

Improving wheat stripe rust resistance in Central Asia and the Caucasus (abstract)

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Wheat is the most important cereal in Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) and the Caucasus (Armenia, Azerbaijan and Georgia). Stripe rust, caused by *Puccinia striiformis* f. sp. *tritici* is considered the most important disease of wheat in Central Asia and the Caucasus (CAC). Although stripe rust has been present in the region for long time, it has become a serious constraint to wheat production in the past 10 years. This is reflected by the occurrence of four epidemics of stripe rust in the CAC region since 1999, the most recent in 2009. Several wheat varieties occupying substantial areas are either susceptible to stripe rust or possess a low level of resistance. Information on the stripe rust pathogen in terms of prevalent races and epidemiology is not readily available. Furthermore, there is an insufficient understanding of effective stripe rust resistance genes in the region, and little is known about the resistance genes present in the commercial varieties and advanced breeding lines. The deployment of resistant varieties is further complicated by putative changes in virulence in the pathogen population in different parts of the CAC. Many improved wheat lines received through international nurseries or other exchange programs have shown high levels of resistance to stripe rust, leaf rust and powdery mildew to local pathogen populations. It is anticipated that this germplasm will play an important role in developing stripe rust resistant wheat varieties either through direct adoption or using them as parents in breeding programs.