

Table 3. GRRC race analyses of *P. striiformis* in 2016 shown by number of isolates and frequency per race and country in Africa/Asia and Europe, respectively. Significant races in new areas 2015-2016 are highlighted and confirmed by SSR genotyping. Virulence phenotype indicates virulence matching *Yr* resistance genes, which are considered ineffective for yellow rust control. Testing of additional 2016 isolates is ongoing. Genotyping results of additional, non-recovered and recovered but non-race typed isolates are shown in Table 4. Graphic presentation of results and comparisons to previous years are accessible at www.wheatrust.org.

| Crop season (Year) | Geographic group | Country | Common name | Pathotype code short | Number of isolates | % of isolates | | |
|---------------------|------------------|---|---|---|---|---------------|-----------|--------------|
| 2016 | Africa, C&W Asia | Afghanistan | "AF2012" | -2,-,(4)-,6,7,8,-,-,17,-,-,27,32,-,AvS,- | 4 | 9,3 | | |
| | | | Other | 1,2,-,-,6,7,8,9,-,-,17,-,-,27,-,-,AvS,- | 3 | 7,0 | | |
| | | | PstS6 | 1,2,-,-,6,7,9,-,-,17,-,-,27,-,-,AvS,- | 1 | 2,3 | | |
| | | Azerbaijan | PstS2 | -2,-,-,6,7,8,9,-,-,25,-,-,AvS,- | 2 | 4,7 | | |
| | | | PstS2,v27 | -2,-,-,6,7,8,9,-,-,25,27,-,-,AvS,- | 2 | 4,7 | | |
| | | | Warrior | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 2 | 4,7 | | |
| | | Ethiopia | "AF2012" | -2,-,(4)-,6,7,8,-,-,17,-,-,27,32,-,AvS,- | 7 | 16,3 | | |
| | | Morocco | Pst(new) | -2,3,-,-,6,7,8,9,-,-,17,-,25,-,32,Sp,AvS,- | 6 | 14,0 | | |
| | | Tanzania | Other | -2,-,-,6,7,-,9,-,-,25,27,-,-,AvS,- | 3 | 7,0 | | |
| | | Uzbekistan | Other | -2,-,4,-,6,7,8,-,-,25,27,-,-,AvS,- | 1 | 2,3 | | |
| | | | PstS5,v17,v27 | 1,2,3,4,-,6,-,9,-,-,17,-,25,27,32,-,AvS,Amb | 9 | 20,9 | | |
| | | | | PStS5,v27 | 1,2,3,4,-,6,-,9,-,-,25,27,32,-,AvS,Amb | 1 | 2,3 | |
| | | | | "AF2012" | -2,-,(4)-,6,7,8,-,-,17,-,-,27,32,-,AvS,- | 2 | 4,7 | |
| | | Africa, Asia Total | | | | | 43 | 100,0 |
| | | Europe | Croatia | Warrior(-) | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,- | 1 | 0,9 | |
| | Denmark | | | Kranich | 1,2,3,-,-,6,7,8,9,-,-,17,-,25,-,32,-,AvS,Amb | 2 | 1,7 | |
| | | | | Triticale2015 | -2,-,-,6,7,8,9,-,-,-,-,-,Avs,- | 17 | 14,7 | |
| | | | | Triticale2016 | -,-,-,-,6,-,8,-,-,-,-,-,-,-,-,-,- | 1 | 0,9 | |
| | | | | Warrior | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 2 | 1,7 | |
| | | | | Warrior(-) | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,- | 41 | 35,3 | |
| | | | | Warrior(-),Amb | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 1 | 0,9 | |
| | | | | Pst(new) | -2,3,-,-,6,7,8,9,-,-,17,-,25,-,32,Sp,AvS,- | 2 | 1,7 | |
| | | | Finland | Warrior(-) | 1,2,3,-,-,6,7,8,9,-,-,17,-,25,-,32,Sp,AvS,- | 1 | 0,9 | |
| | Hungary | | Triticale2006 | -,(2)-,-,6,7,8,-,10,-,-,24,-,-,-,-,- | 1 | 0,9 | | |
| | | | Warrior | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 1 | 0,9 | | |
| | | | | Warrior(-) | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,- | 1 | 0,9 | |
| | Italy | | Triticale2015 | -2,-,-,6,7,8,9,-,-,-,-,-,Avs,- | 1 | 0,9 | | |
| | | | Warrior(-) | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,- | 2 | 1,7 | | |
| | | | | PstS(new) | -2,3,-,-,6,7,8,9,-,-,17,-,25,-,32,Sp,AvS,- | 2 | 1,7 | |
| | Latvia | | Warrior(-) | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,- | 1 | 0,9 | | |
| | Lithuania | | Warrior | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 1 | 0,9 | | |
| | Norway | | Kranich | 1,2,3,-,-,6,7,8,9,-,-,17,-,25,-,32,-,AvS,Amb | 1 | 0,9 | | |
| | | | Triticale2015 | -2,-,-,6,7,8,9,-,-,-,-,-,Avs,- | 1 | 0,9 | | |
| | | | Warrior(-) | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,- | 10 | 8,6 | | |
| | | | Warrior(-), Amb | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 1 | 0,9 | | |
| Spain | Warrior(-) | | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,- | 5 | 4,3 | | | |
| Sweden | Hereford | | -2,3,-,-,6,7,8,-,-,17,-,25,-,32,-,AvS,- | 1 | 0,9 | | | |
| | Kranich | | 1,2,3,-,-,6,7,8,9,-,-,17,-,25,-,32,-,AvS,Amb | 3 | 2,6 | | | |
| | | | Triticale2015 | -2,-,-,6,7,8,9,-,-,-,-,-,Avs,- | 3 | 2,6 | | |
| | | | Tulsa | -,-,3,4,-,6,-,-,-,-,-,25,-,32,-,AvS,- | 2 | 1,7 | | |
| | | | Warrior | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 1 | 0,9 | | |
| | | Warrior(-), Amb | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 1 | 0,9 | | | |
| UK | Warrior(-) | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,- | 1 | 0,9 | | | | |
| Ukraine | PstS2,v27 | -2,-,-,6,7,8,9,-,-,-,-,-,25,27,-,-,AvS,- | 1 | 0,9 | | | | |
| | Triticale2006 | -2,-,-,6,7,8,-,10,-,-,24,-,-,-,-,- | 5 | 4,3 | | | | |
| | | Triticale2015 | -2,-,-,6,7,8,9,-,-,-,-,-,Avs,- | 1 | 0,9 | | | |
| | | Warrior | 1,2,3,4,-,6,7,-,9,-,-,17,-,25,-,32,Sp,AvS,Amb | 1 | 0,9 | | | |
| Europe Total | | | | | 116 | 100,0 | | |
| Grand total | | | | | 159 | | | |