

Canadian wheat, barley, and oat stem rust in 2006

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Above average temperatures and below average precipitation occurred across the Canadian Prairie region during the 2006 growing season, which were highly unfavorable for stem rust infection. Stem rust was detected at trace levels on susceptible wheat lines in trap nurseries, cultivated barley, and on wild barley (*Hordeum jubatum*) in 2006. Rye stem rust (*P. graminis* f. sp. *secalis*) was very frequently isolated (80.5%) from the survey samples. The dominant *P. graminis* f. sp. *tritici* race in 2006 was QFCSH (86%), with 2 isolates of QCCJN (7%) and 1 each of RCCJN and RKQSR also identified. Stem rust in cultivated and wild oat also was at trace levels in western Canada in 2006. Oat stem rust samples were identified using the newly described letter code nomenclature. All oat cultivars recommended for production in Canada are susceptible to stem rust races TJG, TJJ, and TJS. Race TJJ was predominant in Manitoba (46.4% of samples from wild oat and 68.4% from cultivated oat) and on cultivated oat (67%) in Saskatchewan. Race TGD was predominant on wild oat in Saskatchewan (32.5%) and commonly found in Manitoba (21.9% on wild, 9.4% on cultivated). Three new races were identified in 2006. These races have virulence patterns similar to races TGD, TJD, and TJS, but all were high on Kyto (gene *Pg12*), mesothetic (X) on the *Pg-a* complex in a Rodney 0 background, and low on the lines Alpha and Omega (sources of *Pg-a* resistance). These races may be useful in identifying the second recessive gene that is postulated to be present in the lines Alpha, Omega, and *Pg-a*. Additionally, race TJS+Ω (avirulent only on *Pg6*, *Pg10*, and *Pg16*) increased in prevalence to 5.4% on wild oat and 12% on cultivated oat in Manitoba, and was detected for the first time in Saskatchewan.