CEREAL RUST BULLETIN

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- Wheat stem rust is present in a central Texas plot.
- Wheat leaf rust is present throughout the southern U.S.
- Wheat stripe rust is increasing throughout the southern U.S.
- Oat crown rust is increasing in the southern U.S.
- Barley stripe rust is present in California.

Most of the winter wheat crop is in good condition and slightly behind normal crop development throughout the United States. Throughout much of the northern spring grain-growing area the rain and cold temperatures have delayed fieldwork.

Wheat stem rust. In late April, traces of stem rust were found in plots of susceptible wheat at Giddings in central Texas.

Wheat leaf rust. In late April, plots of susceptible wheat cultivars had leaf rust severities up to 80%, in the area from central Texas to the Florida panhandle. In late April in central Texas, susceptible cultivars had moderate to severe rust infections, while in northern Texas wheat at milk stage had light to moderate leaf rust infection (Fig. 1). In central Texas and east central Louisiana, fields that had been sprayed with fungicides had 40% severities. By late April, leaf rust was increasing throughout Oklahoma. Cultivars like 2174, Jagger (Lr17) and Jagalene (Lr 24) were heavily rusted and some yield reduction is expected. In late April, leaf rust was present at low severities in southern Kansas.

By the last week in April, 100% leaf rust readings were observed on flag leaves of *Triticum cylindricum* (*common goatgrass*) growing in roadside ditches in north central Texas.

Southeastern Alabama varietal plots had 80% leaf rust severities, while 100 miles to the north only trace amounts of leaf rust were observed on the same varieties. In late April in east-central Arkansas, trace levels of leaf rust were on lower leaves, and upper leaves did not have any leaf rust in plots of susceptible cultivars.

In late April, traces of leaf rust were found in nursery plots in eastern Virginia at Warsaw and in fields in northeastern North Carolina.

In late April, traces of leaf rust were detected in yield trials in the Central Valley of California.

At various locations in the southern U.S. there have been reports that indicated that leaf rust was the most common rust, while at other locations 100 miles away stripe rust was the most common rust. These reports came from southwestern Georgia to southern Oklahoma. This year the cooler than normal temperatures in the last two weeks of April have been more conducive for stripe rust development than for leaf rust. When temperatures are above 55 F in a 24 hr period stripe rust development usually slows down, but leaf rust will increase significantly. With good moisture conditions and warmer temperatures, leaf rust should increase and provide inoculum for the northern wheat growing area.

Wheat stripe rust. In late April, stripe rust was moderate to severe in north central Texas and Oklahoma plots and fields (Fig. 2). Some fields in this area had been sprayed for rust. By early May, in southern Oklahoma and northern Texas, dry conditions were slowing the development of stripe rust.

On April 30 in a wheat-breeding nursery at Lahoma, in north central Oklahoma, the cultivars Custer, Ok101 and 2137 had 80% stripe rust severities. In the same nursery Jagger and Jagalene had trace to 5% stripe rust severities. In late April, Jagger and Jagalene in north central Texas had 30-40% stripe rust severities. In early May, a field of Jagger at heading stage in south central Kansas had 30-40% stripe rust severity. These observations are significant because they are the first reports of fully susceptible reactions to stripe rust on Jagger, Jagalene, and Cutter. It is possible that these infections are caused by a new virulence in the stripe rust population in the southern and central Great Plains. This new virulence could have a serious impact on wheat production throughout the region, and especially in Kansas and Oklahoma where Jagger and Jagalene are planted on more than 65% and 50% of the total wheat area, respectively. However, the impact of this new stripe rust virulence in Oklahoma may be limited since most of the wheat is past the heading stage and current severity levels on Jagger and Jagalene are low. In Kansas, the wheat is just at the heading stage, moisture levels are higher, and current severity levels are higher, which could lead to significant yield losses (A. Klatt).

By the third week in April, stripe rust was found throughout Arkansas and in southwestern Arkansas plots with 100% severities. In late April, wheat plots with 90% severities were observed at Marianna (east-central Arkansas) and cool temperatures were still favorable for infection, but insufficient moisture was limiting spread. Losses to stripe rust are projected in this area.

In late April, plots of susceptible cultivars had trace-80% severities in the panhandle of Florida, southwestern Georgia and southern Alabama. By late April, stripe rust was reported as far north as southeastern Virginia.

This year stripe rust infections in the southern US are more severe and extensive than last year due to lower than normal temperatures in the last two weeks of April.

In California, cool and wet weather in late April were ideal for stripe rust infection but rust levels remained low to moderate on most of the wheat acreage (dominated by resistant cultivars Summit and Blanc Grande). In late April, in the Central Valley of California plots of susceptible cultivars had severe stripe rust and severe rust was found in the screening nursery at UC Davis. In early May, stripe rust was increasing in fields and nurseries in the Sacramento Valley.

During the third in April wheat stripe rust was developing rapidly in the Pacific Northwest because of moist weather, which was favorable for rust development. In northwestern Washington wheat fields with 20% rust severities were reported. This year, stripe rust occurred earlier than normal because of the warm winter weather. Based on stripe rust reactions in disease monitoring nurseries at Walla Walla and Hermiston, and rust samples from Corvallis, stripe rust races are the same or similar to those detected last year in the Pacific Northwest. Therefore, wheat varieties that were resistant or susceptible last year will be resistant or susceptible this year.

Oat stem rust. During the last week in April, oat stem rust was observed in plots in central Texas. From collections made in south Texas in late March, race NA-27 and a new race with virulence on Pg-15 and Pg-a were identified. These races were also identified in Texas and much of the U.S. in 2004.

Oat crown rust. In late April, 60-80% severities were observed in central Texas fields while trace severities were reported in northern Texas. In early May, oat plots in southern Alabama and the Florida panhandle had 80% rust severities. These southern locations will provide inoculum for the northern oat growing areas.

In late April, low levels of oat crown rust were found in the crown rust-screening nursery at UC Davis.

Buckthorn. Light pycnial infections were observed on emerging buckthorn leaves in the nursery at St. Paul, Minnesota on May 2. Cooler than normal temperatures have slowed down pycnia development. Buckthorn serves as the alternate host for oat crown rust.

Barley stem rust. There have been no reports of barley stem rust this year.

Barley leaf rust. In late April barley leaf rust was increasing on entries in the barley stripe rust screening nursery at UC Davis.

Stripe rust on barley. In late April, barley stripe rust was found on highly susceptible cultivars in the screening nursery at UC Davis and yield trails in the Central Valley in California.

Rye rusts. During the last week in April, severe rye leaf rust was found in fields in the Florida panhandle and in southern Alabama plots.

Fig. 1. Leaf rust severities in wheat fields - May 4, 2005

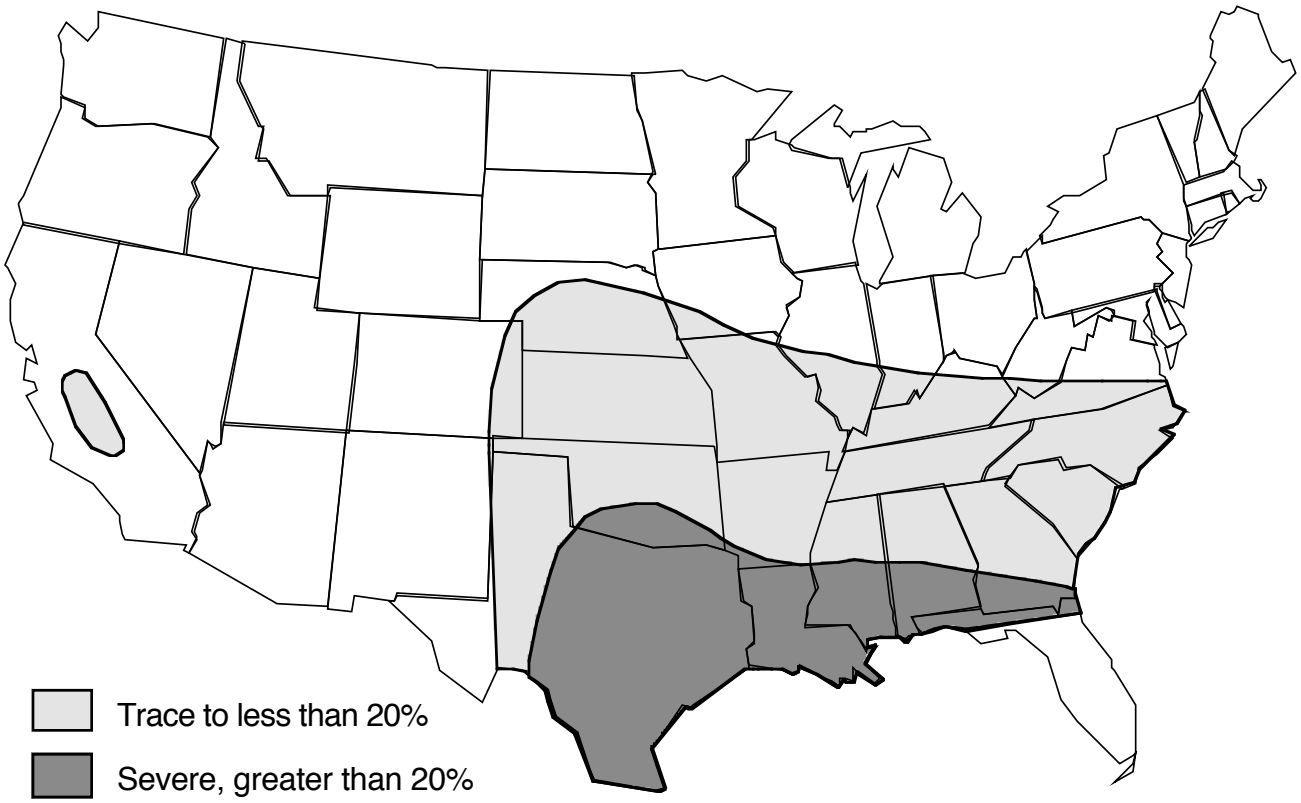

Fig. 2. Stripe rust severities in wheat fields - May 4, 2005