



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 confirmed in Oklahoma.
- Wheat leaf rust was reported from Oklahoma and Kansas.
- Wheat stripe rust is widespread in Oklahoma, but at low levels in Kansas, Washington, and Illinois.
- There have been no new accounts of oat crown rust and oat stem rust since they were reported to be widespread and severe in Louisiana.
- Barley stripe rust was found in Oregon.
- *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 May 5, the Pacific Northwest to the northern Plains experienced scattered showers. This temporarily slowed fieldwork but generally benefited wheat crops. Below-normal temperature persisted throughout the Plains. Some parts of the central High Plains experienced a temperature near 32°F on May 5, whereas, the southeastern Plains experienced scattered thunderstorms.

Crop conditions. According to the May 5 report, 32% of winter wheat has headed nationwide, compared to 26% at the same time last year and 38% over the past five years. Fifty-five percent of the nation’s winter wheat crop was reported in good to excellent condition, nine percentage points below the same time last year. Twenty-nine percent of the spring wheat crop was seeded by May 3, ten percentage points ahead of last year but fourteen percentage points behind the five-year average. Six percent of the spring wheat crop had emerged, two percentage points ahead of last year but ten points behind average. Sixty-seven percent of the 2020 oat crop was seeded by May 3, nineteen percentage points higher than last year but the same as the five-year average. Forty-four percent of the nation’s oat acreage had emerged, nine percentage points higher than last year but three points below average. Forty-one of the nation’s barley was planted by May 3, seven percentage points above last year but nine points below the five-year average. Twelve percent of the nation’s barley had emerged, two percentage points above last year but eleven points below the five-year average.



Wheat stem rust. Wheat stem rust hotspot was found in a nursery around Stillwater in north central OK on May 7. Stem rust observation is rare in Oklahoma and was seen last in 2013. Wheat around Stillwater was at milk to soft dough growth stages. Stem rust was previously observed in Baton Rouge, Louisiana (see [Cereal Rust Bulletin #1](#)).

Wheat leaf rust. Wheat leaf rust is prevalent in Oklahoma but at low levels in Kansas. Previously, wheat leaf rust was reported from Texas and Louisiana (see [Cereal Rust Bulletin #1](#)). There have been no new accounts of wheat leaf rust from these states.

Oklahoma – Low levels of wheat leaf rust were reported from south central and southwestern Oklahoma in late April. Wheat ranged from flowering to soft dough growth stages at that time. By early May, leaf rust was observed around Stillwater and becoming prevalent across the state. Previously, leaf rust was only found on triticale (see [Cereal Rust Bulletin #1](#)).

Kansas – Only a few leaf rust pustules were observed on the lower leaves of susceptible checks in Hutchinson in April. This is the first report of wheat leaf rust in Kansas.

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 widespread in Oklahoma, and rust levels ranged from low to high incidence and severity across the state. Low levels of stripe rust occur in Kansas, Washington, and Illinois, mostly on susceptible varieties, but known resistant varieties are also infected. Wheat stripe rust was previously reported from Texas, Louisiana and Oregon (see [Cereal Rust Bulletin #1](#)). There have been no new reports of stripe rust from these states.

Oklahoma – In early April, increased incidence and severity of stripe rust were observed around Stillwater (north central), at Chickasha (central) and in southwestern OK. Small to large hotspots were found at these locations. A plot with susceptible wheat variety was severely infected with flag leaves fully covered with stripe rust. The wheat crop was at the boot growth stage at that time. In late April, the telial stage of the rust was found in the central and southern parts of the state due to warmer temperatures that make stripe rust less active. In the southwestern region, stripe rust was actively producing yellowish-orange urediniospores on leaves. Previously, low levels of stripe rust were reported from north central and south central OK (see [Cereal Rust Bulletin #1](#)).

Kansas – Wheat stripe rust was reported from different fields in Sedgwick, Reno, and Pratt Counties on April 28. Infection was restricted to low and middle canopies at a very low incidence. By May 2, more low levels of stripe rust were reported from Ford, Saline, Dickinson, and Geary Counties. The disease was mostly found on susceptible varieties such as Everest and Byrd. Zenda and LCS Chrome varieties considered resistant to *Puccinia striiformis* were also infected. Wheat crop ranged from boot to heading growth stages in the southern region, and from flag leaf emergence to late jointing in the northern region of the state.

Washington – Wheat fields in Whitman, Adams, Lincoln, Grant, and Douglas Counties were assessed on April 21. Stripe rust was found only in one commercial field in Lincoln County at below 1% incidence and restricted to the lower leaves. Wheat growth stages ranged from Feekes 4 to 7 at that time. The use of fungicides on winter wheat contributed to the low levels of stripe rust in WA. On May 5, stripe rust was found on susceptible varieties in two out of the three winter wheat experimental fields assessed around Pullman in Whitman County. These fields were previously scouted in the third week of April and were without wheat rust. Stripe rust was limited to the lower leaves

at below 1% incidence but actively sporulating. This is the first report of wheat stripe rust in the Palouse region. The disease appeared about the usual time in the Palouse region, but approximately one week earlier and with more rust pressure compared to last year. The current and forecasted weather conditions favor *P. striiformis* sporulation and infection and hence, will promote the spread of stripe rust. Previously, wheat stripe rust was reported from Walla Walla and Lincoln Counties (see [Cereal Rust Bulletin #1](#)).

Illinois – Scattered wheat stripe rust was observed in fields in Crawford, Clark, and Madison Counties on May 6. The disease is expected to spread, but growers with confirmed stripe rust plan to treat fields with a fungicide to control Fusarium Head Blight at flowering. Such products do have activity against stripe rust. Wheat crop at these fields was at or approaching heading growth stage.

California – On April 20, severe stripe rust was observed on triticale varieties in the Central Valley, CA. This is the first report of stripe rust in the state.

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. There have been no new observations of oat crown rust and oat stem rust since they were reported to be widespread and severe in Louisiana (see [Cereal Rust Bulletin #1](#)).

Barley stripe rust. Barley stripe rust was found in Corvallis, Oregon.

Barley leaf rust and barley stem rust. These diseases have not been reported in this season.

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.