

CEREAL RUST BULLETIN

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- Wheat leaf rust in the northern plains is more severe than in recent years.

Substantial losses to barley stripe rust are expected in the Pacific Northwest.

The winter wheat harvest has begun from southwestern New York to northeastern South Dakota. Spring-sown grains in the northern Great Plains are one to two weeks ahead of normal crop development.

Wheat stem rust. By early July, traces of wheat stem rust were found in check plots of highly susceptible spring wheat cultivars such as Baart, in eastern South Dakota. By mid-July, traces of wheat stem rust were found in plots of the spring wheat cultivar Max in southeastern North Dakota. In early July, trace to 20% severities were observed in winter wheat plots in east central Minnesota and southeastern North Dakota. This year there have been few reports of stem rust in fields and nurseries and the number of rusted collections received at the Cereal Disease Lab are 1/8 of normal.

By mid-July, scattered green plants in eastern Washington winter wheat plots had 90% stem rust severities; traces of stem rust were found on susceptible spring wheat lines. In the spring wheats, losses will be minimal since there is adequate stem rust resistance.

Wheat leaf rust. As indicated in the previous Cereal Rust Bulletin, leaf rust was unusually severe on winter wheat in the northern Great Plains this year. Although many of the spring wheat cultivars in the northern plains are resistant to leaf rust, some cases of higher than usual leaf rust severities have been reported. In the past two weeks, in east central North Dakota, trace to 30% leaf rust severities were observed on flag leaves of commercial spring wheat cultivars (2375, Grandin, Barrier) at the anthesis stage. Losses are expected, especially in late planted fields. In plots of susceptible spring wheats in west central Minnesota, east central



South Dakota, and east central north Dakota, 20-100% leaf rust severities were reported on flag leaves by mid-July. In early July, 60% severities were observed in fields of winter wheat at the mid-dough stage in southeastern North Dakota. In both North Dakota and South Dakota, some yield losses from leaf rust are expected in winter wheat.



In early July, leaf rust was severe in the spring wheats in northeastern Oregon. By mid-July, 90% severities were observed on susceptible spring wheats growing in eastern Washington plots.

The preliminary leaf rust race identifications for 1998 are shown in Table 1. The race identifications for Texas are from the southern part of the state where there has been a significant increase in the number of T--- races that have been found.

Table 1. Wheat leaf rust races identified through July 21, 1998

Prt Code ¹	Virulence Formula ²	Number of Isolates			
		TX	AL	GA	LA
MBBQ	1, 3, 10, 18		2		
MBDL	1, 3, 17, 10	8			
MBGQ	1, 3, 10, 11, 18			2	
MBRL	1, 3, 3ka, 10, 11, 30	7	6	3	
MCDL	1, 3, 10, 17, 26	24			
MCRL	1, 3, 3ka, 10, 11, 26, 30				1
MDBL	1, 3, 10, 24	4			
MDRL	1, 3, 3ka, 10, 11, 24, 30	14			3
MFBL	1, 3, 10, 24, 26	2			
MJBL	1, 3, 10, 16, 24	4			
MNRL	1, 3, 3ka, 9, 10, 11, 24, 30			1	
TCBL	1, 2a, 2c, 3, 10, 26	2			
TCML	1, 2a, 2c, 3, 3ka, 10, 26, 30				1
TDBL	1, 2a, 2c, 3, 10, 24	1			
TDDL	1, 2a, 2c, 3, 10, 17, 24	5			
TDRL	1, 2a, 2c, 3, 3ka, 10, 11, 24, 30	8			
TDTL	1, 2a, 2c, 3, 3ka, 10, 11, 17, 24, 30	2			
TFBL	1, 2a, 2c, 3, 10, 24, 26	5			
TFBQ	1, 2a, 2c, 3, 10, 18, 24, 26	1			
TFGQ	1, 2a, 2c, 3, 10, 11, 18, 24, 26	2			
TFRQ	1, 2a, 2c, 3, 3ka, 10, 11, 18, 24, 26, 30	1			
TLGG	1, 2a, 2c, 3, 9, 11, 18			2	
Number of isolates		90	8	8	5
Number of collections		46	5	5	4

¹Prt code, see Phytopathology 79:525-529.

²Single gene resistances evaluated: *Lr1,2a,2c,3,3ka,9,10,11,16,17,18,24,26,30*.

Wheat stripe rust. During mid-July, wheat stripe rust was increasing in spring wheat fields in the Palouse region of Washington, but the adult plant resistance of commercial cultivars should minimize losses. The most severe stripe rust in the Palouse region was on the cultivar Vanna. This increased severity may be due to a new race in the area.



Oat stem rust. In early July, trace to 5% severities of oat stem rust were reported in plots in eastern South Dakota and in a southwestern Minnesota field. The last report of oat stem rust in the Great Plains in 1998 was in early May in central Texas.

Oat crown rust. During early July, crown rust severities ranged from trace to 5% in oat fields and trace to 20% on flag leaves in plots in eastern South Dakota, west central Minnesota and southern Wisconsin. By mid-July, 40-60% severities were observed in plots in east central South Dakota. This year, throughout the upper Midwest, the crown rust severities are much less than last year because of the cooler than normal weather in early June and infections were less than normal on buckthorn, the alternate host of oat crown rust.

Barley stem rust. The first report of barley stem rust this year was of traces in spring barley plots in early July, in southwestern Minnesota and east central South Dakota. During mid-July, traces of stem rust were found in southeastern North Dakota and west central Minnesota spring barley plots. The number of barley stem rust infections found is significantly down from the number found in the mid-1990s. The decrease in barley stem rust infections is probably due to the decrease in the percentage of QCCJ, which infects barley, in the race population (due to the reduced acreage of QCCJ susceptible winter wheats in Kansas).

Barley leaf rust. In mid-July, trace to 10% leaf rust severities were observed in barley plots in west central Minnesota, east central South Dakota and southeastern North Dakota. In late June, 50% leaf rust severities were observed on barley in central Wisconsin fields.

Stripe rust on barley. By early July, stripe rust on barley in the Pacific Northwest was severe on susceptible spring-sown barleys from the intermountain area of northeastern California, through northeastern Oregon to eastern Washington and northern Idaho. In this area, 50% rust severities were recorded on Steptoe, but on other cultivars with slow-rusting characteristics like Baroness 5% severities were recorded. Throughout most the Pacific Northwest area, losses to barley stripe rust will be much more severe than last year when 0.6% losses (4% in Oregon, 0.5% in Washington and 0.1% in Idaho) were recorded in this area.

Crown rust on barley. During the second week in July, trace to 1% crown rust severities were observed on barley growing in southeastern North Dakota plots. Traces of crown rust were found on barley in the buckthorn nursery in St. Paul, MN. Throughout the upper Midwest this year crown rust on barley has been less severe than in previous years.



Rye stem rust. The first report of rye stem rust this year was of trace amounts found in a winter rye field in southeastern North Dakota.

Rye leaf rust. In early July, trace to 2% severities were reported on spring rye in plots and fields in west central Minnesota and northwestern South Dakota.

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

