

CEREAL RUST BULLETIN

Report No. 4

May 19, 1998

Issued by:

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- Wheat leaf rust is increasing in the central Great Plains and Arkansas.
- Wheat stripe rust was found in central Oklahoma and eastern Arkansas.
- Oat crown rust was found on oats growing near buckthorns in Minnesota on May 14. Buckthorn infections, in the north central plains, occurred 2-3 weeks earlier than normal.

Most of the winter-sown small grain crop is in good condition throughout the United States. By mid-May, harvest had commenced from southern Georgia to southern Texas. Most of the crop in the central plains is near normal or slightly ahead of normal crop maturity. In the spring grain-growing area, planting is near completion and crop emergence is earlier than normal for this date.

Wheat stem rust. There have been no new reports of wheat stem rust since the last bulletin when rust was severe in southeastern U.S. varietal plots. These southern locations will provide wheat stem rust inoculum for susceptible wheats further north.

Wheat leaf rust. Leaf rust was severe in plots and fields in early May in central Texas, but in north central Texas fields, rust was light because heavy rainfall had washed spores off plants and limited rust development (Fig. 1). During mid-May, leaf rust was increasing in plots in southern and central Oklahoma, but is still light in fields in these areas. In plots at Stillwater, OK, severities of 60-90% were reported on flag leaves of susceptible cultivars such as Chisholm, Karl 92, and Cimarron. However, there was little rust on cultivars like 2163, Jagger, Custer, and 2137. Rust in Oklahoma is not developing as fast this year in commercial fields because of the cooler than normal temperatures in April and early May and less rust overwintering in the state. In mid-May, in south central Kansas, 5% leaf rust severities were reported on the flag leaves of susceptible cultivars. Severities of 20% were found on flag leaves in fields in southeastern Kansas in mid-May. In central Kansas, the flag leaves were clean, but the flag-1 and flag-2 had



leaf rust severities of trace to 10%. These rust severities are normal for this time of year in Kansas. Leaf rust is severe on some susceptible cultivars in the coastal plain of Georgia, but light in the Piedmont and northern Georgia. In most of the southeastern U.S., rust is severe on susceptible cultivars in plots, but light in commercial fields. Moisture was a limiting factor in rust development in early May, and now the crop is maturing to the point where losses to leaf rust will be limited.

In early May, severities of 20% were reported on wheat in Clarendon County plots in northeastern South Carolina. Leaf rust was light in plots in eastern Virginia in late April.

Reports from Arkansas indicate leaf rust increased rapidly last week, especially on late lines. This could provide a significant source of inoculum for areas to the north.

Leaf rust is established in the Central Valley of California, where severities range from 10-50%.

Nine races were identified from leaf rust collections made in early April, in central and southern Texas (Table 1). These races were also identified from rust collections made in Texas in 1997.

Table 1. Wheat leaf rust races identified from Texas collections through May 15, 1998

Race code	Virulence formula ¹	Number of isolates
MBDL	1,3,17,10	7
MBRL	1,3,3ka,10,11,30	6
MDBL	1,3,10,24	2
MDRL	1,3,3ka,10,11,24,30	11
MCDL	1,3,10,17,26	9
MJBL	1,3,10,16,24	4
MFBL	1,3,10,24,26	2
TDBL	1,2a,2c,3,10,24	1
TDRL	1,2a,2c,3,3ka,10,11,24,30	3
Number of isolates		45
Number of collections		23

¹Single gene resistances evaluated: *Lr* 1, 2a, 2c, 3, 3ka, 9, 10, 11, 16, 17, 18, 24, 26, 30.

Wheat stripe rust. In early May, wheat stripe rust was reported in plots in central Oklahoma. In late April and early May, weather conditions were ideal for stripe rust development in many parts of Oklahoma. A three-meter square wheat stripe rust center was found in a commercial field in Anderson County, Kansas on May 18. The center was showing the effects of warmer weather and no further development is expected.

In early May, wheat stripe rust was severe in plots in northwestern Arkansas and light in commercial fields in the Delta region of eastern Arkansas. Warmer temperatures are expected to retard further development of stripe rust in the south central U.S.



In the Mount Vernon area of eastern Washington, stripe rust was increasing, while in central Washington, rust development was slowed because of dry weather.

With the continued cool temperatures in the Central Valley of California, stripe has continued to increase. Spike infections were reported in commercial fields in the Sacramento and northern San Joaquin Valleys, particularly of the cultivar Express.

Oat stem rust. There have been no new reports of oat stem rust since the last bulletin. In late April, significant amounts of oat stem rust were found in southern U.S. fields and plots.

Oat crown rust. The first uredinial infections on oat in the St. Paul, MN buckthorn nursery were found on May 14. This is 2-3 weeks earlier than normal.

In east central South Dakota, pycnidia on buckthorn were observed on May 7, and mature aecia were observed on May 13. These infections are very early this year (nearly 2-3 weeks earlier than the last few years). Throughout the northern oat-growing area, aeciospores could be a significant source of local inoculum this year.

In early May, crown rust severities of 100 % were reported in Yolo county oat plots in California. By mid-May, severities of 100% were found in plots of susceptible cultivars in regional plots in the Central Valley of California.

Barley stem rust. No barley stem rust has been reported in the U.S. this year as of May 5.

Barley leaf rust. In late April, barley leaf rust was light in plots in eastern Virginia. Barley leaf rust was light in plots throughout the Central Valley of California in mid-May.

Stripe rust on barley. In early May, stripe rust on barley was increasing in the Mount Vernon area of northwestern Washington. Stripe rust on barley is severe in plots in the Central Valley of California with 100 S readings for many breeding lines and cultivars. The initial infections were later this year (after heading) than the previous 2 years, when statewide losses of 20-25% occurred. As a result, losses to stripe rust should be down somewhat compared to the last two years. UC 937, a resistant line being prepared for certification and release, shows very good resistance.

Rye leaf rust. There have been no new reports of rye leaf rust since the last bulletin.

Rye stem rust. No rye stem rust has been reported in the U.S. this year as of May 15.

Barberry rust. There have been no new reports of rust on barberry since the last bulletin.

Latest rust news. As always, for the latest rust news, subscribe to the cereal rust survey mail list (see front page header) or visit the Cereal Disease Laboratory's web page (<http://www.crl.umn.edu>) regularly.



Fig. 1. Leaf rust severities in wheat fields on May 15, 1998

