

Extension Agronomy

eUpdate

04/18/2016

These e-Updates are a regular weekly item from K-State Extension Agronomy and Steve Watson, Agronomy e-Update Editor. All of the Research and Extension faculty in Agronomy will be involved as sources from time to time. If you have any questions or suggestions for topics you'd like to have us address in this weekly update, contact Steve Watson, 785-532-7105 swatson@ksu.edu, Jim Shroyer, Crop Production Specialist 785-532-0397 jshroyer@ksu.edu, or Curtis Thompson, Extension Agronomy State Leader and Weed Management Specialist 785-532-3444 cthompso@ksu.edu.

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1. Special Edition: Stripe rust alert!

The recent rains across Kansas (Figure 1) will be beneficial to the wheat crop, but will also increase stripe rust activity on wheat. Stripe rust was already established at low levels in many areas of central Kansas and the recent rainfall greatly increases the risk that the disease will move the upper leaves soon (Figure 2). This movement to the upper leaves is important because they contribute most of the energy used by the plant to make grain. The disease has already reached the upper leaves in many fields in the southeast region of the state, which received more rain in previous weeks than other regions.

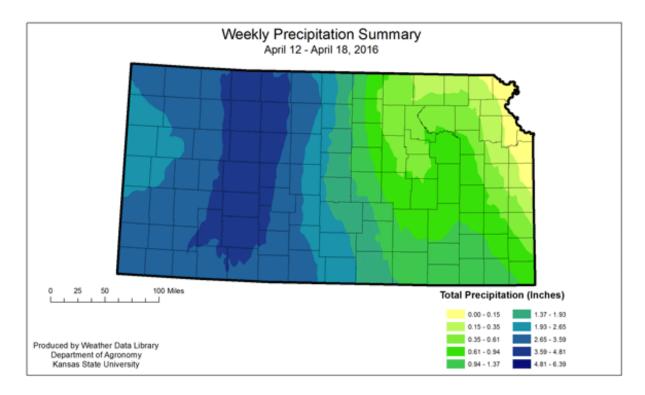


Figure 1. Precipitation summary for April 12-18, 2016. This rainfall may stimulate additional infections of the stripe rust fungus.

Distribution of Wheat Stripe Rust April 18, 2016

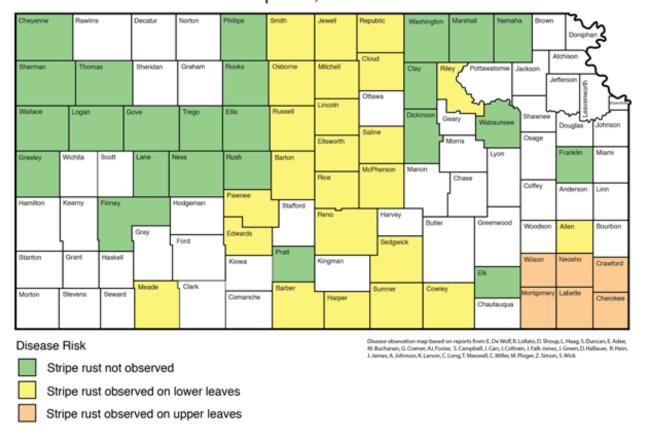


Figure 2. Distribution of stripe rust in Kansas as of April 18, based on observations from K-State Research and Extension plant pathologist, agronomists, and agents.

Where stripe rust was not yet present on wheat before the recent rains, producers have a little more time before making a decision about applying a fungicide. But it is still important to monitor for disease regularly. Fields planted to varieties susceptible to stripe rust should be scouted closely until the wheat is past the stage at which fungicides can be applied – which is flowering for most fungicides.

Where stripe rust was already present on lower leaves before the weekend of April 16-17, it may now quickly spread to the more critical upper leaves. A fungicide application now would likely be beneficial in those situations, depending on the yield potential of the crop.

In some areas of southeast and south central Kansas, stripe rust had already infected the flag leaf as of this past weekend. Where stripe rust is currently present on the flag leaves at low levels and most of the leaf's green area is still intact, a fungicide application will still be beneficial in most cases. There is a point of diminishing return however. If the disease has already destroyed more than 25% of the upper leaves, the crop will be less likely to benefit fully from the fungicide application. In this case, the disease has already damaged a good portion of the leaf area and has likely already begun to infect much of the remaining green tissue. The remaining green tissue may still die even after the fungus has been suppressed by the fungicide.

In short, I think we are headed for trouble with stripe rust. Growers should be checking fields and

Kansas State University Department of Agronomy 2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506 ready to spray when the weather clears.

Wheat farmers have a lot of fungicide options to chose from although product availability may vary regionally in the state. Most of the products are rated very good to excellent on stripe rust (Table 1). In general, the largest reductions in disease severity and greatest increases in wheat yield or grain quality occur when fungicides are applied between full extension of the flag leaves and anthesis (when the male flower parts have just begin to emerge). Applications intended for the management of glume blotch or head scab should be made between the beginning of anthesis and 50 percent flowering. Always consult the product label for specific growth stage restrictions and preharvest intervals (PHI) before making fungicide application.

Table 1. Efficacy of many widely marketed fungicide products against stripe rust.

| Fungicides | | | | | |
|----------------|--------------------|------------------------|----------------|--------------------|------|
| Class | Product | Active Ingredient | Rate | Stripe rust rating | Prel |
| | | | (fl. oz./acre) | | |
| Strobilurin | Approach SC | Picoxystrobin 22.5% | 6.0 - 12 | Excellent** | Fee |
| | Evito 480 SC | Fluoxastrobin | 2.0 – 4.0 | - | Fee |
| | | | | | day |
| | Headline 2.09 EC | Pyraclostrobin 3.6% | 6.0 – 9.0 | Excellent** | Fee |
| Triazole | Caramba 0.75 SL | Metconazole 8.6% | 10.0 – 17.0 | Excellent | 30 d |
| | Tilt 3.6 EC* | Propiconazole 41.8% | 4.0 | Very good | Fee |
| | Proline 480 SC | Prothioconazole 41% | 5.0 – 5.7 | Very good | 30 d |
| | Folicur 3.6 F* | Tebuconazole 38.7% | 4.0 | Excellent | 30 d |
| | Prosaro 421 SC | Prothioconazole 19% | 6.5 – 8.2 | Excellent | 30 d |
| | | Tebuconazole 19% | | | |
| Mixed modes of | Absolute Maxx SC | Tebuconazole 22.6% | 5.0 | Very good | 35 d |
| action | | Trifloxystrobin 22.6% | | | |
| | Fortix | Fluoxastrobin 14.8% | 4.0 – 6.0 | Excellent | Fee |
| | | | | | day |
| | | Flutriafol 19.3% | | | |
| | Trivapro A EC + | Benzovindiflupyr 10.3% | 4.0 + 10.5 | Excellent | Fee |
| | Trivapro B SE | _ | | | |
| | | Propiconazole 11.7% | | | |
| | | Azoxystrobin 13.5% | | | |
| | TwinLine 1.75 EC | Metconazole 7.4% | 7.0 – 9.0 | Excellent | Fee |
| | | Pyraclostrobin 12% | | | |
| | Priaxor | Fluxapyroxad 14.3% | 4.0 – 8.0 | Excellent | Fee |
| | | Pyraclostrobin 28.6% | | | |
| | Quilt Xcel 2.2 SE* | Propiconazole 11.7% | 10.5 – 14.0 | Excellent | Fee |
| | | Azoxystrobin 13.5% | | | |
| | Stratego YLD | Prothioconazole 10.8% | 4.0 | Very good | Fee |
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| | Trifloxystrobin 32.3% | | | day |
|-------------------|-----------------------|-----------|-----------|------|
| Approach Prima SC | Cyproconazole 7.17% | 3.4 – 6.8 | Excellent | 45 d |
| | Picoxystrobin 17.94% | | | |

^{*} Multiple generic products containing the same active ingredients also may be labeled in some states.

Source: Foliar Fungicide Efficacy Ratings for Wheat Disease Management 2016, K-State Research and Extension publication EP-130: http://www.bookstore.ksre.ksu.edu/pubs/EP130.pdf

Erick DeWolf, Extension Wheat Pathologist dewolf1@ksu.edu

Mary Knapp, Weather Data Library mknapp@ksu.edu

Chip Redmond, Weather Data Library christoperredmond@ksu.edu

^{**} Efficacy may be significantly reduced if solo strobilurin products are applied after stripe rust infection has occurred.