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Extension Agronomy

eUpdate

03/31/2022

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, Agronomy eUpdate 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 Kathy Gehl, 785-532-3354 kgehl@ksu.edu, or Dalas Peterson, Extension Agronomy State Leader and Weed Management Specialist 785-532-0405 dpeterso@ksu.edu.

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eUpdate Table of Contents | 03/31/2022 | Issue 900

1. First hollow stem update (31 March 2022)	3
2. Prohibition for Enlist One and Enlist Duo lifted for Kansas	6
3. Weed Management Podcast Wrapping up Third Season	7
4. Outlook for stripe rust in the 2022 Kansas wheat crop	9

1. First hollow stem update (31 March 2022)

Cattle should be removed from wheat pastures when the crop reaches first hollow stem (FHS). Grazing past this stage can severely affect wheat yields (for a full explanation, please refer to the eUpdate article "[Optimal time to remove cattle from wheat pastures: First hollow stem](#)").

First hollow stem update

In order to screen for FHS during this important time in the growing season, the K-State Extension Wheat and Forages crew measures FHS on a weekly basis in 19 different commonly grown wheat varieties in Kansas. The varieties are in a September-sown replicated trial at the South Central Experiment Field near Hutchinson.

Ten stems are split open per variety per replication (Figure 1), for a total of 40 stems monitored per variety. The average length of hollow stem is reported for each variety in Table 1.



Figure 1. Ten main wheat stems were split open per replication per variety to estimate first hollow stem for this report, for a total of 40 stems split per variety. Photo by Romulo Lollato, K-State Research and Extension.

Table 1. Length of hollow stem measured on 9, 15, 21, 24, and 31 of March 2022 of 19 wheat

varieties sown mid-September 2021 at the South Central Experiment Field near Hutchinson. The critical FHS length is 1.5 cm (about a half-inch or the diameter of a dime). Value(s) in bold indicate the highest FHS group. Values highlighted in yellow indicate varieties that have already passed the 1.5 cm first hollow stem threshold.

Variety	First hollow stem (cm)				
	3/9/2022	3/15/2022	3/21/2022	3/24/2022	3/29/2022
AP Exp#1	0.2	0.3	1.0	1.6	
AP Roadrunner	0.7	1.0	1.9	.	
AP18AX	0.6	0.6	2.9	.	
AM Cartwright	0.3	0.5	0.8	1.5	
Crescent AX	0.4	0.8	2.1	.	
KS Ahearn	0.3	0.3	0.6	1.2	1.9
KS Hatchett	0.1	0.5	1.0	1.3	2.7
KS13DH0041-25	0.2	0.5	1.2	1.5	
LCS Atomic AX	0.5	0.6	1.7	.	
LCS Chrome	0.2	0.5	1.1	1.4	2.7
LCS Helix AX	0.3	0.4	1.1	1.4	2.6
LCS Julep	0.2	0.3	0.8	1.0	1.4
LCS Photon AX	0.4	0.5	1.3	1.7	
LCS Revere	0.2	0.2	0.5	1.0	1.9
LCS Runner	0.2	0.2	0.8	0.8	1.9
LCS Steel AX	0.3	0.3	1.0	1.4	2.9
LCS Valiant	0.2	0.3	1.1	1.9	
Plains Gold Ray	0.3	0.4	0.9	1.4	2.0
Zenda	0.5	1.2	2.3	.	
Average	0.3	0.5	1.3	1.4	2.2
Min.	0.1	0.2	0.5	0.8	1.4
Max	0.7	1.2	2.9	1.9	2.9

All varieties except for LCS Julep had elongated more than 1.5 cm first hollow stem as of 29 March 2022. We will report first hollow stem early next weeks until all varieties are past this stage.

The intention of this report is to provide producers an update on the progress of first hollow stem development in different wheat varieties. Producers should use this information as a guide, but it is extremely important to monitor FHS from an ungrazed portion of each individual wheat pasture to make the decision of removing cattle from wheat pastures.

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2. Prohibition for Enlist One and Enlist Duo lifted for Kansas

The Enlist One and Enlist Duo labels that were approved in January had several new restrictions, including the prohibition of use in 10 counties in Kansas (Chautauqua, Cherokee, Cowley, Elk, Greenwood, Labette, Montgomery, Neosho, Wilson, and Woodson). Amended supplemental labels were approved on March 29 to allow the use of Enlist One and Enlist Duo in these counties.

Enlist One and Enlist Duo are the only 2,4-D formulations approved for over-the-top herbicide application to Enlist E3 soybean and cotton. Some of the other restrictions that were new to the 2022 labels include using runoff mitigation measures to reach the number of credits needed for your soil type, and application cutoffs of R1 in soybean and first white bloom in cotton.



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3. Weed Management Podcast Wrapping up Third Season

Weed Management Podcast Wrapping up Third Season

Are you interested in keeping up with the latest weed management information? If so, you'll want to add the "War Against Weeds" podcast to your weed management toolbox. This podcast is an outreach effort from Sarah Lancaster, K-State Extension Weed Science Specialist, Mandy Bish, Extension Weed Scientist at the University of Missouri, and Joe Ikely, Extension Weed Scientist at North Dakota State.

There are currently about 40 full-length episodes available, including eleven new episodes that have been uploaded since January. Season three episodes have included topics that range from kochia biology and management to the influence of the Endangered Species Act enforcement on weed management. Episodes remaining for season three include an update on herbicide resistant weed research and a discussion about using drones for weed management. Episodes are approximately 30 minutes long and free to access. They are posted at <https://waragainstweeds.libsyn.com/> in addition to being available on Spotify, iTunes, and Google Podcasts.

If you have any suggestions for future episodes, please let us know!



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4. Outlook for stripe rust in the 2022 Kansas wheat crop

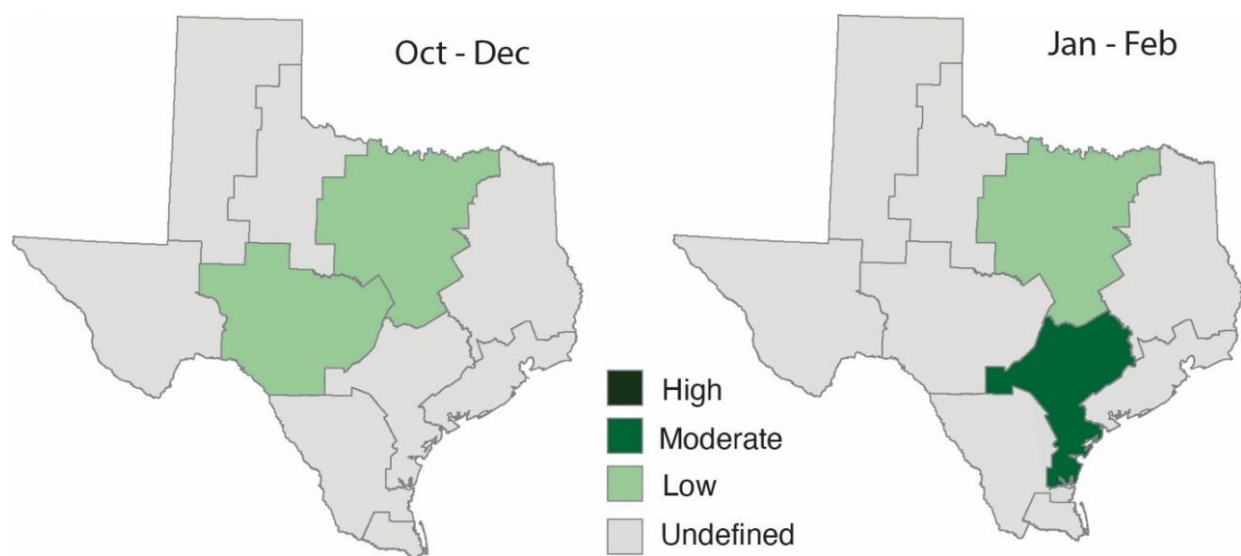
The weather is warming, and wheat has started to green up across the state. With the onset of spring weather, it is time to look at factors that could influence the yield potential of the Kansas wheat crop. At the time of this publication, there have been no reports of stripe rust in Kansas. Bryan Simoneaux and Amir Ibrahim, Texas A&M AgriLife Research, reported yesterday that there is moderate stripe rust pressure in Uvalde, TX but no stripe rust in a natural pressure rust nursery in Castroville, TX. Amanda De Oliveira Silva, Oklahoma State University, reported on March 25th that there have been no observations of stripe rust in Oklahoma.

Looking south helps predict stripe rust outbreaks in Kansas

There are several factors that contribute to the development and severity of stripe rust in our region. Weather conditions in Texas are among the important factors that we consider. K-State research suggests that weather in Texas in both the fall (Oct-Dec) and spring (Jan - Feb) can be used to predict the severity of the disease in Kansas in a given season.

A look at the moisture patterns for 2021-22 indicate that the fall was dry in Texas (first map in Figure 1). This likely slowed the production of rust inoculum. There was slightly more moisture in Texas in the spring (second map in Figure 2) which may be more favorable for disease development. What does that mean for us? We likely will have below average levels of spores that arrive in Kansas during our critical growth stages. It's important to remember that this is just a piece of the puzzle in determining risk. The severity of stripe rust in Kansas after it is first detected will largely be driven by local weather conditions and the varieties that are planted in the state.

We will continue to update on stripe rust occurrence and weather outlook as we move toward critical growth stages for fungicide applications in Kansas over the next several weeks.



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Figure 1. K-State research has shown that annual severity of strip rust outbreaks in Kansas can be predicted by soil moisture in key regions of Texas in both the fall and the early spring. In 2021, soil moisture in Texas was low (indicated by light colors on the map). In the spring, there was moderate soil moisture in one of the key regions of Texas. These maps show soil moisture levels based on November “Palmer Z-Index” provided by NOAA-National Centers for Environmental Information.

Please contact us (andersenk@ksu.edu) if you detect stripe rust in Kansas so we can update regional maps.

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