CEREAL RUST BULLETIN

Issued by:

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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 recently confirmed in Indiana.
- Wheat leaf rust has been observed in 21 states, but disease levels remain low in most areas.
- No new report of wheat stripe rust since the previous bulletin.
- Oat stem rust was found in South Dakota and Minnesota.
- Oat crown rust is severe in South Dakota, Minnesota, and New York.
- Barley leaf rust was reported in New York and Washington.
- Rye leaf rust was observed in New York.
- *Request for cereal rust observations and samples in 2025.*

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 July 22, cold fronts across the northern U.S. and Midwest brought heavy showers and locally severe thunderstorms, resulting in mostly favorable conditions for reproductive to filling-stage summer crops. However, dry weather prevailed between the frontal systems. Some of the heaviest rainfall occurred across the South, East, and Ohio Valley. By July 19, Louisville, KY, recorded 5.26 inches of rain for the week, and Evansville, IN, recorded 5.15 inches. In contrast, the West experienced persistent hot and dry weather, which increased irrigation demands and stressed some summer crops. Monsoon-related showers brought only limited relief to a few areas. Weekly temperatures averaged at least 5°F above normal in Oregon, Washington, and northern parts of California and Nevada. As of July 20, topsoil moisture was rated 82% very short in Washington and 76% in Oregon.

Crop conditions. According to the July 22 report, 73% of the nation's winter wheat acreage had been harvested, two percentage points below last year but one point above the five-year average. For spring wheat, 87% of the crop had headed, matching last year's progress but falling one percentage point short of the five-year average. Overall, 52% of the spring wheat crop was rated in good to excellent condition, compared to 77% at the same time last year. Nationwide, 96% of the oat crop had headed, two percentage points ahead of last year and one point ahead of the five-year average. As of July 20, 20% of the oat crop had been harvested, one percentage point behind last year but equal to the five-year average. Overall, 58% of the oat crop was rated in good to excellent condition, eight percentage points below last year. By July 20, 76% of the nation's barley crop had headed, compared to 83% last year and 87% over the past five years. Overall, 45% of the 2025 barley crop was rated in good to excellent condition, down from 74% at the same time last year.

Wheat stem rust. Wheat stem rust was confirmed in variety trials at the Purdue University Agricultural Center for Research and Education near West Lafayette, Indiana. Disease severity reached 10%, with 1% incidence observed. The sample was identified as race QFCSC, the dominant wheat stem rust race currently present in the United States.

Wheat leaf rust. USDA-ARS Cereal Disease Laboratory staff conducted a cereal rust survey from July 14–16 at University of Minnesota Southern Research Centers and in eastern South Dakota. Leaf rust incidence and severity were generally low. Wheat stem rust was not detected in any wheat fields visited during the survey. To date, wheat leaf rust has been reported in 21 states: Texas, Oklahoma, Kansas, Nebraska, South Dakota, Minnesota, Illinois, Indiana, Ohio, Kentucky, Mississippi, Alabama, Louisiana, Georgia, South Carolina, North Carolina, Virginia, Maryland, New York, California, and Washington.

South Dakota – Low levels of wheat leaf rust were observed in various trials at the South Dakota State University research fields in Aurora (Brookings County). No leaf rust was found in the durum plots. At the Volga location, most wheat yield and research plots had been treated with fungicide. When present, leaf rust ranged from low to moderate in severity and incidence. Disease levels did not differ significantly between treated and untreated plots, and symptoms were relatively easy to find.

Minnesota – On July 14 at the University of Minnesota Southern Research Centers, no wheat leaf rust was found in the research plots in Waseca County (south-central Minnesota), although most trials received fungicide treatment. In Redwood County (southwest MN), trace to low levels of leaf rust were detected on a few varieties, including CP3099A, LCS Hammer AX, and MN22071-4.

New York – Only trace levels of leaf rust were observed in spring wheat and low levels in winter spelt at nurseries in Ithaca. Spring wheat was at post-anthesis during the observation period.

Washington – In Skagit County, up to 60% severity and 80% incidence of wheat leaf rust were recorded on variety Temple at the Mount Vernon nurseries. Other varieties had lower disease levels. Samples have been submitted to the Cereal Disease Laboratory. Previously, low to moderate levels of leaf rust were reported in Whitman County (see Cereal Rust Bulletin #2).

Wheat leaf rust collection map. Please visit: usdaars.maps.arcgis.com

Wheat cultivar *Lr* gene postulation database.
Please visit: Leaf rust resistance gene postulation in current U.S. wheat cultivars

Wheat stripe rust. No new observations have been reported since the last edition (see Cereal Rust Bulletin #4). As of mid-June, the disease has been confirmed in 16 states: Texas, Oklahoma, Kansas, Nebraska, Wisconsin, Michigan, Indiana, Louisiana, Georgia, Virginia, Delaware, California, Washington, Oregon, Idaho, and Montana.

Stripe rust observation map. Please visit: usdaars.maps.arcgis.com

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. All oat stem rust collections processed to date have been identified as races TGN and SGN. Previously, oat stem rust was reported in Texas, Louisiana, and Illinois (see Cereal Rust Bulletin #4).

South Dakota – Low levels of oat stem rust were detected on a few varieties at the South Dakota State University research fields in Volga.

Minnesota – Oat stem rust was observed at up to 50% severity and incidence in variety trials at the University of Minnesota research plots in Redwood County.

California – On July 22, the Cereal Disease Laboratory received two oat stem rust collections from Camarillo in Ventura County.

Oat crown rust. Recent reports indicate severe natural crown rust in both research and production fields. Samples from these locations have been submitted to the Cereal Disease Laboratory for race identification.

South Dakota – At the South Dakota State University research field in Volga, oat crown rust severity and incidence ranged from low to 100%, depending on the variety. The pathogen had progressed to the telial stage in some varieties. In contrast, only a few crown rust pustules were found in a narrow strip of a later-maturity variety within the yield trial at the Aurora location.

Minnesota – In mid-July, high crown rust pressure was observed in oat yield and variety trials at the University of Minnesota Southern research fields in Waseca and Redwood counties. Disease severity and incidence reached up to 100%, depending on the variety. Teliospores had developed on the lower canopy of most susceptible varieties. Severe crown rust was also reported in a production field in Olmsted County located in southeastern Minnesota.

New York – Oat crown rust is the most prevalent rust observed during the 2025 growing season in New York and poses a significant threat to susceptible cultivars. Varieties with high disease pressure include Steuben, Mistral, Caprice, Corrall, and NewDak.

Oat crown rust observation map. Please visit: usdaars.maps.arcgis.com

Barley leaf rust. Since the previous reports (see Cereal Rust Bulletin #4), where barley leaf rust was identified in Texas, Illinois, Kentucky, and North Carolina, the disease has now been reported in two additional states:

New York – Trace levels of barley leaf rust were observed in variety nurseries at *Ithaca* after flowering.

Washington – At the Mount Vernon *nurseries*, barley leaf rust reached 40% severity and 50% incidence across multiple varieties.

Rye leaf rust. Low levels of rye leaf rust were observed in nurseries at *Ithaca, New York*. The rye crop was at soft dough stage. Previously, the disease had been reported in *Texas, Nebraska, Illinois,* and *Indiana.*

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.