CEREAL RUST BULLETIN

Report No. 4

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From:
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Most of the winter-sown small grain crop is in good condition throughout the United States. The effects of freeze damage on winter wheat are still being evaluated in western Kansas. Harvest had commenced from southern Georgia to southern Texas by the first week in May. Much of the crop in the central plains is a few days behind normal maturity for this date, but with more warm dry weather the crop should develop at near normal rate. In the spring grain growing area, crop planting and crop emergence remained behind average.

Wheat stem rust. By early May, wheat stem rust was severe on susceptible cultivars in southern and central Texas nurseries. An overwintering site for stem rust was found in a field of CK9835 at milk stage on May 16 near Jonesboro in northeast Arkansas. Incidence was spotty in the field. During the second week in May, stem rust was light on susceptible cultivars growing in plots in northeastern South Carolina. The wheat stem rust that infected plots in a southwestern South Carolina nursery probably overwintered in a field of volunteer CK9835 growing in close proximity to the plots.

Wheat leaf rust. By the second week in May, leaf rust severities ranged from traces to 80% in wheat plots and fields at the soft dough stage from southeastern North Carolina to north-central Texas (Fig. 1). Up to 85-90% leaf rust severity occurred on the susceptible cultivar Wakefield in some nurseries. These rust infected plants are providing leaf rust inoculum for wheats farther north.

By the second week in May, leaf rust was increasing at a very slow rate throughout Kansas because the cool moist weather was not conducive for rust increase. Rust was severe on the lower leaves of susceptible cultivars, e.g. Karl 92, but rust development on the flag leaves was light. With warmer weather, leaf rust should increase rapidly. Five percent leaf rust severities were found on flag leaves of Karl 92 in south-central Kansas.

In the San Joaquin Valley of California, wheat leaf rust is widespread and severe on susceptible cultivars in fields and nurseries. During the first week in May, leaf rust was light in eastern Oregon and eastern Washington fields.

From collections made in south Texas in late March, leaf rust races MCD-10 virulent to *Lr*1,3,10,17,26; MBJ-10 virulent to *Lr*1,3,10,11,17; MBR-10 virulent to *Lr*1,3,3ka,10,11,30; MCR-10 virulent to *Lr*1,3,3ka,10,11,26,30; TFB-10 virulent to *Lr*1,2a,2c,3,10,24,26; TDG-10 virulent to *Lr*1,2a,2c,3,10,11,24; TLG-18 virulent to *Lr*1,2a,2c,3,9,11,18 and PNM-10,18 virulent to *Lr*1,2c,3, 3ka,9,10, 24,30 were identified. The MCD-10 race was identified from a collection made from the cultivar Jagger. Last year race MCD-10 was identified from the same nursery at Uvalde, Texas,

which was the only location where this race was found in 1994. The other races identified so far this year were also found in 1994. Last year race MBR-10 comprised 36% of the U.S. race population.

Wheat stripe rust. During the first week in May, light amounts of stripe rust were found in eastern Washington and eastern Oregon fields. During the second week in May, significant amounts of stripe rust were observed in wheat cultivars in the northwestern Washington area. The cool moist conditions have been conducive for further development of stripe rust in this area.

Stripe rust was found in a field of CK9835 near Jonesboro, Arkansas on May 16. Distribution of stripe rust was spotty in the field although scattered plants were heavily infected. Ten percent stripe rust severities occurred in south-central Kansas plots of McNair 701 in mid-May. Incidence was at 5% level.

Oat stem rust. By the first week in May, oat stem rust was severe in north-central Texas plots. This oat stem rust development was normal and could provide some inoculum for areas farther north, but the lack of oat acreage in the central Great Plains tends to interrupt potential epidemics. In the East Baton Rouge, Louisiana nursery, the rust developed very late but still destroyed some of the oat variety and uniform oat trials. This year oat stem rust was found in as many locations in the southeast as in most years.

Oat crown rust. By the first week in May, crown rust severities ranged from traces to 90% in oat plots at soft dough from east central North Carolina to central Louisiana. This was the most severe crown rust ever observed in this large an area in the Southeast. In northern Alabama, southern Tennessee, and northern Arkansas, however, crown rust infection was still light in mid-May. During the second week in May, crown rust was light in oat fields at late milk in the Central Valley of California.

Barley stem rust. There have no new reports of barley stem rust since traces were found in a barley plot in north central Texas in late April. Limited amounts of barley are grown commercially in the southern states and generally only traces of barley stem rust are found in this area.

Barley leaf rust. Near Guelph, Ontario, Canada, barley leaf rust overwintered in plots and secondary spread was beginning in early May. Leaf rust was found on barley near Jackson in western Tennessee in mid-May.

Barley stripe rust. During the second week in May, stripe rust was found on green flag leaves in barley plots in the San Joaquin Valley of California. The potential exists for barley stripe rust being found from Colorado to Washington.

Rye rusts. During early May, traces of leaf rust were found in winter rye plots at Rosemount, Minnesota. Twenty percent rye leaf rust severities were found on winter rye in south-central Kansas in mid-May. There have been no new reports of rye stem rust since the last bulletin.

Other rust. Crown rust was common on ryegrass from northern Alabama to northern Arkansas.

Stem rust on Barberry. There have been no reports of rust being found on barberry yet this year.

Crown rust on Buckthorn. As of May 15, no aecial infections were found on buckthorn bushes growing on the University of Minnesota St. Paul campus. In normal years, crown rust aecia appear in late April in St. Paul. The abnormally cool spring delayed bud break of buckthorns until early May and, apparently, also delayed germination of crown rust teliospores.

Note: As you no doubt know, all Federal Government agencies are reviewing their program priorities. If you feel that this publication and the related activities of the Cereal Rust Lab are important to you, you can help us by calling the USDA, ARS Midwest Area Director, Dr. Richard Dunkle, 1815 N. University Street, Peoria, IL 61604, phone# 309-681-6602 (Internet address: !A03ADMWA@ATTMAIL.COM). Dr. Dunkle will be glad to discuss how you can make your feelings known in Washington.

The next Cereal Rust Bulletin will likely be distributed around June 2; if you have any information that you feel should be included in the bulletin or just want to share with us, please send an email message to: davidl@puccini.crl.umn.edu or markh@puccini.crl.umn.edu or call Dave Long (612-625-1284) The Cereal Rust Bulletins can also be obtained from the GrainGenes gopher under "Files to Browse".

Fig. 1. Leaf rust severities in wheat fields on May 16, 1995