55	France	PI 235536	3	MS	3	MS
56	France	PI 315957	3	MS	3.5	MS
57	France	PI 535144	1	R	1	R
58	France	PI 446136	-	-	1	R
59	Germany	PI 290435	3	MS	1	MS
60	Germany	PI 330424	4	S	2	MR
61	Germany	PI 534963	-	-	3	MS
62	Germany	PI 534969	-	-	2	MR
63	Germany	PI 534933	-	-	1	R
64	Greece	PI 249936	3	MS	1	R
65	Greece	PI 446151	2	MR	2	MR
66	Hungary	PI 272333	1	R	2.5	MR
67	Hungary	PI 290436	3	MS	2	MR
68	Hungary	PI 534989	-	-	3.5	MS
69	Hungary	PI 534928	-	-		MR
70	India	PI 430004	1	R	2	MR
71	Iran	PI 227870	1	R	2	MR
72	Iran	PI 243741	1	R	1	R
73	Iran	PI 250744	4	S	1	R
74	Iran	PI 250746	1	R	1	R
75	Iran	PI 289814	2	MR	2	MR
76	Iran	PI 429377	-	-	1	R
77	Iran	PI 429373	-	-	3	MS

78	Iran	PI 401399	1	R	1	R
79	Iraq	PI 243956	1	R	1	R
80	Ireland	Clse 106	1	R	1	R
81	Israel	PI 201991	1	R	2	MR
82	Israel	PI 445977	1	R	2	MR
83	Israel	PI 445980	1	R	2	MR
84	Italy	Clse 105	1	R	1	R
85	Italy	PI 534929	2	MR	1	R
86	Japan	Clse 107	1	R	1	R
87	Japan	Clse 108	1	R	2	MR
88	Japan	Clse 109	3	MS	1	R
89	Japan	PI 446020	3	MS	2	MR
90	Kazakhstan	PI 234655	1	R	1	R
91	Kazakhstan	PI 234656	1	R	1	R
92	Kenya	PI 535006	2	MR	1	R
93	Latvia	PI 267098	1	R	1	R
94	Latvia	PI 446181	1	R	1	R
95	Lithuania	PI 404227	2	MR	2	MR
96	Lithuania	PI 446123	5	S	3	MS
97	Lithuania	PI 446140	-	-	2	MR
98	Macedonia	PI 344991	4	S	2	MR
99	Macedonia	PI 344998	1	R	2	MR
100	Macedonia	PI 378233	1	R	2	MR
101	Macedonia	PI 378239	1	R	2	MR
102	Macedonia	PI 390369	4	S	1	R
103	Macedonia	PI 420560	-	-	2	MR
104	Mexico	PI 446058	1	R	2	S
105	Mexico	PI 542467	1	R	2	MR
106	Montenegro	PI 344980	3	MS	3.5	MS
107	Montenegro	PI 349912	2	MR	1	R
108	Morocco	PI 525203	2	MR	2	MR
109	Morocco	PI 525205	4	S	4	S
110	Morocco	PI 525207	-	-	2	MR
111	Netherlands	PI 290425	1	R	4	S
112	Netherlands	PI 315962	2	MR	1	R
113	Netherlands	PI 330445	2	MR	3.5	MS
114	Netherlands	PI 446208	-	-	2	MR
115	Pakistan	PI 218110	1	R	1	R
116	Pakistan	PI 219740	1	R	2	MR
117	Pakistan	PI 219741	1	R	1	R
118	Pakistan	PI 289827	3	MS	1	R

119	Pakistan	PI 410534	1	R	1	R
120	Pakistan	PI 561809	1	R	1	R
121	Pakistan	PI 578092	3	MS	2	MR
122	Pakistan	PI 513214	-	-	3	MS
123	Pakistan	PI 219741	-	-	2	MR
124	Poland	PI 323449	2	MR	1	MS
125	Poland	PI 323454	2	MR	2	MR
126	Poland	PI 338383	1	R	2	MR
127	Poland	PI 446177	2	MR	2	MR
128	Poland	PI 535192	3	MS	1	R
129	Poland	PI 534950	-	-	3.5	MS
130	Poland	PI 446368	-	-	3.5	MS
131	Portugal	PI 446195	3	MS	2	MR
132	Portugal	PI 535083	1	R	1	R
133	Portugal	PI 535094	4	S	3	MS
134	Portugal	PI 535095	-	-	3	MS
135	Portugal	PI 534927	-	-	1	R
136	Romania	PI 306487	1	R	1	R
137	Romania	PI 306495	3	MS	1	R
138	Romania	PI 446245	3	MS	3	MS
139	Romania	PI 534943	3	MS	2	MR
140	Romania	PI 535163	2	MR	2	MR
141	Romania	PI 446244	-	-	3.5	MS
142	Russia	PI 280838	1	R	2	MR
143	Russia	PI 283971	1	R	2	MR
144	Russia	PI 445986	-	-	3	MS
145	Russia	PI 445987	-	-	2	MR
146	Russia	PI 446127	-	-	2	MR
147	Serbia	PI 345000	2	MR	1	R
148	Serbia	PI 378230	2	MR	1	R
149	Serbia	PI 378231	3	MS	1	R
150	Slovakia	PI 290423	3	MS	2	MR
151	South Africa	PI 330407	4	S	3.7	MS
152	South Africa	PI 330413	2	MR	1	R
153	South Africa	PI 330431	2	MR	1	R
154	South Korea	Clse 110	3	MS	1	R
155	Spain	PI 256026	4	S	1	R
156	Spain	PI 323365	2	MR	2	MR
157	Spain	PI 323383	1	R	1	R
158	Sweden	Clse 1	2	MR	2	MR
159	Sweden	Clse 20	4	S	1	R

160	Sweden	PI 330439	3	MS	2	MR
161	Sweden	PI 368157	4	S	3.75	MS
162	Sweden	PI 561674	3	MS	2	MR
163	Switzerland	PI 263561	1	R	2	MR
164	Tajikistan	PI 639328	1	R	2	MR
165	Tajikistan	PI 639336	1	R	1	R
166	Turkey	PI 266975	1	R	1	R
167	Turkey	PI 357067	2	MR	1	R
168	Turkey	PI 357091	1	R	1	R
169	Turkey	PI 543408	2	MR	1	R
170	Turkey	PI 543593	4	S	1	R
171	Turkey	PI 543664	2	MR	1	R
172	Turkey	PI 560572	1	R	1	R
173	Turkey	PI 568106	1	R	1	R
174	Turkey	PI 470297	-	-	3	MS
175	Ukraine	PI 290439	5	S	2	MR
176	Ukraine	PI 372115	3	MS	2	MR
177	Ukraine	PI 534948	2	MR	1	R
178	UK	PI 330526	1	R	1	R
179	UK	PI 345531	2	MR	2	MR
180	UK	PI 414080	1	R	1	R
181	USA	Clse 28	1	R	1	R
182	USA	Clse 38	2	MR	1	R
183	USA	Clse 84	1	R	1	R
184	USA	PI 323377	2	MR	2	MR
185	USA	PI 464583	2	MR	4	S
186	USA	PI 491395	3	MS	1	R
187	USA	PI 522185	1	R	3.5	MS
188	USA	PI 534954	3	MS	1	R
189	USA	PI 534961	2	MR	4	S
190	USA	PI 534962	2	MR	2	MR
191	USA	PI 535154	2	MR	2	MR
192	USA	PI 535159	1	R	1	R
193	USA	PI 535199	2	MR	1	R
194	USA	PI 542469	2	MR	1	R
195	USA	PI 543729	2	MR	2	MR
196	USA	PI 552973	2	MR	2	MR
197	USA	PI 559980	4	S	1	R
198	USA	PI 559981	3	MS	1	R
199	USA	PI 628642	2	MR	1	R
200	USA	Clse 174	4	S	2	MR

201	USA	Clse 176	3	MS	1	R
202	USA	Clse 521	3	MS	2	MR
203	USA	PI 619184	1	R	2	MR
204	USA	PI 422425	-	-	1	R
205	USA	PI 445977	-	-	1	R
206	USA	PI 446001	-	-	1	R
207	USA	PI 534936	-	-	1	R
208	USA	PI 534939	-	-	1	R
209	USA	PI 534954	-	-	1	R
210	USA	PI 446266	-	-	3	MS
211	Uruguay	PI 535174	2	MR	1	R

S = susceptible; MS = moderately susceptible. Plants were rated on lesion type 1-5 scale where 1-2 are moderately resistant to resistant and 3-5 are moderately susceptible to susceptible (Lamari and Bernier (1989); “-” = genotype not tested for race 5 due to limited seed.

Supplementary Table 2. Race characterization of *P. tritici-repentis* isolates collected from rye during 2013-14 in South Dakota

Isolates	Race	<i>Ptr ToxA</i>	<i>Ptr ToxB</i>	*<i>MT</i>
13-3-P1.1	Race 4	-	-	+
13-3-P1.2	Race1	+	-	+
13-3-P1.3	Race1	+	-	+
13-3-P1.4	Race1	+	-	+
13-3-P2.1	Race1	+	-	+
13-3-P2.2	Race1	+	-	+
13-3-P2.3	Race1	+	-	+
13-3-P2.4	Race1	+	-	+
13-3-P2.5	Race1	+	-	+
13-3-P3.1	Race1	+	-	+
13-3-P3.2	Race1	+	-	+
13-3-P3.3	Race1	+	-	+
13-3-P4.1	Race1	+	-	+
13-3-P4.2	Race1	+	-	+
13-3-P4.3	Race1	+	-	+
13-3-P4.4	Race1	+	-	+
13-3-P5.1	Race1	+	-	+
13-3-P5.2	Race1	+	-	+
13-3-P5.3	Race1	+	-	+
13-3-P5.4	Race1	+	-	+
14-40-P1.1	Race1	-	-	+
14-40-P2	Race1	-	-	+
14-40-P3	Race1	-	-	+
14-40-P4	Race 4	-	-	+
14-40-P5	Race 4	-	-	+
14-40-P6	Race 4	-	-	+
14-40-P7	Race 4	-	-	+
14-41-P1	Race 4	-	-	+
14-41-P2	Race 4	-	-	+
14-41-P3	Race 4	-	-	+
14-41-P4	Race 4	-	-	+
14-41-P5	Race 4	-	-	+
14-41-P6	Race 4	-	-	+
14-41-P7	Race 4	-	-	+
14-41-P8	Race 4	-	-	+
14-41-P9	Race 4	-	-	+
14-41-P10	Race 4	-	-	+
14-41-P10.1	Race 4	-	-	+

14-41-P14.1	Race 4	-	-	+
14-41-P15.1	Race 4	-	-	+
14- 41-P11	Race 4	-	-	+
14- 41-P11.1	Race 4	-	-	+
14- 41-P12	Race 4	-	-	+
14- 41-P12.1	Race 4	-	-	+
14- 41-P13	Race 4	-	-	+
14- 41-P13.7	Race 4	-	-	+
14-41-P14	Race 4	-	-	+
14-41-P15	Race 4	-	-	+
14 -41-P16	Race 4	-	-	+
15 -41-P16.1	Race 4	-	-	+
14- 41-P17	Race 4	-	-	+
14- 41-P18	Race 4	-	-	+
14- 41-P19	Race 4	-	-	+
14- 41-P20	Race 4	-	-	+
14- 41-P21	Race 4	-	-	+
14- 41-P22	Race 4	-	-	+
14- 41-P23	Race 4	-	-	+
14- 41-P24	Race 4	-	-	+
14- 41-P25	Race 4	-	-	+
14- 41-P26	Race 4	-	-	+
14- 41-P27	Race 4	-	-	+
14 42-P1	Race 4	-	-	+
14 42-P1.3	Race 4	-	-	+
14 42-P2	Race 4	-	-	+
14 42-P3	Race 4	-	-	+
14 42-P4	Race 4	-	-	+
14 42-P4.1	Race 1	+	-	+
14 42-P5	Race 4	-	-	+
14 42-P6	Race 4	-	-	+
14 42-P7	Race 4	-	-	+
14 42-P8	Race 4	-	-	+
14 42-P9	Race 4	-	-	+
14 42-P10	Race 4	-	-	+
14- 42-P11	Race 4	-	-	+
14 42-P12	Race 4	-	-	+
14 42-P13	Race 4	-	-	+
14 42-P14	Race 4	-	-	+
14 42-P15	Race 4	-	-	+
14 42-P16	Race 4	-	-	+

14-42-P17	Race 4	-	-	+
14-42-P18	Race 4	-	-	+
14-42-P19	Race 4	-	-	+
14-42-P20	Race 4	-	-	+
14-42-P21	Race 4	-	-	+
14-42-P22	Race 4	-	-	+
14-42-P23	Race 4	-	-	+
14-42-P24	Race 4	-	-	+
14-42-P25	Race 4	-	-	+
14-42-P26	Race 4	-	-	+
14-42-P27	Race 4	-	-	+
14-42-P28	Race 4	-	-	+
14-42-P29	Race 4	-	-	+
14-42-P30	Race 4	-	-	+
14-42-P31	Race 4	-	-	+
14-42-P32	Race 4	-	-	+
14-42-P33	Race 4	-	-	+
14-51-P1	Race 4	-	-	+
14-51-P2	Race 4	-	-	+
14-51-P3	Race 4	-	-	+
14-51-P4	Race 4	-	-	+
14-51-P6	Race 4	-	-	+
14-51-P7	Race 4	-	-	+
14-51-P9	Race 4	-	-	+

* Mating type genes specific to *P. tritici-repentis*; + = Ptr ToxA gene present; - = Ptr ToxB gene absent