



CEREAL RUST BULLETIN

Issued by:

Cereal Disease Laboratory

U.S. Department of Agriculture
Agricultural Research Service
1551 Lindig St, University of Minnesota
St. Paul, MN 55108-6052
(612) 625-6299
FAX (651) 649-5054
oluseyi.fajolu@usda.gov

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 is present in Louisiana
- Wheat leaf rust is active and progressing in Texas and Louisiana
- Wheat stripe rust was reported from Texas, Oklahoma, Louisiana, and eastern Pacific Northwest
- Oat crown rust and oat stem rust are widespread and severe in Louisiana.
- *2019 Wheat leaf rust race survey results are now available.*
- *Request for cereal rust observations and samples in 2020.*

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 April 7, warm and dry weather persisted in most of the South, thereby promoting fieldwork in Texas and Louisiana. Last week precipitation in southern Texas eased the local drought. Weather conditions were close to normal in the eastern Pacific Northwest.

Crop conditions. According to the April 7 report, 62% of the nation’s winter wheat acreage was reported in good to excellent condition, two percentage points above last year. On April 5, 26% of the 2020 oat crop was seeded, the same as this time last year but three percentage points behind the 5-year average. Twenty-four percent of the nation’s oat acreage had emerged, one percentage point behind average records.

Wheat stem rust. The first observation of wheat stem rust was reported from Baton Rouge, Louisiana, on March 1. Early infection found in headrows probably started last fall, according to Steve Harrison's observations. The disease appeared about four weeks earlier than usual. The majority of the wheat lines were at the first node growth stage. At the end of March, disease pressure had increased significantly, and stem rust had begun to spread to adjacent areas of the field. Wheat stem rust has not been reported elsewhere this season.



Wheat leaf rust. Wheat leaf rust is progressing in Texas and Louisiana.

Texas – Wheat leaf rust was found active and moving up the canopy of susceptible varieties of winter wheat in Castroville on March 17. Virulence to Lr24 varieties was more compared to Lr39/41. Wheat growth stages ranged from Feekes 6 to 10.5. By April 7, the disease had spread uniformly across both spring and winter wheat nurseries. Leaf rust on flag leaves of susceptible spring wheat lines had reached 90% severity. Leaf rust in the upper canopy of susceptible winter wheat TAM 110 was rated 70S.

Oklahoma – Leaf rust was observed on triticale in South Central Oklahoma in mid-March, but the disease has not been reported on wheat in the state.

Louisiana – Early infection of wheat leaf rust was found last week of March in Winnsboro. Wheat plants were approaching heading at that time. A similar but widely distributed leaf rust infection was observed in Baton Rouge. Disease at both locations will continue to spread in the next weeks.

Wheat cultivar *Lr* gene postulation database.

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

2019 wheat leaf rust survey summary and results are now available.

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

Wheat stripe rust. Wheat stripe rust is present in Texas, Oklahoma, Louisiana, and eastern Pacific Northwest. The disease is not severe at this time.

Texas – Wheat stripe rust was detected in Texas in early March in nurseries at Castroville and Uvalde. Symptoms on susceptible Patton soft red winter wheat and TAM 110 hard red winter wheat were more severe and uniformly distributed at Uvalde compared to those at Castroville. During a follow-up evaluation at Castroville made on March 17, stripe rust was no longer active due to increasing temperature. Wheat ranged from first node to heading complete growth stages.

Oklahoma – Early-season infection of wheat stripe rust was observed on March 6 in variety demonstration plots around Stillwater in north central Oklahoma. Stripe rust was found at very low severity and incidence in south central OK in mid-March. In contrast, neither stripe rust nor other wheat rust was found in the field scouted near El Reno in central OK.

Louisiana – Wheat stripe rust was observed at low levels in nurseries at Winnsboro and Baton Rouge on February 28. Disease progression and spread were limited due to the higher temperature in March. Only a few susceptible varieties had approximately 20% severity in Winnsboro and approximately 50% severity in Baton Rouge. By the end of March, stripe rust was no longer active at these locations, and not reported elsewhere within the state.

Washington – Winter wheat fields in Lincoln, Douglas, Grant, Adams, Franklin, Benton, and Walla Walla Counties were scouted on February 26. One leaf with active stripe rust was found in a commercial field in Lincoln County, at the same location where stripe rust was found last November. Stripe rust was also found on susceptible check variety in an experimental field in Walla Walla. Wheat rust had not developed in the other counties at that time. There was no new report of stripe rust after another field scouting on April 1 in Whitman, Garfield, Columbia, Walla, Walla, Benton, Franklin, and Adams Counties. Wheat stripe rust was still active in the experimental field in Walla Walla.

Oregon – Wheat stripe rust was observed on susceptible wheat variety in a disease monitoring nursery in Pendleton after surveying different fields in Umatilla County on February 26. A follow-up survey on April 1 did not result in additional stripe rust observation. Stripe rust was not found in commercial fields visited.

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 crown rust and oat stem rust. Oat crown and stem rust were first observed at low severity and incidence in oat plots at Baton Rouge in south Louisiana on January 25. Weather conditions have been wet and warm which favored the progression of the diseases. By mid-February, oat crown and stem rust had increased significantly and spread in nurseries in Baton Rouge and Alexandria (central Louisiana). At the end of March, oat crown rust was widespread and severe on susceptible varieties at both sites, with many dead plants before heading in Baton Rouge. At Winnsboro, northeast LA, oat crown rust is moderate to severe with approximately 60% on susceptible check varieties *Brooks*. Oat stem rust is more widespread and severe in Winnsboro compared to Baton Rouge and Alexandria. Stem rust is expected to devastate susceptible varieties. According to Steve Harrison, this is the most severe oat stem rust he has seen in many years in Winnsboro. Stem rust is the most challenging in oat production in recent years.

Barley leaf rust and barley stem rust. These diseases have not been reported in the U.S. this year.

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). We understand the challenges associated with movement restrictions at this time. However, if you are able to go to cereal fields, please collect rust samples and send to us. We sincerely thank all those who have assisted us in the past and hope the assistance continues this year, especially during this hard period.

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:

- 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:

Dr. Oluseyi Fajolu/ Dr. Shahryar Kianian
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 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.isoftware.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.