CEREAL RUST BULLETIN

Report No. 7

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From:

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(In cooperation with the Minnesota Agricultural Experiment Station)

- Wheat stem rust foci were found in southeastern Illinois and northwestern Kentucky.
- Many new leaf rust races found in Texas.

The small grain harvest is underway from South Carolina to southern Kansas. Winter wheat is in good condition throughout most of the U.S. Last week, in much of the northern small grain area, growing conditions were excellent, except in parts of North Dakota and Minnesota where moisture was short .

Wheat stem rust. During the second week in June, wheat stem rust foci one meter in diameter were found in southeastern Illinois and northwestern Kentucky fields at the full berry growth stage. The stem rust severities in the middle of the foci were rated 40%, while towards the outer edge of the 1 m foci, only traces were observed. These foci developed from spores deposited in rain showers 4 weeks ago. Similar foci of leaf rust infections were also found in these fields, which developed from spores deposited in the same rain showers. The stem rust that develops in this area will be a source of inoculum for susceptible cultivars farther north.

Wheat leaf rust. During the second week in June, traces of leaf rust were found in wheat fields from northeastern Missouri to southern Indiana. Throughout this area, leaf rust was lighter than normal because the rust did not overwinter and during May, rainfall was less than normal. During the second week in June, trace leaf rust ratings were recorded on most of the wheat cultivars in southern Indiana plots, while 20% severities were recorded on a few susceptible lines.

By the second week in June, 10% leaf rust severities were observed in wheat fields in north central Kansas and south central Nebraska (Fig. 1). In varietal plots in north central Kansas, 30% severities were common on susceptible cultivars. In southwestern Nebraska, leaf rust was very light in varietal plots and fields. Warm temperatures have pushed the crop to near normal maturity.

In early June, traces of leaf rust were observed on lower leaves of wheat in eastern Colorado.

During the second week in June, traces of leaf rust were found in central and southeastern South Dakota fields and varietal plots. During the second week in June, traces of leaf rust were found in winter wheat varietal plots in east central Minnesota and southern Wisconsin.In early June, wheat leaf rust was increasing in the Skagit Valley of western Washington. East of the Cascades, in eastern Washington, 1-2% severities were reported in some fields. Leaf rust was also increasing in the Willamette Valley of western Oregon.
The preliminary leaf rust race identifications for 1997 are shown in Table 1. So far, 18 different races have been identified in Texas this year, which is much more than normal. Some races like MBNL, MBTL and MFDL have not been identified before in Texas.

TABLE 1. Wheat leaf rust races identified through June 17, 1997

		Number of isolates by state					
Prt code	Virulence formula[1]	AL	AR	GA	LA	OK	TX
MBBL	1,3,10		1				
MBGL	1,3,10,11			1			
MBNL	1,3,3ka,10,17						4
MBRL	1,3,3ka,10,11,30	3	6		2		10
MBTL	1,3,3ka,10,11,17,30						1
MCBL	1,3,10,26						2
MCDL	1,3,10,17,26						17
MCRL	1,3,3ka,10,11,26,30						3
MCTL	1,3,3ka,10,11,17,26,30						2
MDBL	1,3,10,24						6
MDGL	1,3,10,11,24						1
MDRL	1,3,3ka,10,11,24,30						13
MFBL	1,3,10,24,26		3				
MFDL	1,3,10,17,24,26						1
MFRL	1,3,3ka,10,11,24,26,30					1	
MFTL	1,3,3ka,10,11,17,24,26,30					1	
PNMQ	1,2c,3,3ka,9,10,18,24,30			4			1
TBBL	1,2a,2c,3,10			1			2
TDBL	1,2a,2c,3,10,24		2				12
TDRL	1,2a,2c,3,3ka,10,11,24,30						3
TFCL	1,2a,2c,3,10,24,26,30			1			
TFBL	1,2a,2c,3,10,24,26						2
TFGL	1,2a,2c,3,10,11,24,26						4
TGBL	1,2a,2c,3,10,16						1
TLGG	1,2a,2c,3,9,11,18			2			
Number of isolates		3	12	9	2	2	85
Number of collections		2	6	6	1	1	47

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

Wheat stripe rust. During the second week in June, stripe rust was very severe on many wheat cultivars in the Skagit Valley of western Washington. In the Palouse area of Washington, stripe rust ratings of 10-20% were found in wheat fields, but rust losses will be minimal since most of the cultivars have good adult plant resistance.

Oat stem rust. There have been no new reports of oat stem rust since the May 13th bulletin.

Oat crown rust. In early June, moderate to severe aecial infections were found on buckthorn bushes in south central and southeastern Wisconsin. By the second week in June, traces of crown rust were found in southern Wisconsin fields. By June 17th, 20% crown rust severities were observed on lower leaves of oats growing near the buckthorn bushes in the nursery on the University of Minnesota, St. Paul campus.

In early June, aecial development was light on buckthorn bushes in eastern South Dakota.

In early June, moderate levels of crown rust were found on buckthorn bushes in the Ontario, Canada area.

Barley stem rust. There have been no new reports of barley stem rust since the last bulletin.

Barley leaf rust. By the second week in June, barley leaf rust was moderate to severe in the Skagit Valley of western Washington.

Stripe rust on barley. In early June, barley stripe rust was severe on susceptible winter cultivars at the full berry growth stage in the Skagit Valley of western Washington. As of the second week in June, there have been no reports of barley stripe rust being found east of the Cascade Mountains in the Pacific Northwest.

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

Stem rust on barberry. During the second week in June, aecial development was observed on barberry bushes (alternate host for stem rust) in southeastern Minnesota.

Special Note:

The Cereal Rust Lab web page has moved; please update your bookmarks. The new url is: http://www.crl.umn.edu/

Fig. 1. Leaf rust severities in wheat fields on June 17, 1997