CEREAL RUST BULLETIN

Report No. 1
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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
Mark.Hughes@ars.usda.gov

For the latest cereal rust news from the field, subscribe to the cereal-rust-survey listserv list. To subscribe, please visit: http://www.ars.usda.gov/Main/docs.htm?docid=9970

Or, send an email to: Mark.Hughes@ars.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 leaf rust has been reported in South Texas, Louisiana, Georgia and Arkansas nurseries.
- Wheat stripe rust was found in South Texas and Louisiana.
- Oat crown rust was found in two different nursery locations in South Texas.
- Barley leaf rust was found in a nursery in northwestern Washington.
- *Request for cereal rust observations and samples in 2014.*

Small grain development and spring fieldwork in the Great Plains and to the east is generally delayed due to the unusually cool late winter and early spring weather. Ongoing drought conditions in many areas of the central and southern plains continue to be a concern for small grain production. These conditions and the apparent low levels of overwintering cereal rusts have delayed cereal rust development and spread.

Wheat stem rust. Not yet reported this year in the U.S.

Wheat leaf rust.

South Texas – Wheat leaf rust was slowly developing in Castroville plots in early March. By March 26, wheat leaf rust was uniformly distributed in the lower canopy of winter wheat spreader rows (Feekes growth stages 8-10.5) in nurseries at Castroville and Wharton. The leaf rust at Wharton was progressing up into the mid-canopy. Warm temperatures and recent rains created conditions for favorable rust spread. At Beeville, where there are both winter (Feekes 5-7) and spring (Feekes 9-10) wheat plots, leaf rust was increasing on TAM 112 (Lr39/41) and in the spreader rows. Leaf rust was developing on TAM 112 and spreader rows at College Station, and the wheat was at Feekes 9-10 growth stage.

Louisiana – Wheat leaf rust was present at low incidence and severity in an early planted Baton Rouge nursery on March 18. The cold, wet winter generally delayed rust development, however with warmer temperatures rust development is expected to increase.

Georgia – Wheat leaf rust was widespread in a very early-planted (2 months earlier than normal recommendations) wheat strip in a nursery at Plains in southwestern Georgia on April 2. While leaf rust is usually found in this area the severity level was high for this early in the season. Leaf rust was also found on the lower leaves of the most susceptible lines in another nursery 300 yards away.

Arkansas – Fresh wheat leaf rust pustules were found on volunteer wheat at the experiment station at Marianna in the east central part of the state on March 20.

Wheat leaf rust 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.

Wheat stripe rust.

South Texas – Wheat stripe rust was found in the middle of a nursery field at Castroville on March 7. The wheat was at Feekes stage 7-9. Conditions were conducive for further development. The rust had spread throughout the field reaching 60s on flag leaves of some lines by March 26. Expected warmer temperatures will likely slow the stripe rust development in the nursery.

Louisiana – Low levels of stripe rust (<1% severity and prevalence) were observed on GACT7, a susceptible cultivar, in plots at Alexandria in central Louisiana in late March. Stripe rust at low incidence and severity was also observed in plots at Crowley in southwestern Louisiana.

Please send wheat and barley stripe rust collections as soon as possible after collection to:

Dr. Xianming Chen
USDA-ARS
361 Johnson Hall
P.O. Box 646430
Washington State University
Pullman, WA 99164-6430
email: xianming@wsu.edu

***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.

Wheat stripe rust map. *Please visit:* http://www.ars.usda.gov/Main/docs.htm?docid=9757.

Oat stem rust. Not yet reported this year in the U.S.

Oat crown rust.

South Texas – Oat crown rust was building and appeared as though it would uniformly spread throughout the nursery at Wharton in late March. Crown rust was also increasing on Nora at Beeville, but had not yet been found at College Station.

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

Barley stem rust. Not yet reported in the U.S. this year.

Barley leaf rust. Low levels of barley leaf rust were found on the lower leaves of the winter barley Alba in plots at Mount Vernon in northwestern Washington on March 25. The rust apparently overwintered on fall planted barley.

Barley leaf rust map. *Please visit:* http://www.ars.usda.gov/Main/docs.htm?docid=9757.

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). Without this assistance our job would be much more difficult. We sincerely thank all those who have assisted us in the past and hope the assistance continues this year and in future years.

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: Mark Hughes (Mark.Hughes@ars.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 if possible, 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 24 hours 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:

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

**** Stripe rust collections should be sent to:**

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

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 Mark Hughes (Mark.Hughes@ars.usda.gov).

All messages sent to the list are archived on the CDL website:

http://www.ars.usda.gov/Main/docs.htm?docid=9757

Identifying rust diseases of wheat and barley
A guide developed by the multi-state extension and research committees for small grain diseases, NCERA-184 & WERA-97, is available at:

http://www.ars.usda.gov/SP2UserFiles/ad_hoc/36400500Publications/Rust_Diseases_National.pdf

*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.