

CEREAL RUST BULLETIN

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From:

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In late June, winter wheat harvest had commenced in southwestern Nebraska. Spring-sown small grains are in good condition but moisture stress is becoming a problem in some areas of the northern Great Plains.

Wheat stem rust. On June 21, a focus of 10% wheat stem rust severity was found in a northwestern Kansas plot of McNair 701 and traces in Karl at the hard dough stage. The hot dry weather in late May and early June was not conducive for rust increase. Since only light amounts of stem rust were found in the central Great Plains, wheat stem rust is not expected to be a problem on susceptible wheats in the northern Great Plains.

Stem rust was first reported in the northern soft red winter wheat area in mid-June. There were traces in a central Indiana nursery and a east central Illinois commercial field.

Wheat leaf rust. In northern Kansas, final leaf rust severities were light because dry hot conditions pushed the crop to a quick maturity. During the third week in June, trace to 20% leaf rust severities were observed in winter wheat fields in south central Nebraska and southeastern South Dakota (Fig. 1). Damage will vary with local conditions but some fields will suffer losses in yield. During late June, traces of leaf rust were observed in spring wheat fields in west central Minnesota and 10% severities in plots of the susceptible cultivar Baart in southern Minnesota and southeastern North Dakota. Most of the infections were on the lower leaves. During late June in southeastern North Dakota winter wheat plots, trace-5% severities were observed at 1/4 berry stage. On June 17 traces of leaf rust were found on winter wheat 65 km southwest of Winnipeg, Canada.

In mid-June, in the northern soft red winter wheat area, traces of leaf rust were observed in fields and traces to 10% in nurseries. This was much less leaf rust than normal for this area because of drier than normal conditions, no rust overwintering which was related to later than normal fall planting and less inoculum arriving from the south.

The preliminary leaf rust races identified in the 1994 survey (Table 1) were identified in previous surveys.

Wheat stripe rust. In eastern Washington, wheat stripe rust was light this year which was due to the lower than normal rainfall and higher than normal springtime temperatures.

Oat stem rust. Oat stem rust was first detected in the central plains this year on June 21. Traces were found in north central Kansas plots and in a field in southwestern Nebraska at the late milk growth stage. Currently it appears that oat stem rust should not cause a problem in the northern oat growing area.

TABLE 1. Wheat leaf rust races identified through June 28, 1994.

Prt code	Virulence formula ¹	Number of isolates by state							
		AR	AL	CA	GA	LA	NC	OK	TX
FBR-10,18	2c,3,3ka,10,11,18,30						1		
MBB-10	1,3,10				1				
MBG-10	1,3,10,11	1	10		14	2		2	8
MBR	1,3,3ka,11,30	2							
MBR-10	1,3,3ka,10,11,30				4		3		13
MCD-10	1,3,10,17,26			4					2
MDB-10	1,3,10,24								2
MFB-10	1,3,10,24,26				1				10
MGD-10	1,3,10,16,17								2
PBR-10,18	1,2c,3,3ka,10,11,18,30		2						
TBD-10	1,2a,2c,3,10,17								2
TBG-10	1,2a,2c,3,10,11								3
TDB-10	1,2a,2c,3,10,24	3						2	9
TDG-10	1,2a,2c,3,10,11,24								17
TFB-10	1,2a,2c,3,10,24,26								2
TLG-18	1,2a,2c,3,9,11,18				2				
Number of isolates		6	12	4	22	2	4	2	70
Number of collections		3	6	2	12	1	2	1	40

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

Oat crown rust. During the third week in June, trace to 10% crown rust severities were found on oat plots in north central Kansas and east central South Dakota. Trace to 10% severities were observed in fields in southern Minnesota, west central Wisconsin and east central South Dakota. Most of the infections were on the lower leaves.

Barley stem rust. The first report of barley stem rust in the U.S was June 22 in southwestern Nebraska plots. Traces were found on barley plants at the soft dough stage. This is the least amount of barley stem rust observed in the U.S. in the last five years.

Barley leaf rust. During mid-June, 10% barley leaf rust severities were reported in central Kentucky plots. In late June light leaf rust was found in barley plots at St. Paul, Minnesota.

Barley stripe rust. There have been no new reports of barley stripe rust since the May 16 bulletin.

Barley crown rust. During the week of June 20, trace to 5% barley crown rust severities were found in barley fields and nurseries in eastern North Dakota. This disease, which appeared on barley in previous years in Nebraska and North Dakota, cycles to barley from the buckthorn (*Rhamnus cathartica*). The pathogen is virulent to *Agropyron repens* and *Hordeum jubatum* as well as cultivated barley. This pathogen is not virulent to cultivated oats or wild oats. Traces of crown rust were found on barley and rye in the buckthorn nursery at St. Paul, Minnesota on June 22. Heavy infections on *Hordeum jubatum* and *Bromus tectorum* found previously near another buckthorn hedge in St. Paul were confirmed to be barley crown rust.

Rye leaf rust. During the third week in June, severe leaf rust (20% severities on lower leaves) were observed in winter rye fields in east central South Dakota.

Crown rust on Buckthorn. In late June, aecial development was heavy on buckthorn (alternate host) in Minnesota. The spread from buckthorn to oats has been occurring the past two weeks.

Stem rust on Barberry. There have been no new reports of stem rust on barberry since the June 14 bulletin.

Fig. 1. Leaf rust severities in wheat fields on June 28, 1994.

