



# CEREAL RUST BULLETIN

Issued by:

**Cereal Disease Laboratory**

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Reports from this list as well as all Cereal Rust Bulletins are maintained on the CDL website (<http://www.ars.usda.gov/mwa/cdl>)

- Wheat stem rust was reported in 13 states.
- Wheat leaf rust was generally moderate to high in most states where it was reported.
- Wheat stripe rust was widespread nationwide, and some states experienced early infection and high disease pressure.
- Severe oat stem rust was observed in Texas and Louisiana.
- Oat crown rust was reported in 12 states and high in LA, CA, MN, and WI.
- Stem rust was observed on different barley varieties in Texas and Minnesota.
- Barley leaf rust was reported in Minnesota and New York.
- Severe barley stripe rust was observed in Washington.
- Rye stem rust was found in Texas and Indiana.
- Rye leaf rust was reported in Ohio, Indiana, Kansas, and Minnesota.
- *Thank you to all our cooperators for rust reports and collections!*

For original, detailed reports from our cooperators and CDL staff, please visit the [Cereal Rust Situation \(CRS\)](#) reports page on the [CDL website](#).

**Wheat stem rust.** Wheat stem rust was reported from 13 states across the U.S. in 2024 and generally at moderate incidence and severity with a few isolated areas of high severity. Across the Plains, wheat stem rust was first reported in Texas on April 1, confirmed in Oklahoma and Kansas in May, and then found in South Dakota in July. Wheat stem rust observations in the Midwest were made in Missouri, Illinois, Indiana, Ohio, Michigan, and Minnesota. In the Southeast, stem rust was reported in Louisiana, Georgia, and Florida. All wheat stem rust collections processed to date were identified as race QFCSC, the dominant race in the United States.

*Texas* – Wheat stem rust was observed on susceptible wheat lines and variety in the Texas A & M AgriLife wheat nursery at McGregor, McLennan County, on April 1. In the second week of April, wheat stem rust was readily observed on susceptible lines in the Castroville nursery, Medina County. During a cereal rust survey conducted by USDA-ARS Cereal Disease Laboratory staff in the third week of April, stem rust severity was up to 80% on susceptible checks and lines in the Northern Regional Performance, Southern Regional Performance, Regional Germplasm Observation, and Southern Soft nurseries in Castroville. Stem rust was found on triticale in Edinburg, Hidalgo County. Wheat stem rust was absent in other fields visited in Hidalgo County; in sentinel plots planted in Weslaco and watermelon production fields in Edinburg of Lower Rio Grande Valley.



*Oklahoma* – In mid-May, wheat stem rust was observed in winter wheat nurseries at Payne, Grady, and Kay counties. Disease severity ranged from 10 to 25% on varieties OK bullet and AP Roadrunner.

*Missouri* – In mid-May, low levels of wheat stem rust were detected on Agrimax 503 in a commercial field in Cole County, and on P25R65 in research plots in Boone County. In late May, a high incidence of stem rust was reported on Agrimax 503 in a grower's field in Pettis County. Disease severity was up to 25%. Wheat stem rust was observed in Audrain County.

*Kansas* – Stem rust foci were present in the variety-demonstration plots in the south central (Sedgwick and Reno counties) and north central (Dickinson and Shawnee counties) areas in mid-May. Stem rust was up to 50% severity but about 1% incidence in plots at Ashland in Riley County. The pathogen was detected earlier than usual in the state this year. The wheat crop ranged from heading to grain fill growth stages. No additional stem rust was detected during the June wheat field tours that covered the north-central and northwestern regions of the state.

*South Dakota* – The Cereal Disease Laboratory received three wheat stem rust collections from commercial fields in Brookings County in mid-July. Severity and incidence at sampling were 30% and 40%, respectively.

*Minnesota* – On July 10, wheat stem rust was rated 40S on susceptible Morocco in the variety trial at Oklee, Red Lake County. High levels of stem rust were observed on susceptible varieties in the wheat trials at the University of Minnesota Southern Research Centers in Waseca and Redwood counties. The disease was reported on varieties, including CP3099A and Morocco, at the research plots and fields in Benton, Sherburne, Washington, Marshall, and Roseau counties.

*Michigan* – In late June, stem rust at 5% severity and 50% incidence was observed in a commercial field in East Lansing, Ingham County. The crop was at the mealy ripe growth stage.

*Ohio* – Wheat stem rust at trace to 50% severity was seen in wheat trial plots at the Ohio State University Agricultural Research and Development Centers near Hoytville in northwestern Ohio and at Wooster in northcentral Ohio. A similar level of disease was observed along the edges of a grower's field in Huron County, but a high incidence of stem rust was present in a grower's field in Henry County. The wheat crop was at the mid-soft dough growth stage.

*Indiana* – Stem rust ranging from trace to 40% severity was found in wheat research plots at the Purdue University Agricultural Center for Research and Education site near West Lafayette. Moderate stem rust severity was observed along the edges of a grower's field scouted in Carroll County. The wheat crop ranged from soft to hard dough.

*Illinois* – Low to moderate stem rust was observed in wheat trials at the University of Illinois Champaign research fields. Wheat was at the late dough growth stage.

*Georgia* – Severe stem rust infection was observed on susceptible and commercial varieties used as border rows in research trials at the south GA location. An infected soft white wheat 'Breeding head' sample from Sumter County was submitted to the Cereal Disease Laboratory. During sampling, stem rust was 80% severity, and the wheat crop was at the milky ripe growth stage.

*Florida* – The Cereal Disease Laboratory received wheat stem rust on six cultivars from Gadsden County.

*Louisiana* – The Cereal Disease Laboratory received a wheat stem rust collection from East Baton Rouge County in late April.

**Wheat stem rust collection map.** Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>

Table 1. Races of wheat stem rust identified to date from the 2024 collections.

Race	State	Host	Cultivar	Disease
QFCSC	FL	Spring wheat	GAWN-217 Q	Wheat stem rust
QFCSC	FL	Spring wheat	GAWN-227 Q	Wheat stem rust
QFCSC	FL	Spring wheat	GAWN-234 Q	Wheat stem rust
QFCSC	FL	Spring wheat	GAWN-251 Q	Wheat stem rust
QFCSC	FL	Spring wheat	USS-321	Wheat stem rust
QFCSC	FL	Spring wheat	SPN-61 Q	Wheat stem rust
QFCSC	GA	Soft winter wheat	Breeding line	Wheat stem rust
QFCSC	IL	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	IL	<i>Hordeum jubatum</i>	Not Applicable	Wheat stem rust
QFCSC	IN	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	IN	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	KS	Hard red winter wheat	LCS Atomic Ax	Wheat stem rust
QFCSC	KS	Hard red winter wheat	LCS Atomic Ax	Wheat stem rust
QFCSC	KS	Hard red winter wheat	T158	Wheat stem rust
QFCSC	KS	Winter wheat	Unknown	Wheat stem rust
QFCSC	KS	<i>Triticum monoccum</i>	u7494.A4-C.10	Wheat stem rust
QFCSC	KS	<i>Triticum monoccum</i>	u7494.A4-C.10	Wheat stem rust
QFCSC	LA	Winter wheat	Experimental	Wheat stem rust
QFCSC	MN	Wheat	Unknown	Wheat stem rust
QFCSC	MN	Spring wheat	Morocco	Wheat stem rust
QFCSC	MN	Spring barley	Unknown	Wheat stem rust
QFCSC	MN	Spring barley	Unknown	Wheat stem rust
QFCSC	MN	Spring barley	Unknown	Wheat stem rust
QFCSC	MN	Spring wheat	CP3099A	Wheat stem rust
QFCSC	MN	Spring wheat	CP3099A	Wheat stem rust
QFCSC	MN	Spring wheat	CP3099A	Wheat stem rust
QFCSC	MN	Spring wheat	CP3099A	Wheat stem rust
QFCSC	MN	Spring wheat	CP3099A	Wheat stem rust
QFCSC	MN	Spring wheat	CP3099A	Wheat stem rust
QFCSC	MN	Spring wheat	Morocco	Wheat stem rust
QFCSC	MO	Winter wheat	Unknown	Wheat stem rust
QFCSC	MO	Soft red winter wheat	Agrimax 503	Wheat stem rust
QFCSC	MO	Soft red winter wheat	Agrimax 503	Wheat stem rust
QFCSC	OH	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	OH	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	OH	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	OH	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	OH	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	OH	Soft winter wheat	Unknown	Wheat stem rust
QFCSC	OK	Winter wheat	AP Roadrunner	Wheat stem rust
QFCSC	OK	Winter wheat	AP Roadrunner	Wheat stem rust
QFCSC	SD	Spring wheat	Unknown	Wheat stem rust
QFCSC	TX	Winter wheat	Unknown	Wheat stem rust

QFCSC	TX	Hard red winter wheat	TAM-401-CV	Wheat stem rust
QFCSC	TX	Hard red winter wheat	Unknown	Wheat stem rust
QFCSC	TX	Hard red winter wheat	TAM-401	Wheat stem rust
QFCSC	TX	Hard red winter wheat	Unknown	Wheat stem rust
QFCSC	TX	Triticale	Unknown	Wheat stem rust
QFCSC	TX	Triticale	Unknown	Wheat stem rust
QFCSC	TX	Triticale	Unknown	Wheat stem rust
QFCSC	TX	Triticale	Unknown	Wheat stem rust
QFCSC	TX	Triticale	Unknown	Wheat stem rust
QFCSC	TX	Spring wheat	Line E	Wheat stem rust
QFCSC	TX	Winter wheat	AAC wildfire	Wheat stem rust
QFCSC	TX	Spring wheat	LMPGG	Wheat stem rust
QFCSC	TX	Hard red winter wheat	Kharkof	Wheat stem rust
QFCSC	TX	Spring barley	Morex	Wheat stem rust
QFCSC	TX	Spring barley	Morex	Wheat stem rust
QFCSC	TX	Spring barley	Hiproly	Wheat stem rust



Wheat stem rust on a breeding line in Stillwater, OK on May 10, 2024  
Photo by Brian Olson



Wheat leaf rust on cultivar Whistler in Stillwater, OK May 11, 2024  
Photo by Rajat Sharma

**Wheat leaf rust.** Wheat leaf rust was generally moderate to high in most of the 20 states where it was reported. The disease spans from south to north Plains and was severe in Texas and North Dakota. High leaf rust pressure was seen across eastern Virginia, elsewhere in the South, wheat leaf rust was low to moderate. In the Midwest, leaf rust disease levels were higher than in the last three years.

*Texas* – Wheat leaf rust was observed at McGregor Nursey on February 23 and was the predominant rust on the field. By March 7, the disease had progressed; on April 6, leaf rust had increased to 80% severity on flag leaves. Leaf rust and stripe rust were progressing on wheat lines in the Texas A & M AgriLife wheat nursery at Castroville, when visited on March 8. About 5 – 10% of the wheat lines were rated, and 80S was recorded on both diseases. The wheat crop was at the stem elongation growth stage. During a follow-up visit on March 29, leaf rust and stripe rust at the Castroville nursery have increased significantly in severity and incidence across the field. Severe wheat leaf rust was reported in Burleson and Hidalgo counties.

*Oklahoma* – Leaf rust was first observed in the last week of April in different locations including Stillwater (Payne County), Chickasha (Grady County), Lahoma (Garfield County), and Kingfisher (Kingfisher County). In mid-May, high leaf rust pressure was observed on susceptible cultivars in Stillwater and Lahoma fields. The wheat crop was at the ripening growth stage.

*Missouri* – Wheat leaf rust was first observed in mid-May. Leaf rust samples from Boone, Cass, and Howard counties were submitted to the Cereal Disease Laboratory. Disease incidence was moderate, but severity was low during sample collections in late May and early June.

*Kansas* – Wheat leaf rust was found in several counties but advanced in the south-central counties including Sedgwick, Harvey, Sumner, McPherson, and Barber. Disease was up to 40% severity in susceptible varieties. Leaf rust appeared late in the season and is unlikely to cause significant yield losses.

*Nebraska* – Low levels of wheat leaf rust were reported in Lancaster, Webster, Saunders, and Deuel counties. The disease arrived late in the season and was not expected to impact yield.

*South Dakota* – Moderate wheat leaf rust was reported in commercial fields in Brookings County. The wheat crop was at the milky ripe growth stage.

*North Dakota* – During a cereal rust survey in the third week of July, wheat leaf rust ranged from 10 to 80% severity at the North Dakota State University variety testing in Casselton (Cass County) and Thompson (Grand Forks County). Collections from different varieties were submitted to the Cereal Disease Laboratory.

*Minnesota* – On June 10, wheat leaf rust was found on a flag leaf in the experimental plot at the University of Minnesota Northwest Research Centers Crookston, Polk County. On June 26, during a cereal rust survey at the University of Minnesota Rosemount Research Center low to moderate leaf rust was observed in winter wheat variety plots. The crop was at the soft dough growth stage. Spring wheat was free of rust pustules. At the Saint Paul winter wheat research plots, leaf rust was present at low to moderate severity only on the border plants. Leaf rust was greater than 50% severity on susceptible cultivars in wheat trial plots at the UMN Southern Research Centers in Waseca and Redwood counties. On the contrary, leaf rust was rated 10S on susceptible Morocco in the variety trial at Oklee. In late July, low to moderate leaf rust was observed on different varieties at the Perley research plots in Norman County. There was no rust in the Fergus Falls plots. The disease was also reported in Washington and Roseau counties.

*Wisconsin* – High incidence and moderate severity leaf rust were observed on winter wheat planted as the border in the spring wheat experimental plots at Sturgeon Bay, Door County.

*Michigan* – Moderate severity and a high incidence of leaf rust were reported in a commercial field in East Lansing, Ingham County. The crop stage was at the mealy ripe growth stage. A sample was received at the Cereal Disease Laboratory for race identification.

*Ohio* – A wide range of leaf rust severity was observed in the research plots at the Ohio State University Agricultural Research and Development Centers near Hoytville and at Wooster. Disease severity ranged from 5S to 70S on



susceptible varieties. Wheat leaf rust collections from the six commercial fields visited in Allen, Henry, and Seneca counties were submitted to the Cereal Disease Laboratory. The disease was present across one of the fields, while leaf rust was only found on the unsprayed edges of the other five fields.

*Indiana* – Low to moderate levels of wheat leaf rust were present at the Purdue University Agricultural Center for Research and Education site near West Lafayette. A similar level of rust was observed in a grower's field surveyed in Carroll County.

*Illinois* – Up to 40% severity of natural leaf rust was found on susceptible wheat in trials at the University of Illinois Champaign research fields.

*Kentucky* – Leaf rust at moderate severity and high incidence was observed in the wheat nursesey at Princeton, Caldwell County. Low levels of wheat leaf rust were detected in a nursery at Simpson County.

*Virginia* – Wheat leaf rust was severe across eastern Virginia. It was probably due to the early arrival of the disease, coupled with growers not applying fungicides because of dry weather during the wheat flowering period. Low levels of leaf rust were reported in western VA in early May. Leaf rust collections from Richmond, Nottoway, and Accomack counties were received at the Cereal Disease Laboratory on May 9.

*Georgia* – Wheat leaf rust disease was sporadic and mild throughout the state. The Cereal Disease Laboratory received two leaf rust collections from Pike and Sumter counties. The disease was at moderate severity during sampling.

*Alabama* – On April 9, leaf rust was observed in the lower canopy of four varieties in the wheat variety test plots, in Escambia County. Nine days later, the disease had developed to the upper canopy of nine varieties. Leaf rust ranged from 1 to 50% incidence and 1 to 30% severity. In early May, trace to moderate levels of leaf rust were reported on different varieties in the Alabama Small Grain Variety Trials in Elmore, De Kalb, and Autauga counties.

*Florida* – The Cereal Disease Laboratory received 18 wheat leaf rust collections from Marion and Gadsden counties in April.

*Louisiana* – The Cereal Disease Laboratory received two wheat leaf rust collections from East Baton Rouge County in late April.

*California* – In mid-April, leaf rust at low severity but moderate incidence was observed on multiple varieties in Ventura County.

**Wheat leaf rust collection map.** Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>

#### **Wheat cultivar *Lr* gene postulation database.**

Please visit: [Leaf rust resistance gene postulation in current U.S. wheat cultivars](#)

**Wheat stripe rust.** The recently concluded growing season was a good year with favorable conditions for *Puccinia striiformis* infection. Wheat stripe rust was widespread across the country, and earlier than normal infection occurred in some states. Georgia and Michigan experienced an unusual stripe rust epidemic. Louisiana reported stripe rust infection on a resistant cultivar, while Kansas saw an increase in isolates virulent on cultivars formerly considered resistant to *P. striiformis*. Wheat stripe rust was reported from 31 states across the country in 2024: Louisiana, Texas, Washington, Arizona, Oregon, Georgia, Mississippi, Alabama, North Carolina, Oklahoma, Kansas, California, Virginia, Nebraska, Indiana, Illinois, Kentucky, Tennessee, Arkansas, Maryland, Idaho, Michigan, New York, Delaware, South Dakota, North Dakota, Utah, Missouri, Wisconsin, Montana, and Minnesota.

*Texas* – Wheat stripe rust was first detected in the Texas A & M AgriLife wheat nursery at Chillicothe, Hardeman County, on January 31. The disease was active and progressed on varieties Siouxland and Lockett during the third week of February. Wheat growth stages ranged from Feekes 4 to 6 at that time. By March 8, stripe rust had spread uniformly across the nursery. On February 23, stripe rust was observed on a single leaf in the wheat nursery at McGregor. By March 7, stripe rust had progressed significantly and became the predominant rust in the nursery. Disease ratings were up to 60% severity on susceptible varieties. Low levels of stripe rust were observed at the College Station nursery. By April 1, stripe rust had developed significantly across all the nurseries.

*Louisiana* – Low levels of stripe rust were found in a block of Delta Grow 1800 at the Louisiana State University wheat nursery in Baton Rouge in January. Delta Grow 1800 was previously known to be resistant to *P. striiformis* as it was confirmed to carry *Yr17* and *Yr4BL* in 2018 and 2019 by the Eastern Wheat Genotyping Lab. By March, wheat stripe rust had spread throughout the nursery and was severe on susceptible varieties. The disease was reported in Alexandria nurseries in Rapides County, and on growers' fields in Avoyelles, St. Landry, Tensas, and Franklin counties.

*Oklahoma* – High stripe rust incidence and severity were observed at the Oklahoma State University Research Station in Tipton, Tillman County, on March 31. Many 2024 Southern Regional Performance Nursery breeding lines displayed severe stripe rust symptoms before the flag leaf growth stage. According to Dr. Brett Carver, such a high stripe rust and early infection was last seen in the early 2000s. This susceptibility was attributed to sparse seedling resistance sources. However, breeding lines carrying all-stage resistance genes such as *Y5* and *Yr15* were rust-free. Stripe rust was also observed in the Oklahoma State University Research Stations in Stillwater. By mid-April, the disease was reported in 16 counties.

*Missouri* – Wheat stripe rust was found in commercial fields in Moniteau and Audrain counties in mid-May. There were no additional updates on stripe rust from MO.

*Kansas* – Stripe rust was first detected in Kansas on April 9 at trace levels in Sumner County. By May 10, the disease was confirmed in 41 counties. Many of these observations were at low levels, but stripe rust has moved to the flag leaf in the eastern part of the state. In mid-June, stripe rust was reported in most counties with wheat acreage and severe in central and western Kansas. Wheat variety reactions to stripe rust were consistent with those in the previous years. Isolates virulent on SY Monument, LCS Chrome, and Bob Dole (formerly considered resistant to *P. striiformis*) have increased in Kansas.

*Nebraska* – Wheat fields in the southeast, south-central, southwest, and Panhandle of Nebraska were surveyed in mid-May. Stripe rust was found in many southern counties of NE but at low levels. The disease was not detected in any of the counties visited in the Panhandle. The wheat growth stage ranges from flag leaf emerging to flowering. A follow-up survey was conducted during the week of June 10. Stripe rust was found in all the wheat-growing regions of Nebraska and was the dominant disease in these regions. The rust had progressed to a high severity level, greater than 70S on flag leaves, and was widespread in fields, especially those planted with susceptible varieties. In some fields, stripe rust had advanced from the uredinial to the telial stage. Stripe rust was the predominant disease in wheat fields and was reported in 29 counties.

*South Dakota* – Wheat stripe rust was reported in Hughes, Tripp, Brookings, Codington, Bennett, Sully, Walworth, Meade, and Bon Homme counties during the 2024 growing season.

*North Dakota* – Stripe rust was observed in Cass, Slope, and Hettinger counties in early June. Active stripe rust pustules were seen at the North Dakota State University variety testing in Casselton in late July.

*Montana* – Stripe rust was reported in wheat trials at Sidney, Richland County, on June 12. The disease ranged from 5 to 10 % severity on flag leaves. Stripe rust was also detected in a commercial field in Chouteau County. The wheat crop in the region has completed the heading growth stage.

*Idaho* – Stripe rust was first seen on winter wheat LCS Jet in the production field before frosts and freezing conditions in mid-June. Low infection stripe rust was observed on hard red spring wheat WB9707 by the end of June when spring wheat was heading. Two weeks later, significant symptoms developed on hard white spring WB7313 and WB7696, and Holmes (hard red spring wheat) in production fields. By mid-July, stripe rust was reported on many varieties in the University of Idaho variety trials.

*Oregon* – On April 12, stripe rust was observed in the winter wheat and triticale plots at the Oregon State University Hermiston Agricultural Research and Extension Center, Umatilla County.

*Washington* – Low levels of stripe rust on the low leaves were found at the Walla Walla winter wheat nurseries in Walla Walla County on April 2. Disease incidence and severity increased rapidly, and by April 13, actively sporulating pustules were on the upper canopy, and several stripe rust hotspots were found in the nurseries. In the first week of April, one spot of stripe rust was found in the susceptible spreader rows at the Lind Dryland Research Station in Adams County. Wheat stripe rust was higher than usual in the second week of April in the winter nurseries at Mount Vernon, Skagit County. On April 11, the disease had reached 100% incidence and 70% severity on susceptible varieties. Stripe rust was found in the experimental plots and breeders' nurseries at Central Ferry, Garfield County. Growers' fields scouted in the Benton and Walla Walla counties were free of stripe rust. On April 9, trace stripe rust was observed in the spreader rows at the experimental plots on the Palouse Conservation Field Station farm and Spillman Farm in Whitman County. It was the earliest stripe rust observation in the Palouse region since 2011. By the end of April, stripe rust had spread at this location and most susceptible checks had active rust pustules but were restricted to the lower canopy. The wheat crop was at Feekes 6 growth stage. On May 30, stripe rust pressure had increased significantly to the flag leaves of winter wheat in the germplasm screening and breeding nurseries. By June 10, disease severity was up to 90S on susceptible checks in the Palouse region. Commercial wheat fields in Whitman, Adams, and Franklin counties were scouted on April 25, and low levels of stripe rust were found in three fields in Franklin County. One of the fields had a large hot spot of infection about 30 feet in diameter. This field had been sprayed with fungicides. The hot spot indicated that plants were infected before winter. Infections in the fields were mostly in the middle canopies, suggesting secondary spring infections. The wheat crop in these fields ranged from Feekes 8 to 9 growth stages. In June, stripe rust was reported to reemerge in winter wheat fields previously sprayed with fungicides in central Washington due to low temperatures and cool weather conditions favoring *P. striiformis* infection and development. By mid-July, stripe rust had reached 100% severity on susceptible winter wheat varieties in nurseries at all locations. The disease was up to 80% severity on spring wheat nurseries in Adams, Walla Walla, and Ferry counties, and up to 100% on susceptible spring wheat varieties in Skagit and Whitman counties. The winter wheat crop was at the mature growth stage and spring wheat has passed the flowering stage.

*Minnesota* – In the last week of May, low levels of stripe rust were detected in the winter wheat nursery fields in Saint Paul. Similar rust levels were observed in wheat trials at Swift and Polk counties in late June. However, high disease severity was reported in winter and spring wheat variety trials at the University of Minnesota Sand Plain Research Farm. On July 10, up to 70% severity of natural stripe rust infection was seen on susceptible varieties in the wheat trials at the UMN Southern Research Centers. Some of these varieties were also infected with leaf rust, stem rust, or both. Stripe rust was rated up to 60% on susceptible Morocco in the variety trial at Oklee.

*Wisconsin* – Wheat stripe rust was reported in Columbia, Dodge, and Fond de Lac counties in late May.

*Michigan* – The state experienced a severe stripe rust epidemic during the 2024 growing season. In May, stripe rust was found in 14 counties: Newaygo, Mecosta, Montcalm, Kent, Gratiot, Clinton, Ingham, Saginaw, Midland, Bay, Tuscola, Sanilac, Huron, Kalamazoo.



*Indiana* – Stripe rust was first reported in Tippecanoe County on May 10. There was no report on disease progression.

*Illinois* – Wheat stripe rust was reported in Cumberland County on April 22.

*Kentucky* – Wheat stripe rust was reported in Logan County in May

*Virginia* – Wheat stripe rust was observed across the state but at varying levels.

*Delaware* – Wheat stripe rust was observed in Sussex County in May.

*New York* – Wheat stripe rust was confirmed in Allegany, Genesee, Onondaga, Seneca, Tompkins, Livingston, Yates, and Wyoming counties. Disease incidence and severity varied across counties.

*Arkansas* – Wheat stripe rust was reported in Lee and Faulkner counties.

*Tennessee* – Wheat stripe rust was found in Gibson, Madison, and Fayette counties in the 3rd week of April.

*Alabama* – Stripe rust was first detected on five varieties in the wheat variety test in Escambia County on April 9. By April 18, the disease had actively progressed to 17 varieties. Stripe rust ranged from 10 to 80% incidence and 5 to 60% severity on susceptible varieties. Wheat growth stages ranged from flowering to soft dough.

*Georgia* – Early and high incidences of stripe rust were observed in many commercial wheat fields in southwest and central GA, especially in Bleckley, Burke, Bullock, Ben Hill Colquitt, Grady, Laurence, Macon, Mitchel, Tift, Treutlen, and Wayne counties. Some sporadic infections of stripe rust were observed in the Piedmont and north GA. The weather conditions in Georgia, during the growing season, were ideal for wheat stripe rust infection and development. Many growers applied fungicides to control the disease.

**Stripe rust observation map.** Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>



Wheat stripe rust uredinial and telial from a grower's field in Webster, NE on May 28, 2024  
Photo by Stephen Wegulo

**Oat stem rust.** Oat stem rust was reported in seven states, and race TGN was common in the collections processed to date. This race is virulent on *Pga* but avirulent on *Pg9* and *Pg13* and has been the dominant race in the last three years in the United States. Other races identified in 2024 include KBD and TQL.

*Texas* – Oat stem rust was observed on the lower to mid-canopy at the Castroville nursery on March 30. By April 4, the diseases had progressed to the flag leaves and were uniformly distributed in susceptible varieties. Oat stem rust at this location had reached 90 to 100% disease severity on April 24. The disease was reported in Hays and Travis counties. Oat stem rust was absent in the fields visited in Hidalgo County during the cereal rust survey conducted in the third week of April.

*Louisiana* – Severe oat stem rust was observed in the oat nursery at Baton Rouge.

*Florida* – Oat stem rust was reported in Florida.

*Kentucky* – In mid-June, oat stem rust was reported in Lexington, Fayette County.

*Illinois* – Trace to 25% severity and 10% incidence of stem rust were observed in oat trials at the University of Illinois Champaign research fields.

*Wisconsin* – Stem rust was reported on Rines cultivar in the oat nursery at the University of Wisconsin Experimental Station in Sturgeon Bay, Door County.

*California* – Low levels of oat stem rust were first observed on the variety Montezuma at the Agronomy Field HQ, UC Davis in the second week of May. Stem rust was reported in a spring oat field in Ventura County.

**Oat stem rust collection map.** Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>

**Table 2. Races of oat stem rust identified to date from the 2024 collections.**

Race	State	Host	Cultivar	Disease
KBD	CA	Spring oat	Montezuma	Oat stem rust
TGN	IL	Unknown oat type	Unknown	Oat stem rust
TGN	KY	Unknown oat type	Unknown	Oat stem rust
TGN	TX	Unknown oat type	Unknown	Oat stem rust
TGN	TX	Unknown oat type	Unknown	Oat stem rust
TGN	TX	Unknown oat type	Unknown	Oat stem rust
TGN	TX	Unknown oat type	Unknown	Oat stem rust
TGN	TX	Unknown oat type	Unknown	Oat stem rust
TGN	TX	Unknown oat type	Unknown	Oat stem rust
TGN	TX	Unknown oat type	Unknown	Oat stem rust
TGN	TX	Unknown oat type	Unknown	Oat stem rust
TGN+	TX	Unknown oat type	Unknown	Oat stem rust
TGN+	TX	Unknown oat type	Unknown	Oat stem rust
TQL+	TX	Unknown oat type	Unknown	Oat stem rust
TQL+	TX	Unknown oat type	Unknown	Oat stem rust
TGN	WI	Spring oat	Rines	Oat stem rust
TGN	WI	Spring oat	Unknown	Oat stem rust



Oat stem rust and oat crown rust from Baton Rouge, LA on April 2, 2024  
Photo by Stephen Harrison

### Oat crown rust.

*Texas* – Oat crown was observed on the lower canopy at the Castroville nursery on March 30. By April 4, the diseases had progressed to the flag leaves on susceptible varieties. Oat crown rust was reported in Hidalgo, Medina, Travis, Hill, and Fort Bend counties.

*Louisiana* – Severe crown rust was found in the oat nursery at Baton Rouge.

*Kansas* – Oat crown rust was detected in Riley County near Manhattan in the first week of June.

*South Dakota* – Oat crown rust was observed on Rainer cultivar in commercial fields and on different varieties in oat nurseries in Brookings, Codington, and Union counties.

*North Dakota* – Crown rust in the oat plots was low to moderate but severe on susceptible border checks at the Casselton research location.

*Minnesota* – Crown rust was first observed on Marvelous at the research plots in Saint Paul on June 7. Severe oat crown rust was found in oat research plots at the University of Minnesota Sand Plain Research Farm, UMN Rosemount Research Center, and UMN Southern Research Centers.

*Wisconsin* – In late July, oat crown rust was up to 60% severity in the oat nursery at the University of Wisconsin Experimental Station in Sturgeon Bay. Crown rust was reported in growers' fields in Oneida County.



*Illinois* – Trace to 20% severity and 10% incidence of crown rust were observed in oat trials at the University of Illinois Champaign research fields.

*Kentucky* – In mid-June, oat crown rust was reported in Lexington, Fayette County.

*Georgia* – Oat crown rust was reported in west-central and southern counties including Colquitt, Tift, Sumter, and Macon.

*Florida* – Crown rust collections from eight oat cultivars were received at the Cereal Disease Laboratory from Marion County.

*California* – Oat crown rust at 80S was observed on Montezuma at the Agronomy Field HQ, UC Davis in mid-April. Oat crown rust was found in Marin and Ventura counties in mid-June.

**Oat crown rust collection map.** Please visit: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>

### **Barley stem rust.**

*Texas* – Stem rust was observed on Morex and Hiproly varieties in sentinel barley plots at the Castroville nurseries in late April.

*Minnesota* – On August 1, stem rust was reported in the spring barley plots at the UMN Crookston Research Center. Disease severity ranged from 15 to 35%.

### **Barley leaf rust.**

*Minnesota* – Barley leaf rust was found in research plots at the UMN Rosemount Research Center and UMN Southern Research Center, Lamberton.

*New York* – In early June, trace levels of barley leaf rust were observed on Stander barley in research plots under irrigation in Ithaca.

**Barley stripe rust.** In mid-April, a low level of stripe rust was observed in the winter nurseries at Mount Vernon. On May 30, stripe rust was observed in the mid-canopy in the barley nurseries near Pullman. The barley crop was at the flowering growth stage. By mid-July, barley stripe rust had reached 80% severity in nurseries at Mount Vernon and Pullman locations in Washington.

### **Rye stem rust.**

*Texas* – Stem rust was observed on Prolific in the spring rye plots at the Castroville nurseries. Disease severity was up to 50%. Rye stem rust was observed on triticale used in windbreaks of watermelon fields in Edinburg.

*Indiana* – Rye stem rust was observed in a grower's field in Lafayette, Tippecanoe County.

### **Rye leaf rust.**

*Kansas* – In early May, rye leaf rust was observed on winter rye in Kingman County.

*Indiana* – A moderate level of rye leaf rust was observed at the Purdue University Agricultural Research field and in a grower's field in Carroll County.

*Ohio* – Leaf rust was observed in a rye variety trial in the Ohio State University Agricultural Research field in Wooster, Wayne County.

*Minnesota* – Leaf rust was reported in winter rye variety trials at the UMN Sand Plain Research Farm, Becker, the UMN Research station, Crookston, and the UMN St. Paul research plots.

**Alternate host.** As usual, widespread crown rust aecia on buckthorn (*Rhamnus cathartica*) was observed in New York and Minnesota in May. In early June, light aecial infections of common barberry (*Berberis vulgaris*) were observed in southeast MN and northeast WI.

**Accessory host.** Stem rust on *Hordeum jubatum* (Foxtail barley) was observed in the University of Illinois Champaign research field. High leaf rust and stem rust incidences were observed in a tall fescue breeding nursery at the University of Georgia Tifton research field. Stem rust was observed on *Elymus repens* (quackgrass) in Mansfield, Connecticut.



**Thank you!**

This is the final Cereal Rust Bulletin for 2024. We, members of the Cereal Disease Laboratory, would like to thank our collaborators for timely observations, disease updates, and sample collections for race typing. The annual Cereal Rust Survey and Cereal Rust Bulletin wouldn't have been possible without our collaborators' assistance, and we look forward to continued collaboration. The names of those who worked with us and their corresponding states of observations and collections are listed below. We apologize if you are a submitter, and by oversight, we did not include your name.

Sincerely,  
Oluseyi Fajolu, Ph.D.  
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