Major wheat diseases in Kansas: 2021 outlook

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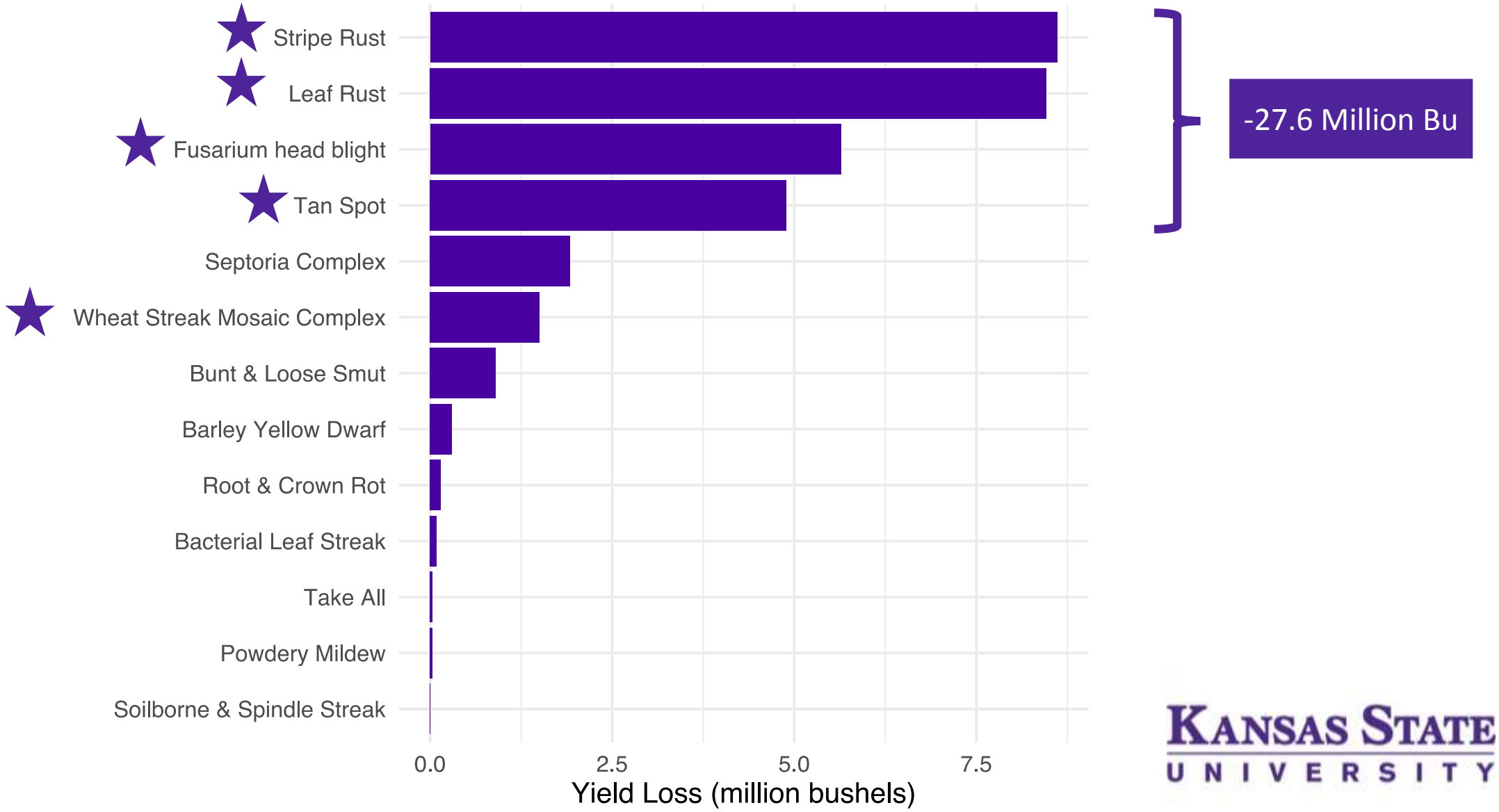
2020 Wheat Disease Yield Loss



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Stripe rust

Puccinia striiformis f. sp. *tritici*

Early stripe rust symptoms vs. severe infection

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Untreated

Rescue fungicide

Plant defense response

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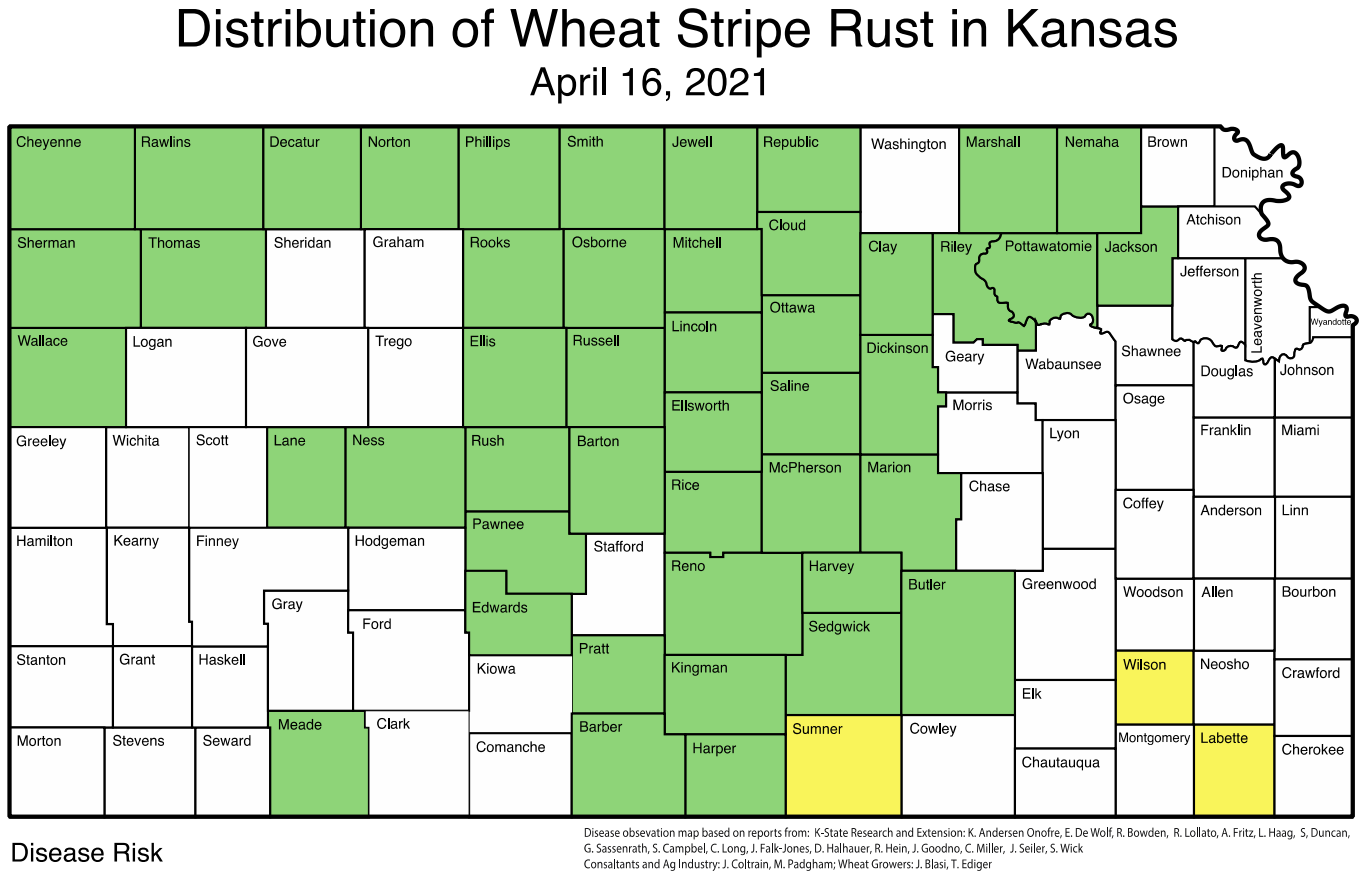
2021 conditions have been very favorable for stripe rust in Kansas



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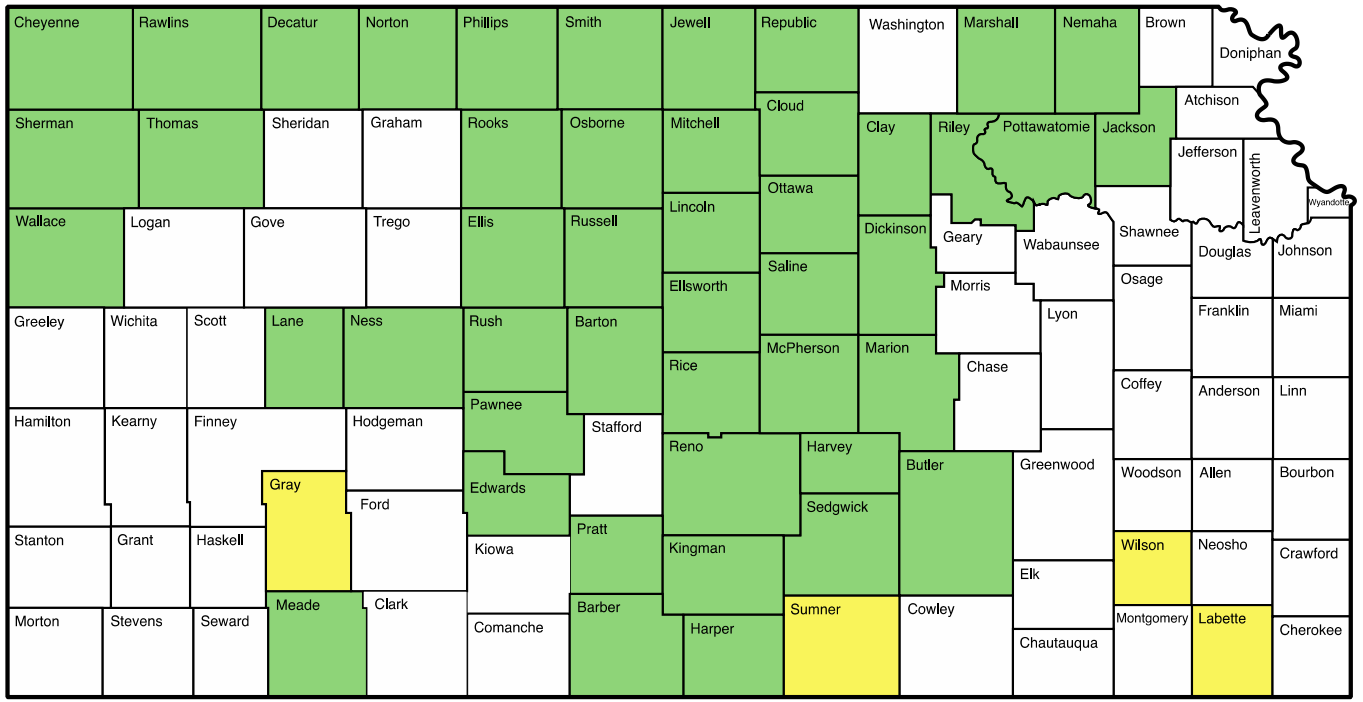
Distribution of Wheat Stripe Rust in Kansas

April 20, 2021



Disease Risk

- Stripe rust not observed
- Stripe rust observed on lower leaves
- Stripe rust observed on upper leaves

Disease obsevation map based on reports from: K-State Research and Extension: K. Andersen Onofre, E. De Wolf, R. Bowden, R. Lollato, A. Fritz, L. Haag, S, Duncan, G. Sassenrath, S. Campbel, C. Long, J. Falk-Jones, D. Halhauer, R. Hein, J. Goodno, C. Miller, J. Seiler, S. Wick
Consaltants and Ag Industry: J. Coltrain, M. Padgham; Wheat Growers: J. Blasi, T. Ediger

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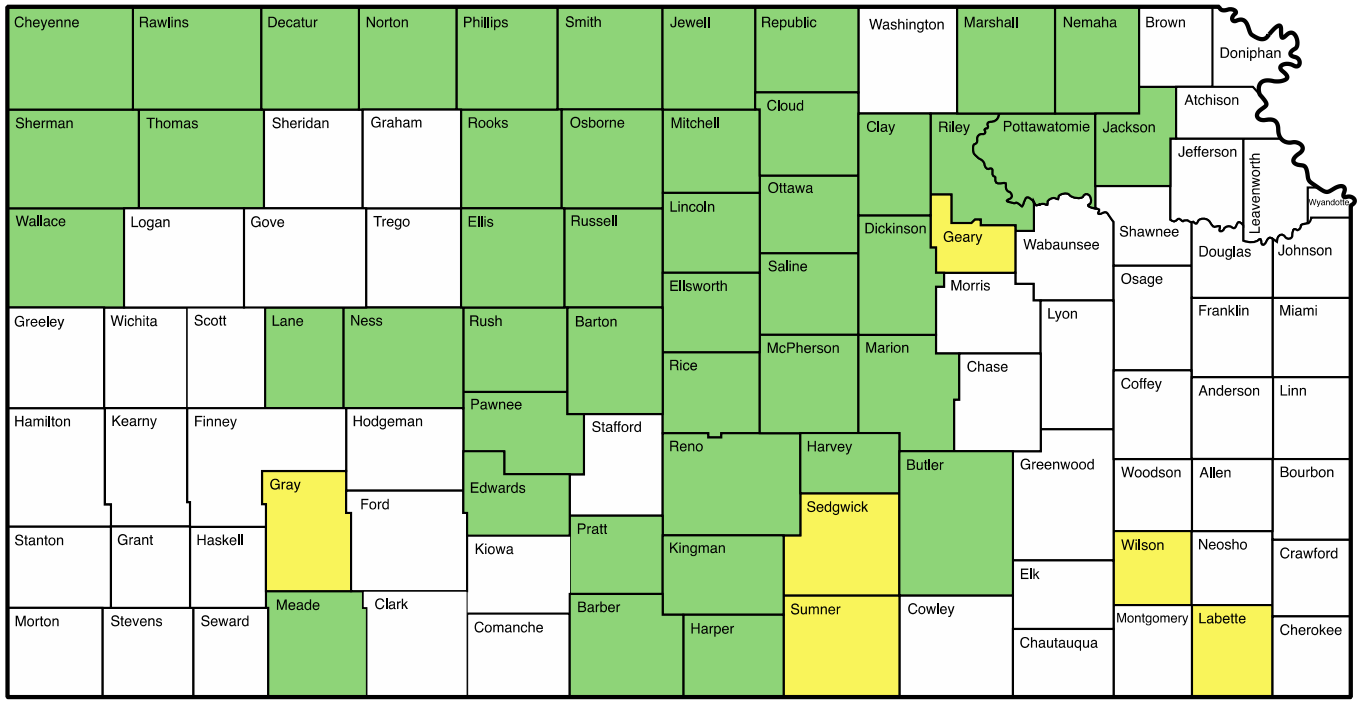
Distribution of Wheat Stripe Rust in Kansas

April 26, 2021



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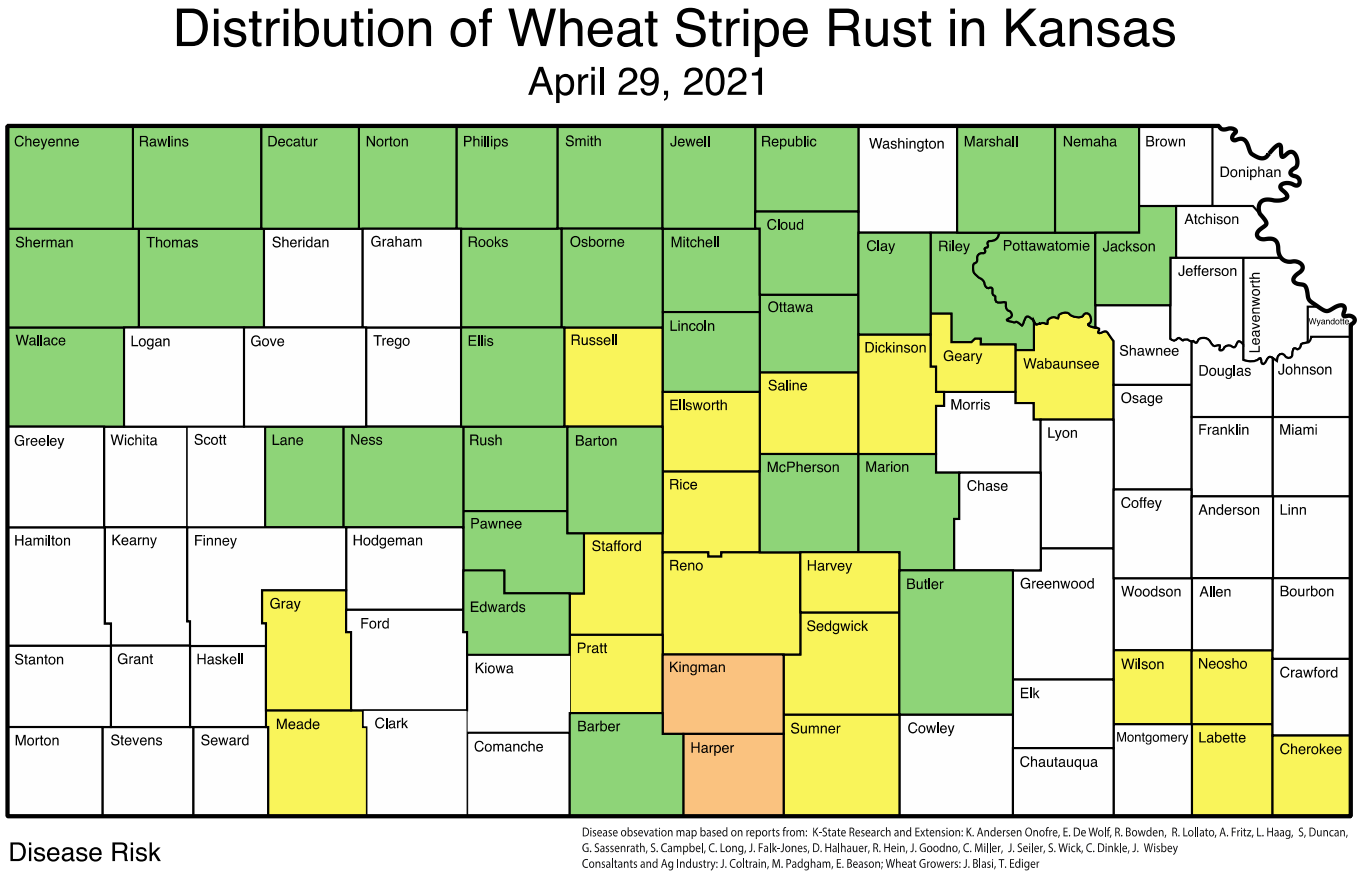

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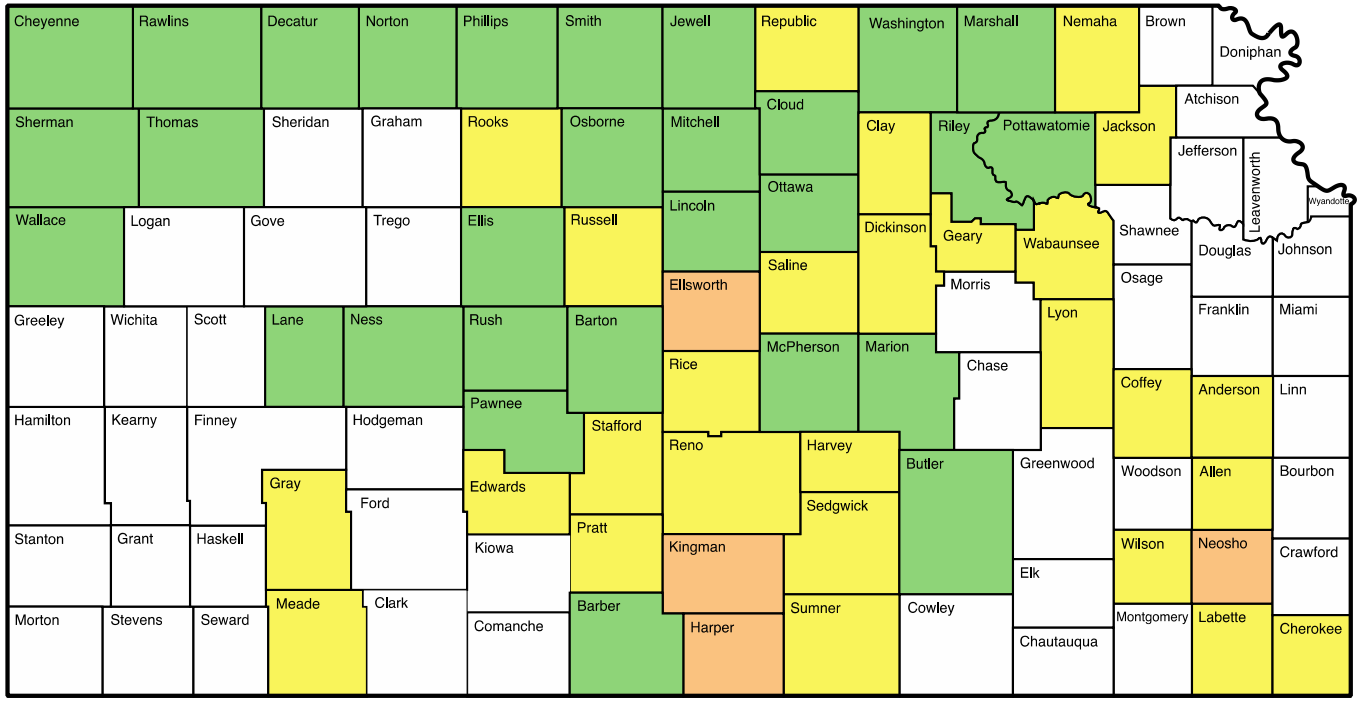
2021 conditions have been very favorable for stripe rust in Kansas

Distribution of Wheat Stripe Rust in Kansas

May 6th, 2021



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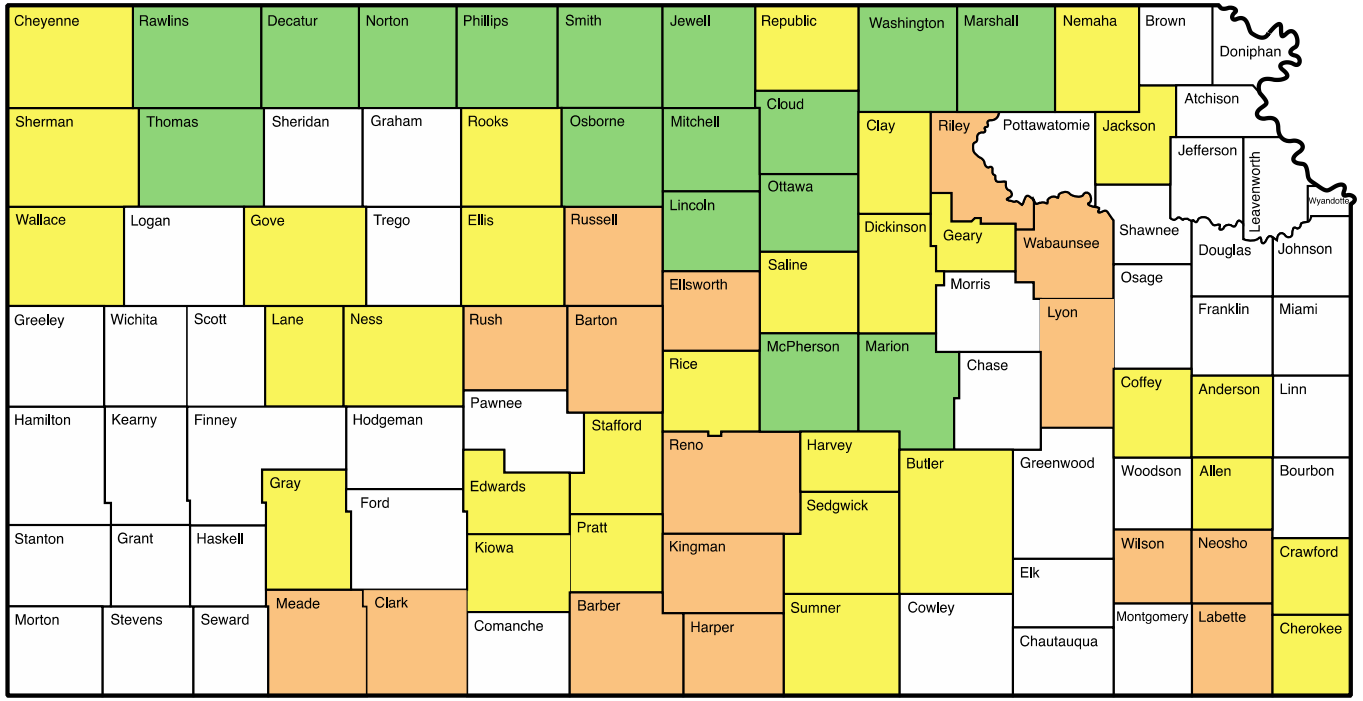
Distribution of Wheat Stripe Rust in Kansas

May 14th, 2021



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Leaf rust prefers warmer temps than stripe rust, just showing up in Kansas

Leaf Rust

68-85 F

Stripe Rust

45-60 F

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Wheat streak mosaic virus

Curl mite image: [Thomas et at. 2004]

Curl mite image: [Thomas et at. 2004]

Wheat Streak Mosaic Virus (and friends)

- Wheat streak mosaic virus
- Triticum mosaic virus
- High plains virus

Aceria tosichella

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Mites do a lot of damage in a short lifespan!

- Curl mites survive 8-10 days
- lay approximately 12 to 20 eggs
- Can survive ~ 4 days without host if temps are cool (~50°F) and humidity is high

Curl mite image: [Thomas et at. 2004]

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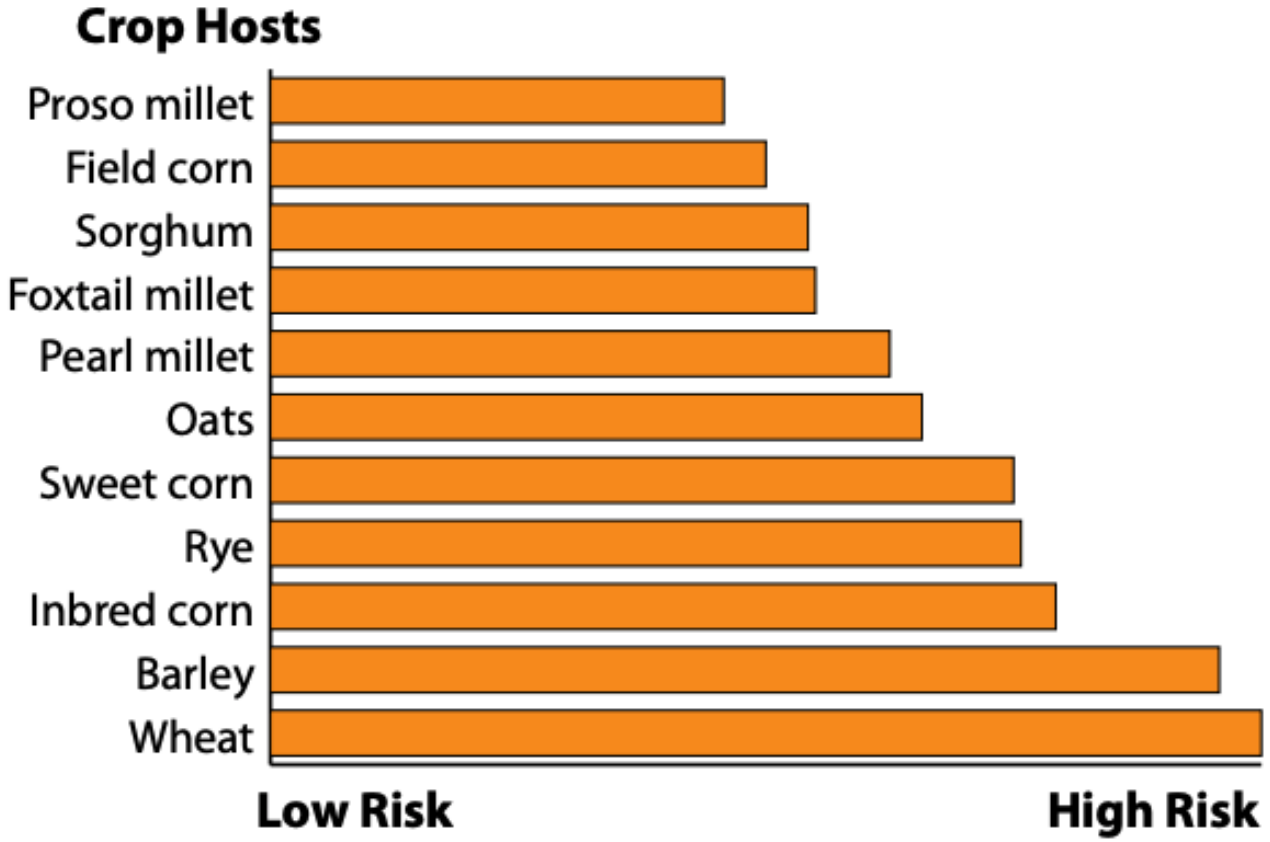
Other crops can be hosts for WSMV



- Weeds and other crops can serve as reservoirs for this virus
- Most important is **volunteer wheat**
- **Downey brome/cheatgrass**

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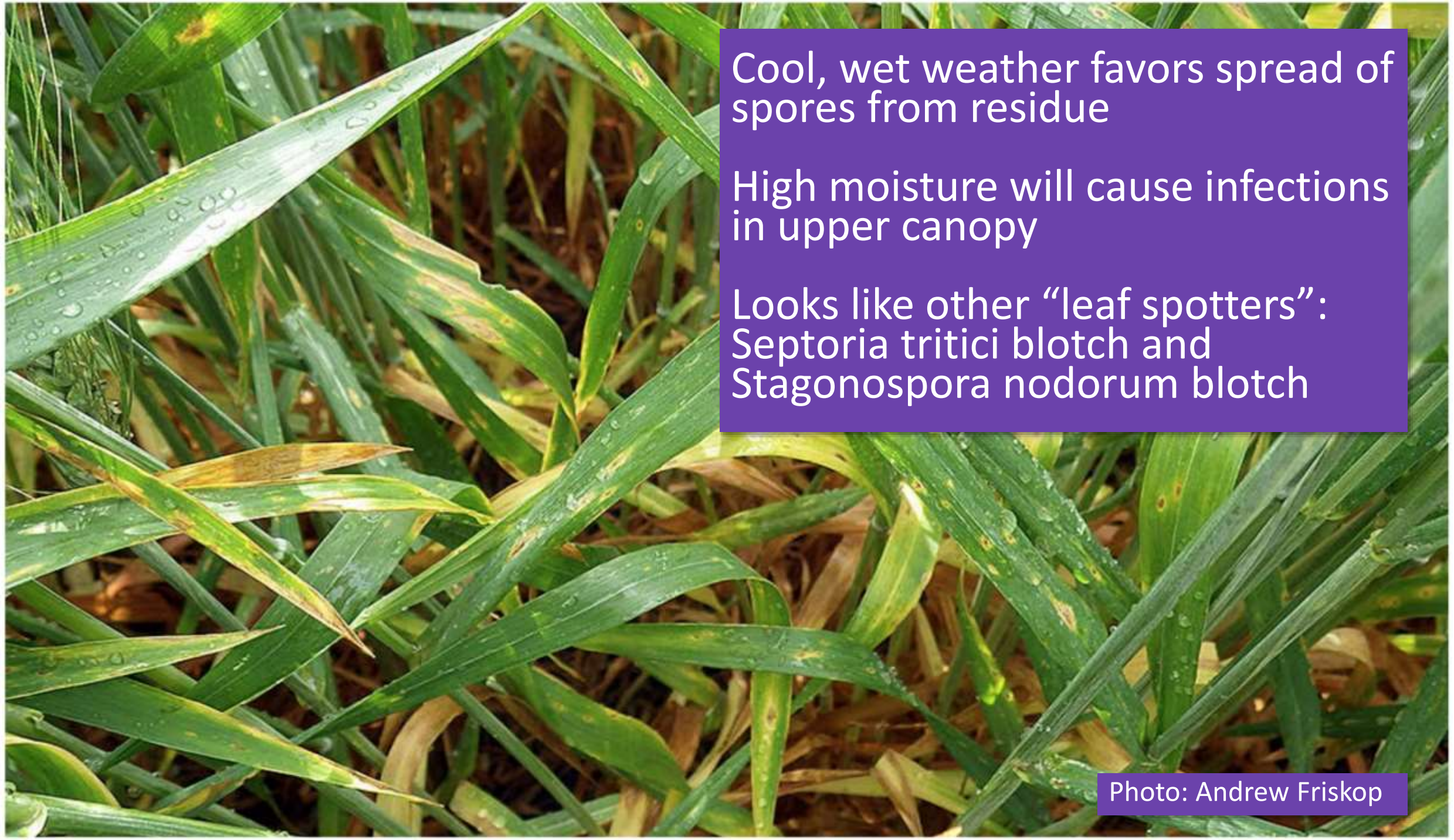
Tan spot
Pyrenophora tritici-repentis



Cool, wet weather favors spread of spores from residue

High moisture will cause infections in upper canopy

Looks like other “leaf spotters”: Septoria tritici blotch and Stagonospora nodorum blotch

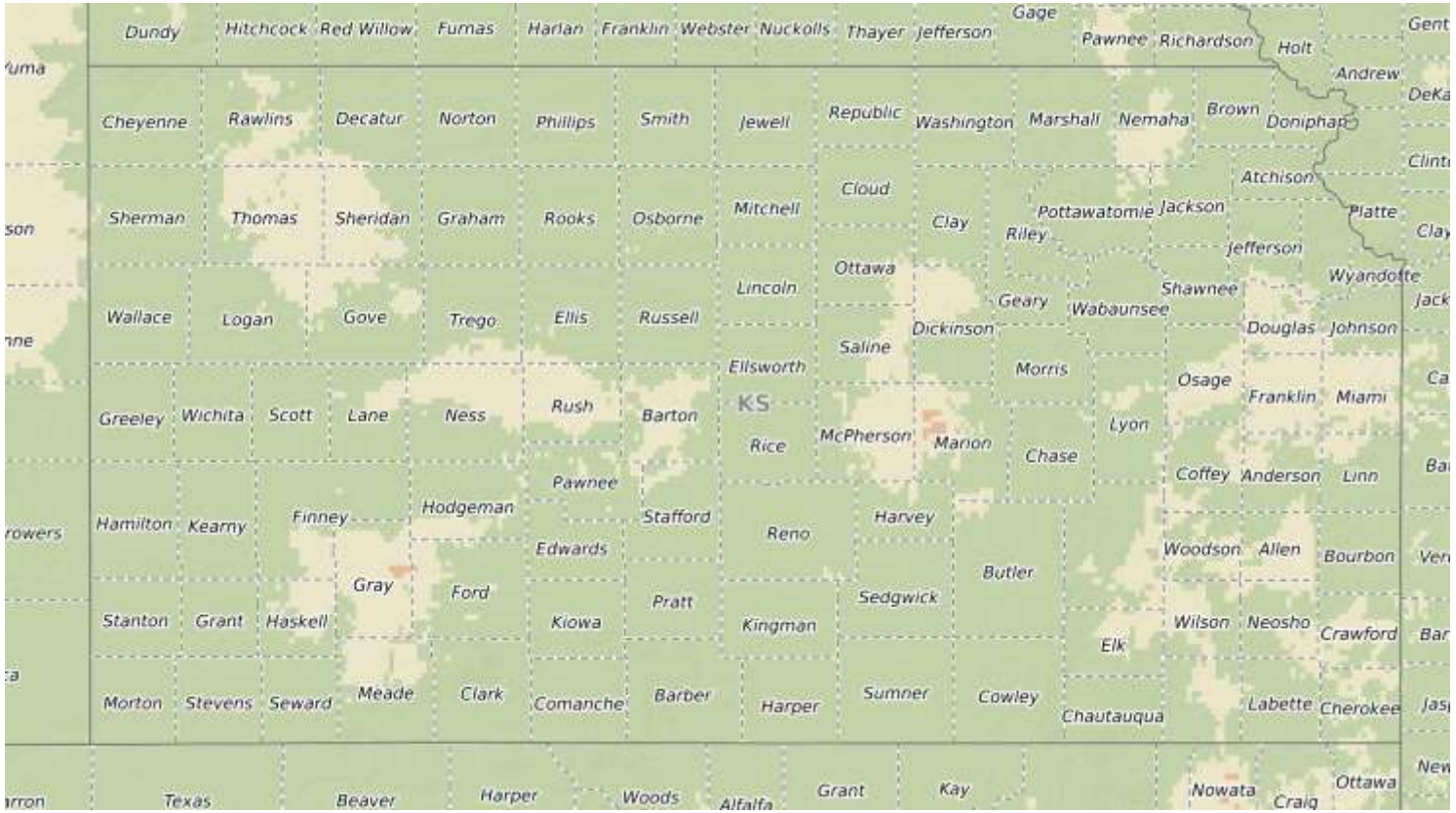
Photo: Andrew Friskop

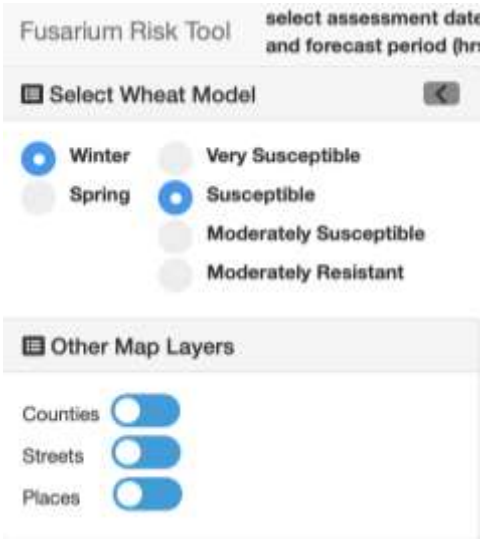
Fusarium head blight

Fusarium graminearum

Fusarium head blight risk can be monitored online with the risk tool: wheatscab.psu.edu

Current FHB (Scab) Risk in Kansas





wheatscab.psu.edu

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Questions?

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