Stem rust of wheat: An Oklahoma perspective

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Historical losses from stem rust of wheat in the United States have consistently been lower in Oklahoma than in any other state in the "rust pathway" of the Great Plains. This is clearly indicated by the percent losses reported for stem rust (Cereal Disease Lab, MN; http://www.cdl.umn.edu/loss/loss.html) for the period of time from 1918-2006. During this 89 year period, the greatest loss from stem rust reported in Oklahoma was 4% in 1919 as compared to the highest losses reported from Texas (10.0% in 1922 and 1935), Kansas (12% in 1935), Nebraska (20% in 1944), South Dakota (35.2% in 1953), and North Dakota (56.5% in 1935). However, extension records from county educators in Oklahoma during the 1930s-1940s indicate considerable concern for the potential losses from stem rust (but more so, leaf rust) as well as concern for other wheat agronomic characters including maturity date and straw strength. To address many of these concerns, Mr. Joseph Danne developed and released 'Triumph' wheat in 1940. Triumph contributed not only genetic resistance to stem rust of wheat, but also offered substantially earlier maturity as compared to other varieties. This early maturity along with the inability of stem rust to overwinter in Oklahoma as reported by K. Starr Chester (Oklahoma A&M) and M. Eversmeyer et al. (USDA-ARS, Kansas State University) may explain the significantly lower severity of stem rust of wheat in Oklahoma as compared to the other states in the Central Plains of the United States.