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COLORADO WHEAT DISEASE NEWSLETTER

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Thank you to all who attended the Colorado Wheat Field Days! We certainly lucked out with the weather, and it was great to see you all again.

DISEASE OBSERVATIONS

Stripe rust

Stripe rust has been spotted at very low incidence and severity in Kit Carson, Adams, Arapahoe, Weld, Sedgewick, Yuma, and Washington counties (**Figure 1**). While the weather in Colorado has been conducive to stripe rust disease development, I anticipate that the spore levels will remain low and should not cause widespread disease.



Figure 1. Very low levels of stripe rust found during Wheat Field Days.

Management and Prevention: The decision to spray should depend on the susceptibility of the wheat variety to stripe rust and the growth stage of wheat. Protecting the emerging flag leaf is most important since it is the biggest contributor to grain fill. Wheat that isn't flowering yet may benefit from a pesticide spray if susceptible varieties are affected. However, be sure to pay attention to the permitted pre-harvest spray interval for each pesticide.

Wheat streak mosaic virus/Triticum mosaic virus:

Several samples have tested positive for WSMV and TriMV. These viruses are transmitted by the wheat curl mite and typically occur together. Symptoms appear as yellow streaks and mosaic, yellow and green patterns on leaves.

Management and prevention: There is no treatment for virus-infected plants, and no miticides are effective against the vector (the wheat curl mite). Controlling volunteer wheat and planting WSMV- and mite-resistant varieties are the best control measures. However, there is no resistance against TriMV available, so controlling volunteer wheat between harvest and planting is critical.



Figure 2. Symptoms of a WSMV and TriMV co-infection.

Tan spot:

Tan spot is appearing across much of Colorado at very low levels (**Figure 3**). Tan spot appears as necrotic (dead, brown) diamond-shaped spots surrounded by yellow halos or borders. It is often found along with Stagonospora leaf blotch (**Figure 4**).

Management and prevention: Typically, as the weather warms tan spot does not continue to be a problem in Colorado, so fungicide applications are not usually recommended.

Stagonospora leaf and glume blotch:

Stagonospora leaf blotch was found across Colorado at very low levels (**Figure 4 and 5**), and is caused by a fungus (*Parastagonospora nodorum* and/or *P. avenae* f. sp. *triticae*). Symptoms develop in the spring and display small, yellow spots on lower leaves and glumes that develop into elongated, dark leaves as the season progresses. Wet, rainy weather, high humidity, and moderate temperatures (~68-75°F) favor disease development, and recent weather has been favorable for disease development in some areas. The fungus survives in infected residue. Typically, Stagonospora does not cause significant yield losses in Colorado, and is often found alongside tan spot disease.



Figure 3. Tan spot symptoms on wheat.



Figure 4. Glume blotch caused by Stagonospora fungus.



Figure 5. Leaf blotch caused by Stagonospora fungus.

Management and prevention: As long as the weather continues to get warmer, Stagonospora activity should decrease. Because the fungus survives in wheat residue, rotating crops will help reduce the number of spores in a field the following years. Fungicide seed treatments also help protect seedlings from infection.

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Growers are strongly encouraged to regularly scout wheat fields for diseases.

The **Colorado Wheat Entomology Newsletter**, written by Dr. Punya Nachappa, covers insect/mite pests and management tips. The newsletters are published bi-weekly during the growing season and are available here: <https://coloradowheat.org/category/news-events/wheat-pest-and-disease-update/>

Do you have a disease that you would like diagnosed? Contact the **Plant Diagnostic Clinic** for sample submission: <https://plantclinic.agsci.colostate.edu/> or plantlab@colostate.edu. **Diagnostics are conducted at no cost to farmers!**

Additional resources

1. The North Central Regional Committee on Management of Small Grain Diseases (NCERA-184) Fungicide Efficacy for Control of Wheat Diseases Table: <https://crop-protection-network.s3.amazonaws.com/publications/fungicide-efficacy-for-control-of-wheat-diseases-filename-2021-04-21-154024.pdf>
2. Wheat variety database with stripe rust and virus resistance ratings from field trials: <https://wheat.agsci.colostate.edu/database/>

CONTRIBUTORS

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