

Summary of Stripe Rust Races in 2008

- A total of 331 stripe rust samples were obtained from 18 states, of which 297 wheat stripe rust and 34 barley stripe rust (from 3 states) were successfully identified to races.
- A total of 33 *Puccinia striiformis* f. sp. *tritici* (PST, wheat stripe rust) and 11 *P. striiformis* f. sp. *hordei* (PSH, barley stripe rust) races were identified.
- The most predominant PST races were PST-114 (18.0%), PST-100 (14.3%), and PST-116 (6.7%), PST-101 (6.7%), and PST-98 (6.0%), and the most widely distributed race was PST-100 (in 14 of the 18 states). The most predominant PSH races were PSH-33 (45.5%) and PSH-46 (18.2%), and the former was also the most widely distributed race (all 3 states; CA, OR, and WA) while the latter was only detected in California. The predominant races of PST have wide ranges of virulences while the predominant races of PSH have narrow ranges of virulences.
- One new PST race, PST-138, was identified and it has similar virulence factors as PST-127 (the most virulent race) except for not virulent on differential 'Produra'. One new PSH race, PSH-82 with virulences only on differentials 'Topper' and 'I 5', was identified from an isolate collected from goatgrass from Pullman, WA.
- The *Yr5* isogenic line is the only one of the 20 differential without corresponding virulent races. Although the *Yr15* isogenic has not been used as a differential, we tested it with the new races and none of them were virulent. Similar to *Yr5*, it also was resistant in nurseries planted in various locations. Therefore, both *Yr5* and *Yr15* are still effective against all races identified so far in the US.
- Cultivars with high-temperature, adult-plant (HTAP) resistance were still resistant in various locations, demonstrating that this type of resistance is non-race specific and durable. It should be used over race-specific all-stage (or seedling) resistance in breeding programs or used in combination with genes, such as *Yr5* and *Yr15*, conferring effective all-stage resistance.