

CEREAL RUST BULLETIN

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Wheat leaf rust is more severe than usual from central Texas to South Carolina.

- Oat crown rust is more severe this year in the Southeast than it has been for the last 15 years.
- Barley stripe rust severities as high as 80-100% have been reported in California.
- The first known race of wheat stem rust virulent on *Sr31* has been found in Uganda, Africa.

In the southern U.S., the winter-sown small grain crop is generally in good condition and ahead of normal crop development. In the central Great Plains, the crop is in good shape with minimal winter damage this year. In the northern spring grain growing area, planting commenced at an early date, but the recent wet weather has slowed things.

Wheat stem rust. The first report of wheat stem rust in 1999, was in mid-April in southern Louisiana plots, where traces were found on soft wheat cultivars that were maturing rapidly.

Special Note: In a nursery in Uganda, Africa, susceptible type stem rust pustules were found on wheat lines known to have *Sr31*, a gene for which no virulence had been reported previously anywhere in the world. *Sr31* is on the 1B/1R chromosomal translocation, a piece of a rye chromosome that has been introduced into many wheat cultivars. In addition to *Sr31*, the leaf rust resistance gene *Lr26* and the stripe rust resistance gene *Yr9* are also on the 1B/1R translocation. *Sr31* has been used extensively worldwide, but is not currently used much in the United States. Therefore, we do not anticipate that the newly discovered virulence to *Sr31* poses an important threat to wheat production in the U.S. Nevertheless, the Cereal Disease Laboratory will delay further work on the Ugandan isolate of stem rust until the late fall of 1999 when there will be no danger of the new race escaping to the field. All necessary precautions will be taken to keep the Ugandan stem rust isolate strictly separated from other wheat stem rust



research at the Cereal Disease Lab. For more on this subject, visit CIMMYT's web page (<http://192.100.189.39/Index.htm>).

Wheat leaf rust. During mid-April, leaf rust was much more severe and widely distributed than normal in wheat fields and plots from central Texas through to the southern areas of the Gulf Coast states (Fig. 1). The mild winter and moist conditions in February and March contributed to the rust development in much of this area.

In southern Texas, in early April, leaf rust was severe on spring wheats like Norm (30%). In central Texas, where moisture has been available, rust development has been heavy. In mid-April, leaf rust severities of 80% were observed in central Texas plots of TAM-107.

In mid-April, leaf rust was light throughout Oklahoma and south central Kansas. In Kansas, only light amounts of leaf rust overwintered which is the same as in 1998

During mid-April, traces of leaf rust were found in southern Arkansas.

During mid-April, leaf rust was severe in plots of susceptible southern soft red winter wheat cultivars within approximately 75 miles of the Gulf Coast, and some cultivars that previously were resistant are showing significant rust development this year. In some areas of the southeastern U.S., rainfall has been lower than normal but dew formation has been good and, therefore, conditions for leaf rust development have been good.

In mid-April, 40% severities of leaf rust were found on wheat in east central South Carolina plots.

During mid-April, leaf rust was light in wheat plots in the Skagit valley of western Washington.

Wheat stripe rust. During mid-April, wheat stripe rust was severe in a field in the Sacramento Valley of California. In other fields, in the same area, severe rust was expressed in small foci.

In mid-April, wheat stripe rust severities of 30% were reported on susceptible winter wheat lines in the Skagit valley nursery in western Washington.

Oat stem rust. In early April, oat stem rust was found in southern Louisiana nurseries. By April 20 stem rust was severe in the Baton Rouge plots and had killed 50% of the lines. This was the most oat stem rust that has been observed in these plots in the last 10 years.

Oat crown rust. In mid-April, crown rust was severe from central Texas through to southern Louisiana to the panhandle of Florida. During mid-April, 30-50% crown rust severities were observed on susceptible oat plots in Baton Rouge, Louisiana and Fairhope, Alabama. This year the crown rust development is much more severe and widespread than last year throughout the southern U.S. oat growing area. In the southeastern U.S., this is the most crown rust seen in the last 15 years.



Buckthorn. Buds on buckthorn, the alternate host for oat crown rust, are just beginning to break in the buckthorn nursery at St. Paul. This is 7-10 days later than last year, but about normal for most years.

Barley stem rust. As of April 21, no barley stem rust has been reported in the U.S. this year. Stem rust on barley rarely occurs in the southern U.S.

Barley leaf rust. Traces of barley leaf rust were found in the Skagit Valley of Washington.

Stripe rust on barley. By mid-April, barley stripe rust severities of 80-100% were reported in susceptible plots on the University of California-Davis agronomy farm. In mid-April, severities of less than 1% were noted on barley lines in the Skagit Valley nursery of western Washington. Crop maturity has been delayed, but the cooler than normal conditions also delayed rust development.

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



Fig. 1. Leaf rust severities in wheat fields on April 21, 1999

