



# CEREAL RUST BULLETIN

Issued by:

**Cereal Disease Laboratory**

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<http://www.ars.usda.gov/Main/docs.htm?docid=9970>

Or, send an email to: [oluseyi.fajolu@usda.gov](mailto:oluseyi.fajolu@usda.gov)

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 found in Texas and Louisiana.
- Wheat leaf rust was reported in Texas, Louisiana, Georgia, Mississippi, and Alabama.
- Wheat stripe rust was observed in six states and generally at low levels.
- Oat stem rust was found in Texas, Louisiana, Mississippi, and Florida.
- Oat crown rust is widespread in most states where it is present.
- Barley leaf rust was reported in Texas.
- Barley stripe rust is present in Washington and Arizona.
- *2022 wheat leaf rust race survey results are available.*
- *Request for cereal rust observations and samples in 2023*

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

**Weather conditions.** According to the “USDA Weekly Weather and Crop Bulletin” and the “U.S. Agricultural Weather Highlights” released on May 9, spotty showers on the Plains in early May resulted in a daily record of 1.47 inches on May 4 in North Platte, NE. Showery conditions increased from Nebraska northward, slowed down fieldwork but benefited winter wheat, spring-sown crops, and pastures. Hot weather prevails in the southern half of the Plains. Topeka, KS, recorded a daily high of 98° F on May 6. The South experienced warm, humid, rainy weather that limited fieldwork but supported the emergence and development of spring-sown crops. Cool weather covers most parts of California and the Northwest.

**Crop conditions.** According to the May 9 report, 38% of winter wheat has headed nationwide, six and three percentage points above last year and the five-year average, respectively. Twenty-nine percent of the 2023 winter wheat crop was rated in good to excellent condition, the same as last year. Twenty-four percent of the nation’s spring wheat was seeded, two percentage points behind last year and 14 points behind the five-year average. By May 7, oat producers had seeded 60% of the 2023 acreage, six percentage points ahead of the previous year but four points behind the five-year average. Forty-two percent of the oat acreage had emerged, seven percentage points above last year but one point below average. As of May 7, 38% of the nation’s barley crop was planted, eight and twelve percentage points below last year and the five-year average, respectively. Eleven percent of the nation’s barley crop had emerged, nine percentage points behind the previous year and eight points behind average.



**Wheat stem rust.** Wheat stem rust has been reported in Texas and Louisiana.

*Louisiana* – Wheat stem rust was very severe on susceptible varieties at the Louisiana State University nursery in Baton Rouge when visited on April 28. On May 4, low levels of stem rust were found in the experimental plots in Winnsboro. Previously, the disease was reported to be spreading in the Baton Rouge nursery ([see Cereal Rust Bulletin #1](#)).

**Wheat leaf rust.** Wheat leaf rust was reported in Texas, Louisiana, Georgia, Mississippi, and Alabama. Disease severity and incidence varied within and across states.

*Texas* – Wheat leaf rust was found in only two of the six winter wheat fields scouted in Wharton County on April 27. The disease was moderate to high in the unsprayed portion of the growers' fields. The other four had none to a few leaf rust pustules. The wheat crop was at mealy ripe to kernel hard growth stages. Leaf rust was severe on Triticale planted as windbreaks in a vegetable field in Victoria County. The previous report indicated high leaf rust incidence and severity in Medina, Hidalgo, and McLennan counties ([see Cereal Rust Bulletin #1](#)).

*Louisiana* – Leaf rust was previously reported at a moderate level in the Baton Rouge nursery and low in the Winnsboro nursery in early April. The disease had progressed to very severe on susceptible winter wheat and a few Triticale lines at both locations. In contrast, wheat leaf rust severity was low to moderate on a few susceptible varieties at the LSU research nurseries in Bossier City, Alexandria, and Crowley. The wheat crop was at mealy ripe growth stage.

*Mississippi* – Wheat leaf rust was present on a few susceptible lines at the Mississippi State University Experiment Station in Beaumont, Perry County. The disease incidence was high, but the severity ranged from moderate to high. Low levels of wheat leaf rust were found in Raymond, Hinds County, on April 28. The wheat crop was at the milky ripe growth stage.

*Alabama* – Wheat leaf rust was observed at moderate severity on a susceptible line at the Auburn University experimental plots in Fairhope, Baldwin County. The wheat line had begun flowering at that time.

**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](#)

**2022 wheat leaf rust survey summary and results are available.**

Please visit: [Wheat leaf rust race survey results](#)

**Wheat stripe rust.** Wheat stripe rust was found in Texas, Oklahoma, Kansas, Louisiana, Mississippi, and Washington. Stripe rust was high in western Washington but absent in eastern WA.

*Oklahoma* – Wheat tours in the last week of April covered southwestern Oklahoma (Tipton, Altus), south-central Oklahoma (Walters), and central Oklahoma (Apache and Chickasha). Wheat stripe rust had increased from approximately 5%, previously reported, to 15% severity on variety Pete at the OSU Research Station in Chickasha. There was no report of stripe rust from other cities visited. Low levels of stripe rust were observed in Lahoma (north-central OK). Wheat growth stages ranged from heading to flowering.

*Kansas* – On May 9, trace levels of wheat stripe rust were reported in irrigated wheat fields in Edwards County in the south-central region of KS. Wheat in this area ranges between full flag leaf emergence and boot stages of development. This is the first report of stripe rust in Kansas. The prolonged drought conditions in the state had adversely affected the wheat crop and suppressed fungal disease development, including stripe rust and leaf rust.

*Louisiana* – Wheat stripe rust was first seen in Louisiana on May 4 in the Winnsboro nursery. The disease severity and incidence were very low.

*Mississippi* – The first stripe rust in the state was found in a commercial wheat field in Tunica County in the last week of April.

*Washington* – Wheat stripe rust severity and incidence were high as usual in the winter nurseries at Mount Vernon, western Washington. The disease was up to 80% severity on susceptible varieties by April 26. The wheat growth stage was at Feekes 6. Winter wheat fields in Benton, Walla Walla, Columbia, and Garfield counties in eastern WA, were surveyed on April 28. There was no rust in the commercial and experimental fields scouted. Besides 2022, stripe rust usually appears in early March in the rust monitoring nursery at Walla Walla County (see [Cereal Rust Bulletin 2022](#)). Natural *Puccinia striiformis* infection is late for the second consecutive year at this location. Wheat growth stages ranged from Feekes 4 to 6.

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

**Please send wheat and barley stripe rust collections as soon as possible after collection to: Dr. Xianming Chen, USDA-ARS (Washington State University; see details in attached rust collection guide).**

**Oat stem rust.** Oat stem rust samples collected from Texas, Louisiana, and Florida was identified as race TGN. This race is virulent on Pga but avirulent on Pg9 and Pg13 and has been the dominant race in the last two years in the United States.

*Louisiana* – Trace levels of oat stem rust were present on susceptible varieties in the LSU experimental plots in Bossier City and Alexandria. In contrast, severe stem rust was observed in the Baton Rouge nursery on April 28. The oat crop was at the milky ripe growth stage.

*Mississippi* – A few stem rust pustules were found on border rows of a commercial field in Adams County on April 28.

*Florida* – Stem rust was observed on multiple oat lines at different nurseries in Marion County on April 20.

**Oat crown rust.** So far this year, oat crown rust was reported in six states: Texas, Louisiana, Mississippi, Alabama, Georgia, and Florida.

*Louisiana* – During the April 28 survey, oat crown rust was up to 80% severity on a few susceptible varieties at the Bossier City nursery and up to 30S at the Alexandria research plots. Crown rust was widespread and severe on many oat lines in the Baton Rouge nursery.

*Mississippi* – Oat crown rust at 100% incidence and 25% severity was observed at the research plots in Beaumont, Perry County. Trace levels of crown rust were found in the unsprayed portion of a commercial field in Adams County.

*Alabama* – Crown rust was widespread and up to 80% severity in the experimental plots in Fairhope.

*Florida* – Oat crown rust was observed on volunteer oat lines growing in a wheat field in Jay, Santa Rose County. Previously, oat crown rust was reported to be severe in Alachua County (see Cereal Rust Bulletin #1).

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

**Barley leaf rust.** Leaf rust at 80% severity and incidence was present on a spring barley variety at the Castroville nursery in mid-April.

**Barley stripe rust.** On April 26, barley stripe rust had reached 40% severity on susceptible varieties in the winter nurseries at Mount Vernon, Washington. The severity level was usual for this location. The disease was also reported in Arizona.

## Request for cereal rust observations and samples

Cereal Disease Laboratory, USDA-ARS, St. Paul, MN

*(Please save this for future reference)*

### Cooperators' assistance is critical to our work

We depend on the assistance of our cooperators for cereal rust observations and samples (as well as other significant small grain disease observations). If you are able, please collect rust samples and send them to us. We sincerely thank all those who have assisted us in the past and hope the assistance continues this year and in the future.

### Observations

If you have information on the cereal rust situation in your area that you would be willing to share with the group, please email your observations to:

[CEREAL-RUST-SURVEY@LISTS.UMN.EDU](mailto:CEREAL-RUST-SURVEY@LISTS.UMN.EDU)

Or, to: Dr. Oluseyi Fajolu ([oluseyi.fajolu@usda.gov](mailto:oluseyi.fajolu@usda.gov))

*We would like to include your name and email address so others can contact you. If, however, you prefer not having your name or email address appear with the information, please let us know when submitting your observations.*

### Information of most importance

We welcome any information you can provide but are particularly interested in the following:

- Location (state, county, city)
- Rust (leaf rust, stem rust, stripe rust, crown rust)
- Host (wheat, barley, oat, grasses, etc.)
- Cultivar or line name if known
- Grain class if known
- Severity and prevalence
- Growth stage: when the rust likely arrived, when infection was first noted, and current growth stage
- Where rust is found on the plants, e.g., lower leaves, flag leaf, etc.

### Guidelines for making cereal rust uredinial collections\*\*

Reports on the distribution of races of cereal rust fungi are an important part of our annual cereal rust surveys. We routinely collect and test isolates of stem rust (wheat, oat, and barley), wheat leaf rust, oat crown rust and barley leaf rust. We are most interested in small grain collections (wheat, barley, oat and rye), but are also interested in stem rust, leaf rust, and stripe rust collections from grasses, e.g.:

- Jointed goatgrass (*Aegilops cylindrica*)
- Ryegrasses (*Elymus* spp.)
- Wheatgrasses (*Elytrigia* spp.)
- Wild barleys (*Hordeum* spp.)
- Wild oat (*Avena fatua*)
- Common grasses, e.g., *Agropyron*, *Agrostis*, *Festuca*, *Leymus*, *Lolium*, *Phleum*, and *Psathyrostachys* spp.

*Images and descriptions of the above grass species can be found on the USDA Natural Resources Conservation Service's [PLANTS Database](#) website*

1. Rust pustules should be fresh and fully developed, except when this may not be possible, i.e., the first uredinial collections found early in the season.
2. When rusted small grain or grass plants are encountered, please cut 5 to 10 sections of plant stem (if possible, avoid including plant nodes as they do not readily air dry) or leaf, 4 inches long with large and small pustules and place in a regular paper mail envelope (**Please Do Not use plastic or waterproof envelopes**). Do not staple or tape the envelope; instead fold the flap shut.
3. Important information should be recorded for each collection, e.g., date, county, state, cultivar or line, crop stage, whether collection is from a nursery or commercial field, etc. Please use our data collection form ([standard pdf](#) or [fillable pdf](#)) if possible. If the grass genus or species is unknown to the collector, please send a head in a separate bag or envelope, indicating which collection it is associated with to aid in identification.
4. Please avoid exposing samples to direct sunlight or unusual heat of any kind, e.g. car dashboard, outside mailboxes, etc. Samples should be kept at room temperature for 2–3 days to allow the plant material to dry. Afterwards the samples should be placed in a cooler or refrigerator before they are mailed. Please do not keep samples in a freezer. The samples should be sent to us as soon as possible after the samples have dried.
5. Please promptly mail the envelope(s) with the appropriate collection form inside each envelope to this address:

Cereal Disease Laboratory, USDA-ARS  
1551 Lindig Street  
University of Minnesota St. Paul,  
Minnesota 55108

**\*\* Stripe rust collections should be sent by FedEx or UPS to:**

Dr. Xianming Chen USDA-ARS  
361 Johnson Hall Washington State University Pullman, WA 99164-6430

By regular mail: Dr. Xianming Chen 361 Johnson Hall  
P.O. Box 646430 Washington State University Pullman, WA 99164-6430

*Note:* Stripe rust collections are vulnerable to heat and do not survive long at warm temperatures; therefore, if shipment of collections for race identification is delayed, their viability will be greatly reduced. An overnight courier service is preferred for sending stripe rust collections.

If you have any questions regarding stripe rust samples, contact Dr. Xianming Chen, Phone 509-335-8086; e-mail: [xianming@wsu.edu](mailto:xianming@wsu.edu) or [xianming.chen@ars.usda.gov](mailto:xianming.chen@ars.usda.gov)

**Thank you in advance for your assistance!**

### **Current cereal rust situation**

For the latest cereal rust situation reports, please subscribe to the cereal rust survey listserv list\*.

Instructions can be found at:

<http://www.lsoft.com/scripts/wl.exe?SL1=CEREAL-RUST-SURVEY&H=LISTS.UMN.EDU>

Or, if you prefer, simply send a subscription request to Dr. Oluseyi Fajolu ([oluseyi.fajolu@usda.gov](mailto:oluseyi.fajolu@usda.gov)).

All messages sent to the list are archived on the CDL website: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>

\*The sole purpose of the Cereal Rust Survey listserv list is to provide a format for cereal researchers and extension personnel to share observations of cereal rusts and other cereal diseases. We make no warranty about any information shared on this listserv or its utility or applicability. Mention of any product, brand, or trademark does not imply endorsement or recommendation of that product, brand, or trademark by USDA-ARS, or any of the participants on this listserv. By enrolling on this listserv list, participants understand and agree to abide by these conditions.