



CEREAL RUST BULLETIN

Issued by:

Cereal Disease Laboratory

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For the latest cereal rust news from the field, subscribe to the cereal-rust-survey listserv. To subscribe, please visit:

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

Or, send an email to: 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 reported in Texas, Louisiana, and Florida.
- Wheat leaf rust was found in Alabama, Florida, and Virginia.
- Wheat stripe rust has been reported in eighteen states.
- Severe oat stem rust was observed in Texas.
- Oat crown rust was found in Florida and California.
- Barley and rye stem rust were present in the Castroville nurseries, Texas.
- *2023 wheat leaf rust race survey results are available.*
- *Request for cereal rust observations and samples in 2024.*

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 7, the West experienced early May chill with a low daily record of 17° F in Klamath Falls, OR, and 21° F in Pocatello, ID. The chilly air overspread the High Plains, where Chadron, NE, posted a daily record low of 22° F. The Northwest had significant rainfall. Weekly temperatures averaged at least 5° F below normal across portions of the northern High Plains and the Northwest. Eastern Texas was struck with flooding rainfall with a weekly total of 8.14 inches in College Station and 21.98 inches in Huntsville. In contrast, warm weather prevailed across the lower Great Lakes region into the mid-Atlantic with daily-record highs reaching 92°F in Baltimore, MD, 90° F in Philadelphia, PA, and 84°F in Cleveland, OH.

Crop conditions. According to the May 7 report, 43% of winter wheat has headed nationwide, nine and eleven percentage points above last year and the five-year average, respectively. Fifty percent of the 2024 winter wheat crop was rated in good to excellent condition, 21% above last year. Forty-seven percent of the nation’s spring wheat was seeded, twenty-six percentage points ahead of the previous year and sixteen points ahead of the five-year average. By May 5, twelve percent of the nation’s spring wheat crop had emerged, eight percentage points above the previous year and three points above average. By May 5, oat producers had seeded 70% of the 2024 acreage, thirteen percentage points ahead of last year and nine points ahead of the five-year average. Forty-nine percent of the oat acreage had emerged, ten percentage points above last year and seven points above average. Forty-seven percent of the nation’s barley crop was planted by May 5, fourteen percentage points ahead of the previous year and three points ahead of the five-year average. Fourteen percent of the nation’s barley crop had emerged by May 5, five percentage points ahead of the previous year but one point behind average.



Wheat stem rust.

Texas – During a cereal rust survey conducted by USDA-ARS Cereal Disease Laboratory staff in the third week of April, wheat stem rust was up to 80S on susceptible checks and lines in the Northern Regional Performance, Southern Regional Performance, Regional Germplasm Observation, and Southern Soft nurseries in Castroville. Wheat stem rust samples collected earlier in the month from this location were identified as race QFCSC. Wheat stem rust was absent in the fields visited in Hidalgo County; in sentinel plots planted in Weslaco, in the watermelon production fields in Edinburg, and in Lower Rio Grande Valley.

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

Florida – Wheat stem rust on six cultivars was received at the Cereal Disease Laboratory from Gadsden County.

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

Wheat leaf rust. Wheat leaf rust was seen in three additional states since the previous report.

Alabama – On April 9, leaf rust was observed in the lower canopy of four varieties in the wheat variety test plots, in Escambia County, southwest Alabama. 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.

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

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

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](#)

2023 wheat leaf rust survey summary and results are available.

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

Wheat stripe rust. Wheat stripe rust is widespread in Kansas and severe in southwestern Oklahoma. So far, stripe rust has been reported in 18 states: Louisiana, Texas, Washington, Arizona, Oregon, Georgia, Mississippi, Alabama, North Carolina, Virginia, Oklahoma, Kansas, Nebraska, Indiana, Illinois, Kentucky, Tennessee, and Arkansas.

Oklahoma – High stripe rust incidence and severity were observed at the Oklahoma State University Research Station in Tipton, Tillman County. 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. Stripe rust was reported in the Oklahoma State University Research Stations in Stillwater, Payne County.

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. There have been no reports of stem or leaf rust yet in Kansas.

Nebraska – Low levels of wheat stripe rust were observed in six counties in southern Nebraska. The wheat was at the heading growth stage.

Washington – Stripe rust had progressed in the Palouse Conservation Farm Station near Pullman (Whitman County), most susceptible checks had active rust pustules but were restricted to the lower canopy. The wheat crop was at Feekes 6 growth stage. Previously at this location, a few stripe rust pustules were observed on spreader rows (see [Cereal Rust Bulletin #1](#)). 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.

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.

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.

Indiana – Stripe rust was first reported in Tippecanoe County on May 10.

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

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. In our previous report, oat stem rust was found in Florida and Louisiana (see [Cereal Rust Bulletin #1](#)).

Texas – Oat stem rust at the Castroville nurseries had reached 90 to 100% disease severity. Previously at this location oat stem rust was uniformly distributed in susceptible varieties and on top canopies (see [Cereal Rust Bulletin #1](#)). Oat stem rust was absent in the fields visited in Hidalgo County during the cereal rust survey conducted in the 3rd week of April.

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.

Oat crown rust. In our previous report, oat crown rust was observed in Texas, Louisiana, and Florida (see [Cereal Rust Bulletin #1](#)).

Florida – Oat crown rust collections from eight cultivars were received at the Cereal Disease Laboratory from Marion County.

California – Oat crown rust was observed on Montezuma at the Agronomy Field HQ in mid-April. Disease has increased to 80S.

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

Barley stem rust and rye stem rust. Stem rust was observed on barley and rye of sentinel plots at the Castroville nurseries. Rye stem rust was observed on triticale used in windbreaks of watermelon fields.

Alternate host. Aecial infection on *Rhamnus cathartica* was first observed in MN in the first week of May, one of the earliest in the record. Due to frequent rains, diseases have been severe.

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

Or, to: Dr. Oluseyi Fajolu (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
Washington State University 410 SE Dairy RD, 114B - 101 Pullman, WA 99164

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 or 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).

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.