

CEREAL RUST BULLETIN

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- Wheat stem rust is scattered throughout the southern U.S., but only in light amounts.
- Wheat stripe rust is more scattered and heavier than usual in the south central U.S.
- Oat stem rust is more widespread and more severe than it has been in the last five years.
- Stripe rust on barley is increasing in the Pacific Northwest.

Throughout the southern United States, the winter-sown small grain crop is generally in good condition and one week behind normal maturity. The winter wheat crop in the central Great Plains is in good shape and slightly ahead of normal maturity. In the past two weeks, in most of the spring grain-growing area, planting has progressed rapidly because of the warm sunny weather.

Wheat stem rust. During late April, wheat stem rust severities were light in varietal plots in northwestern Florida, northeastern Louisiana and central Texas. Stem rust was severe in south central Louisiana and west central Mississippi plots. Wheat stem rust was severe on cultivars like CK 9835 in northwestern Florida plots, but no stem rust was found on the majority of cultivars. This year wheat stem rust is scattered throughout the U.S., but only in varietal plots and generally only in light amounts. These southern locations may provide some wheat stem rust inoculum for susceptible wheats further north.

Wheat leaf rust. During the last week in April in the southeastern U.S. , severities of 60% were observed in plots of susceptible soft red winter cultivars, while in fields trace to 1% severities were more common on the flag-1 leaves (Fig. 1). Wheat leaf rust was lighter than normal in both plots and fields, which was due to the cooler than normal early spring and the heavy rainfall in early April which tended to keep the spores inside the wheat canopy. It was also observed that during April, relative humidities were low and therefore there was little dew formation, which is needed for rust infection to occur.

During the last week in April, wheat leaf rust severities in north central Texas and southern Oklahoma fields ranged from trace to 1%, while in plots in central Texas, 100% severities were observed. In southwestern Oklahoma plots, or a few pustules on lower leaves of susceptible cultivars and none was found in surrounding fields. In north central Oklahoma, some rust pustules were found on the flag and flag-1 leaves of susceptible cultivars. Rust is not developing at a very fast rate in southern Oklahoma because of the cooler than normal temperatures and less rust overwintered in this area than is normal.

During late April, leaf rust was in the mid-canopy leaves of wheat growing in south central Kansas.

During late April, leaf rust severities of 5-10% were observed on the flag leaves of soft red winter wheats in east central North Carolina and central South Carolina.



By late April, leaf rust severities ranged from 10-40% in plots throughout the Central Valley of California, but because of the advanced crop development, losses are not expected to be significant. In mid-April, leaf rust was light in fields in northeastern Oregon.

Wheat stripe rust. During late April in Arkansas, temperatures were cooler than normal (highs in the 60s and lows in the 40s), which allowed for continued development of stripe rust throughout the state in plots and fields. During the last part of April, stripe rust was severe in west central Mississippi plots and light in and northwestern and central Louisiana and north central Texas varietal plots as well as northeastern Louisiana fields. Wheat stripe rust is much more scattered and heavier than normal this year in the south central U.S. , but as temperatures rise, stripe rust development will decrease and losses will be lessened.

During the last week in April, wheat stripe rust was severe in regional test plots from Butte County (northern Sacramento Valley) south to Kings County (San Joaquin Valley) in the Sacramento Valley of California. Rust “hot spots” were found in fields of the fall-sown hard red spring wheat cultivar Express, the predominant cultivar grown in the Sacramento Valley.

By late April, wheat stripe rust was present in fields as far north as Pullman in eastern Washington and 40% severities were found on susceptible cultivars in plots at Walla Walla. In southeastern Washington, in fields of hard red winter wheat, severities of 40% were found and farmers are spraying for rust control. Also by late April, stripe rust was found on wheat in northeastern Oregon plots, but was not as heavy as in the Walla Walla plots. By early May, 50% stripe rust severities were reported in wheat plots in northwestern Washington.

Oat stem rust. During the last week in April, oat stem rust was severe and overwintering centers of rust were found in oat varietal plots in northwestern Florida, southwestern Alabama and central and northwestern Louisiana. In varietal plots in north central Texas, northeastern Louisiana, west central Mississippi, southeastern and east central Alabama, oat stem rust was light. This is the most widespread distribution of oat stem rust in the last 5 years in the southern U.S. This increase in oat stem rust may be partially due to increases in acreage of stem rust susceptible cultivars like Harrison and Chapman. These cultivars are widely adapted and moderately resistant to crown rust but super susceptible to stem rust. Stem rust from these southern areas will provide inoculum for susceptible oats growing further north.

Oat crown rust. In late April, crown rust was light and less widespread than normal from southeastern U.S. to central Texas. In southeastern U.S. and central Texas varietal plots, crown rust ranged from trace to 20%, while in oat fields severities were light (trace to 2%). This crown rust development is the least in the southern U.S. in the last 5 years. These southern areas will provide little inoculum for areas further north this year.

Abundant well-developed pycnia were observed in the St. Paul, Minnesota buckthorn nursery on April 23. Many of the infected leaves were just 1.0 to 1.5 cm long, which means that they have been infected just as the buds were opening. This suggests that the release of basidiospores may be peaking early this year, relative to the development of the buckthorn leaves, or there will be a very large crop of basidiospores this year. Well developed aecia were found in the St. Paul buckthorn nursery this week, but dry weather has limited development of new infection. Well developed pycnia were found on buckthorn at the Fargo North Dakota buckthorn nursery during the last week in April.

Barley stem rust. No barley stem rust has been reported in the U.S. this year as of May 5. Limited amounts of barley are grown commercially in the southern states. Stem rust on barley rarely occurs in this area.

Barley leaf rust. In late April, traces of barley leaf rust were found on cultivars growing in nurseries in central Texas and northeastern Oregon. Leaf rust of barley was light to moderate on susceptible lines at the Yuma, Arizona nursery by late April.

Stripe rust on barley. In mid-April, stripe rust of barley first appeared on susceptible lines in nursery plots at Yuma, Arizona, and by the end of the month moderate severities were present, and the rust was spreading rapidly. The March and April weather was cooler and much wetter than normal, resulting in much higher relative humidities, which made conditions better for rust infection to occur.

Barley stripe rust was severe in plots throughout the Central Valley of California, with several breeding lines and cultivars at 100% severity by late April. Initial infections occurred later this season than the previous two seasons. Many putative resistant lines are showing effective resistance.



In late April, severities of 50% were reported in plots in northeastern Oregon , northwestern Washington and southeastern Washington.

Rye leaf rust. In a field of rye in southern Alabama in late April, 10% leaf rust severities were observed on the flag leaves.

Rye stem rust. As of May 4, no rye stem rust has been reported in the U.S.

Barberry rust. In mid-April the aecia stage of wheat stem rust was found on barberry leaves in Iowa County, in southeastern Wisconsin. In early May, the pycnia stage of stem rust was found on barberry leaves in Massachusetts.



Fig. 1. Leaf rust severities in wheat fields on May 5, 1998

