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Research and Extension

## Extension Agronomy

# eUpdate

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*05/11/2023*

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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## 1. Early-season weed control in cotton

Early-season weed control is especially important in cotton because it can be slow to canopy relative to other crops grown in Kansas, and therefore less competitive early in the growing season (Figure 1).

Weeds compete with cotton for water, nutrients, and sunlight during the growing season and contribute to trash and discoloration of the lint at harvest, resulting in major dockage in quality grades and reduced value of the lint.



**Figure 1. Residual herbicides applied at planting are needed to prevent early-season weed competition in cotton. Photo by Stu Duncan, K-State Research and Extension.**

Tillage is often used to provide a “clean slate” for early-season weed control; however, most Kansas cotton acreage is in conservation tillage systems, so effective herbicides are needed before planting. Glyphosate is often used in burndown herbicide applications, in combination with other products. Low rates of flumioxazin (Valor, others) can be applied 14 to 30 days before planting and have some residual activity. Paraquat (Gramoxone, others) and glufosinate (Liberty, others), which only control actively growing weeds, are also effective for pre-plant burndown herbicide applications. A newer herbicide labeled for burndown applications in cotton is tiafenacil (Reviton). It is a Group 14 herbicide applied 7 to 14 days before planting at 1 to 3 fluid ounces per acre and works best when applied with glyphosate for grass control.

If dicamba-resistant cotton is planted, approved dicamba formulations (XtendiMax, Engenia, or Tavium) can be used in a burndown program with no waiting period before planting. There is a 21- to 28-day waiting period if non-dicamba-resistant cotton is planted and/or other labeled dicamba formulations are used. Similarly, the 2,4-D formulations Enlist One and Enlist Duo may be applied pre-plant with no waiting period in 2,4-D-resistant cotton, but there is a 30-day waiting period if

non-2,4-D-resistant cotton and/or other labeled 2,4-D formulations are used.

Residual herbicides applied at planting are the foundation of any good weed management program. Not only are they necessary to prevent yield loss, they are also recommended to manage or delay the development of herbicide-resistant weed populations. Some effective residual herbicides for early-season use in cotton include Group 15 herbicides like acetochlor (Warrant, others), S-metolachlor (Dual, others), dimethenamid-P (Outlook), and pyroxasulfone (Zidua). These herbicides only control weeds that have not yet germinated and they require about ½ inch or more of rainfall for maximum activity. In addition to broadcast applications, pyroxasulfone (Zidua) can be impregnated on dry fertilizer and applied either preemergence or postemergence to cotton. This could be used as an opportunity to both extend residual herbicide activity as well as split applications of nitrogen to help manage plant growth in irrigated production systems. Group 5 herbicides like fluometuron (Cotoran), and prometryn (Caparol) do not have this requirement. However, these herbicides have some limitations regarding rotation restrictions to crops like corn, grain sorghum, and wheat. Similarly, pyriithiobac-sodium (Staple) will prevent rotation to grain sorghum in the following year. This restriction and the prevalence of ALS-resistant weeds have resulted in little Staple use in Kansas.

Layered residual herbicides can be especially important in cotton because it is slow to canopy (Figure 2). Group 15 herbicides can also be applied over the top of cotton if the maximum application rate for the season is not exceeded at planting. Post-emergence applications of labeled dicamba formulations (XtendiMax, Engenia) in dicamba-resistant varieties can also provide some residual control without the requirement for activating rainfall. It is important for these, and all herbicide applications to be made when cotton is at a growth stage allowed on the herbicide label.



**Figure 2. Residual herbicides applied post-emergence prevent late-season weed competition**

**in cotton. Photo by Stu Duncan, K-State Research and Extension.**

For more detailed information, see the “2023 Chemical Weed Control for Field Crops, Pastures, and Noncropland” guide at <https://www.bookstore.ksre.ksu.edu/pubs/CHEMWEEDGUIDE.pdf> or check with your local K-State Research and Extension office for a paper copy.

*The use of trade names is for clarity to readers and does not imply endorsement of a particular product, nor does exclusion imply non-approval. Always consult the herbicide label for the most current use requirements.*

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## 2. Kansas wheat disease update - May 11, 2023

Stripe rust was detected this week in irrigated wheat in Edwards County, Kansas. This is the first report that we've received in the state this season. Extremely dry conditions have remained unfavorable for stripe rust development. This report is much later than the first detections in previous years. Late arrival, dry conditions, and low levels of disease in Texas and Oklahoma make it unlikely that stripe rust will gain traction in the state this year. Although we have been scouting intensively, leaf rust has not yet been reported in the state.



**Figure 1. Classic symptoms of stripe rust. Please note that this is not a photo taken during this season. Photo by Kelsey Andersen Onofre, Department of Plant Pathology, K-State Research**

## and Extension.

Recent rain showers in some areas have led to low levels of tan spot (Figure 2) showing up in the state, particularly in wheat-on-wheat fields. Observed pressure has been low and not affecting the flag leaves.



**Figure 2. Low levels of tan spot have shown up sporadically throughout the state.**

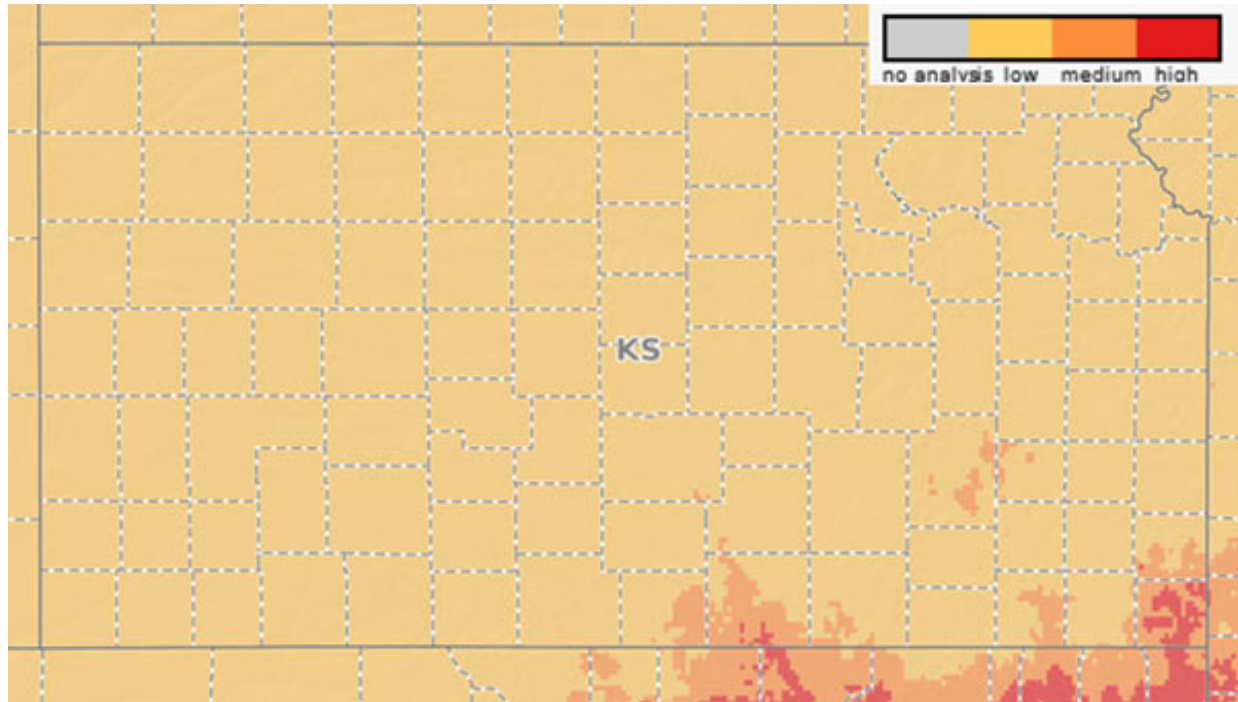
We have been monitoring the risk for *Fusarium* head blight (scab) as the crop moves through flowering in the state. There is slightly elevated risk in some south central and southeastern counties (Figure 3), although these parts of the state may be past the critical stages for infection. As a reminder, the wheat crop is most susceptible to scab during flowering (when yellow anthers are present). Early flowering (Feekes 10.5.1) is the optimal timing for a scab fungicide application. We will continue to report risk as the rest of the state moves through the flowering growth stage.

If you are considering a fungicide application for scab, it may be a good idea to prioritize fields with yield potential greater than 40 bu/acre, under irrigation, or fields being used for seed production. With much of the wheat crop this season in poor condition, many fields will not meet these conditions.

Fungicides such as Prosaro, Caramba, Proline, or Miravis Ace are known to suppress scab (see a more complete list here: <https://bookstore.ksre.ksu.edu/pubs/ep130.pdf>). Other fungicides are not labeled

or not recommended for scab control. These fungicides are most effective against scab when applied at early flowering (Feekes 10.5.1), but can provide protection even when applied later in the flowering window. It is important to pay attention to pre-harvest intervals at this point of the season and follow guidelines provided on product labels. The products listed above have either a 30-day pre-harvest interval (cannot be applied within 30 days of harvest) or cannot be applied after Feekes 10.5.4 (end of flowering, watery ripe growth stage).

It is important to remember that early flag-leaf fungicide applications will have little to no effect on scab.



**Figure 3. Fusarium head blight (Scab) risk forecast for the next 6 days after May 11 according to [wheatcab.psu.edu](http://wheatcab.psu.edu). This model is calibrated for very susceptible varieties, which should be prioritized for a fungicide application. Yellow indicates low risk, while red indicates elevated risk.**

Please contact us if you detect stripe or leaf rust so we can update regional risk maps.

Kelsey Andersen Onofre, Extension Wheat Pathologist  
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### 3. National Wheat Yield Contest - Deadline is May 15

Every year, the National Wheat Foundation promotes a National Wheat Yield Contest, with winners coming from many states and, in many cases, from Kansas (Figure 1).

Central Plains growers are enduring very tough conditions during the season. While at first, this may make you think that with these drought conditions, your wheat will never compete in a yield contest. In fact, these conditions may increase the chances of a given field winning within some categories of the contest. This is because the contest is designed to recognize not only yield but also yield over county averages. Thus, some lucky fields that received some rain when the majority of the county did not may be good candidates to win this category – should the management be appropriate.



**Figure 1. Field of the white winter wheat variety Joe near Leoti, KS, that won state and national wheat yield contest in 2016. Growers include Alec, Ken, Matt, and Rick Horton. Photo by Romulo Lollato.**

Last year, Brett Oelke from Hoxie, Kansas, was a national winner in the “percent over county” category (Figure 2). Brett had a later-maturing variety and was able to take advantage of late May

rains. Just like all contest winners, Brett received a trip to the Commodity Classic and was recognized at the Winner's Reception. His wheat was also recognized for top quality ensuring that he received a \$250 gift card. Moreover, Brett also was selected out of a drawing of the hard wheat winners to receive a hand-held GrainSense analyzer.



**Figure 2. Brett Oelke, from Hoxie, Kansas received the recognition as a National Wheat Yield Contest winner in the percent over county category. Photo by Anne Osborne.**

Entering is easy and must be done by May 15 for winter wheat. You only need a 5-acre plot to enter. Each entry costs \$100, but we have several partners with vouchers you can use to enter at no cost to you. You must be a current member of the Kansas Wheat Commission or your state's wheat grower organization.

Even if you are not sure how your winter wheat will finish, please enter by May 15. No late entries will be accepted. Go to [www.yieldcontest.wheatfoundation.org](http://www.yieldcontest.wheatfoundation.org) to enter and read the complete rules.

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## 4. Kansas Ag-Climate Update for April 2023

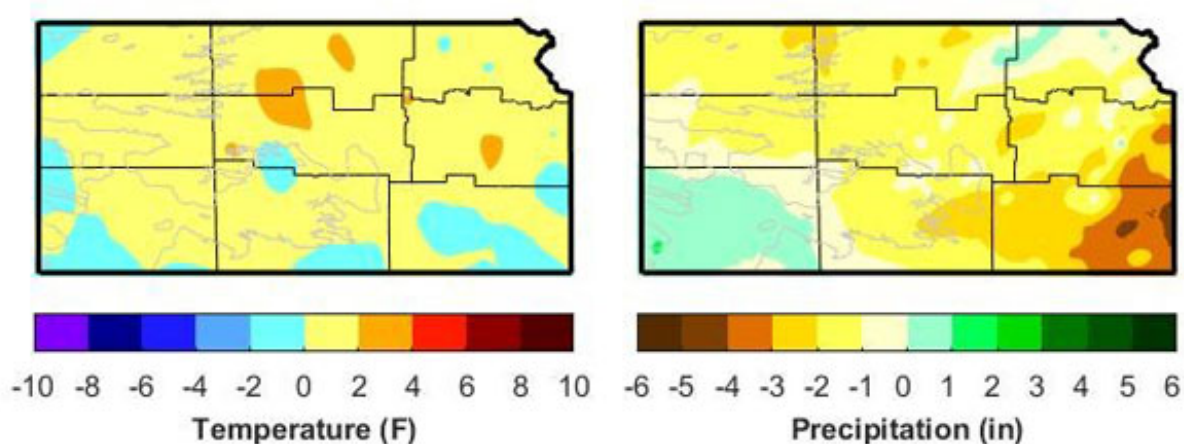
The Kansas Ag-Climate Update is a joint effort between our climate and extension specialists. Every month the update includes a brief summary of that month, agronomic impacts, relevant maps and graphs, 1-month temperature, and precipitation outlooks, monthly extremes, and notable highlights.

### April 2023: Severe to Exceptional Drought Continues across the State

The average temperature for April was 54.7°F, or 0.8°F above normal. This ranked as the 49th warmest April out of 129 years of records, dating back to 1895. All divisions were above normal, with anomalies ranging from +0.3°F (southwest) to +1.4°F (central and east central).

The average precipitation for April was 1.32 inches, which was 1.36 inches below normal. This ranked as the 17th driest April on record. Southwest Kansas was the only division with above-normal precipitation (1.92 inches, 115% of normal); all other divisions were below normal. Both northwest (0.42 inches) and southeast Kansas (1.26 inches) had their 7th driest April on record. North central, central, and east central Kansas all experienced a top 15 driest April.

The US Drought Monitor Update issued on April 27 listed 46% of Kansas in the most severe drought category (D4), up 10% from last month. Only 11% of the state is classified as drought-free, a decrease of 5% from March.



**Figure 1. Departures from normal temperature (°F) and precipitation (inches) for April 2023.**

View the entire April 2023 Ag-Climate Update, including the accompanying maps and graphics (not shown in this eUpdate article), at <http://climate.k-state.edu/ag/updates/>

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## 5. 2023 Wheat Plot Tours - May 12 through May 26

The Department of Agronomy and K-State Research and Extension will host several winter wheat variety plot tours in different regions of the state, starting May 10, 2023. Make plans to attend a plot tour near you to see and learn about the newest available and upcoming wheat varieties, their agronomics, and their disease reactions. A list of plot tour dates, time, and directions was published in a previous eUpdate. This article contains the upcoming plot tours for May 12 through May 26. Plots highlighted in red are still tentative. This list will be continuously updated in the coming weeks.

Romulo Lollato, Extension Wheat Specialist, [lolato@ksu.edu](mailto:lolato@ksu.edu)

Date	Time	County	Location	Directions	Agent/Contact
5/12	CANCELED	Edwards	Belpre	CANCELED	Marty Gleason/Jean Huntley
5/12	12:00 PM	Kingman	Kingman	7681 SW 80 Ave, Kingman, KS 67068	Melissa Thimesch
5/15				Wheat Quality Tour	
5/16				Wheat Quality Tour	
5/17				Wheat Quality Tour	
5/18	8:30 AM	Barton	Hoisington	525 NW 190 Rd	Stacy Campbell
5/18	5:00 PM	Sumner	Conway Springs	Plot directions: 1/4 mile east of Tom Pauly Seeds (922 140th Ave N) on SE corner of intersection. Meal to follow the plot at the headquarters.	Randy Hein
5/19	9:00 AM	McPherson	Marquette	Patrick Plot- north side of Highway #4 in Marquette Rd at 10:00am	Shad Marston
5/19	12:00 PM	McPherson	Moundridge	Lunch sponsored by MKC held at noon at the Black Kettle Park in Moundridge. Galle Plot at 1:00 pm just west of the corner of 23rd and Cheyenne.	Shad Marston
5/19	3:30 PM	McPherson	Inman	Schroeder Farm test plot between 5th and 4th Ave on Cheyenne Road.	Shad Marston
5/23	8:00 AM	Labette	Parsons	Southeast Extension-Research Center - Parsons	James Coover
5/23	8:15 AM	Sedgwick	Andale	1/2 mile south of intersection 247th St W & 21st St N	Jeff Seiler
5/23	10:30 AM	Sedgwick	Clearwater	South of Clearwater 1 mile west of 151st St W on 119th St S.	Jeff Seiler
5/23	5:00 PM	Sumner	Belle Plaine	Program to follow meal. Meal location—1459 E. 60th Avenue North Southeast of Belle Plaine. Plot location— 1/2 mile east from meal.	Randy Hein
5/24	12:00 PM	Harvey	Newton	Lunch at Camp Hawk. From camp hawk the plot is 1.5 miles west on SW	Ryan Flaming

Kansas State University Department of Agronomy

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[www.agronomy.ksu.edu](http://www.agronomy.ksu.edu) | [www.facebook.com/KState.Agron](https://www.facebook.com/KState.Agron) | [www.twitter.com/KStateAgron](https://www.twitter.com/KStateAgron)

				36th St. It is at the corner of s west rd. and SW 36th street.	
5/24	5:00 PM	Sumner	Caldwell	Program to follow meal. Meal Location—South side of highway from plot. Plot Location — From Caldwell, 1 1/2 miles East of Railroad Tracks, on Highway 81, North side of the road	Randy Hein
5/24	6:30 PM	Riley	Manhattan	SAVE Farm (9680 N. 52nd Street, Manhattan, KS 66503)	Greg McClure
5/25	9:30 AM	Ellis	Hays	Wheat Rx Field day at the K-State's Agricultural Research Center (1232 240th Ave, Hays, KS 67601). RSVP Required.	Romulo Lollato
5/25	3:00 PM	Walnut Creek	Rush Co (LaCrosse)	Corner of County Road 40 and Avenue N (From LaCrosse – 11 miles west and 2 miles south)	Lacey Noterman
5/25	6:00 PM	Walnut Creek	Lane (Dighton)	7 miles west from Dighton to Eagle Road. 2 miles south to west road 130 the 200 yards west toward Ehmke farmstead, east of the scales. On the south side of the road.	Lacey Noterman
5/25	CANCELED	Ellsworth	Lorraine	CANCELED (crop termination)	Craig Dinkel
5/25	CANCELED	Russell	Russell	CANCELED (crop termination)	Craig Dinkel
5/26	8:30 AM	Saline	Solomon	Ryan family farm: 3 miles west of Solomon on Old Hwy 40 and 2.5 miles S on Gypsum Valley Road	Jay Wisbey
5/26	11:00 AM	Saline	Mentor	Isaacson Family Farm, West of Mentor on Old 81 Highway	Jay Wisbey
5/26	3:00 PM	Cloud	Minneapolis	Tim and Ryan Myers, 1.5 Miles West of K-106 Highway on Justice Road	Jay Wisbey

## 6. In-Depth Wheat Diagnostic School - June 2

The Department of Agronomy and K-State Research and Extension will host an In-Depth Wheat Diagnostic School on June 2 from 8:00 am to 3:50 pm at the K-State North Central Experiment Field (2 miles west of Belleville on Hwy 36).

This event will offer six CEU CCA and two 1A PM credits by providing hands-on training on diagnosing wheat production problems in a number of different areas listed below.

- Wheat Growth and Development (Romulo Lollato)
- Wheat Diseases ID and Management (Kelsey Andersen Onofre)
- Diagnosing Wheat Fertility Problems (Dorivar Ruiz Diaz and Nathan Mueller)
- Weed Control and Application Problems (Sarah Lancaster)
- Forage and Cover Crop Options (John Holman)
- Wheat breeding technologies (Allan Fritz)

The cost to attend this training is \$90 before May 19 and \$120 after, including walk-ins. A light breakfast and lunch are included with registration.

Register online: <https://commerce.cashnet.com/AGRONKSU>

For program or registration questions, please contact Romulo Lollato at [lolato@ksu.edu](mailto:lolato@ksu.edu) or 785-477-4644.





# 2023 In-Depth Wheat Diagnostic School

K-State Research and Extension

8:00 a.m. to 3:50 p.m. June 2nd  
K-State North Central Experiment Field  
2 miles W of Belleville on Hwy 36, KS

## Topics

- Wheat Growth and Development
- Wheat Diseases ID and Management
- Diagnosing Wheat Fertility Problems
- Weed Control and Application Problems
- Forage and Cover Crop Options
- Wheat breeding technologies

## Speakers

- Romulo Lollato
- Kelsey Andersen Onofre
- Dorivar Ruiz Diaz
- Nathan Mueller (UNL)
- Sarah Lancaster
- John Holman
- Allan K. Fritz

This event will offer six CCA CEUs and two Commercial Applicator credits.

Register online: <https://commerce.cashnet.com/AGRONKSU>

For program or registration questions, please contact Romulo Lollato at [lollato@ksu.edu](mailto:lollato@ksu.edu) or 785-477-4644.

### Cost:

\$90 before May 19; \$120 after May 19 and walk-ins.

Light breakfast and lunch are included with registration and will be provided.

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