



Extension Agronomy

eUpdate

01/28/2021

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. Kansas winter wheat disease summary for 2020

In general, wheat diseases had a lower-than-average impact on yields in 2020. The most widespread disease was stripe rust (Figure 1), affecting most wheat-producing counties across the state.

Although stripe rust was found in many fields, levels remained trace in most areas. Stripe rust was first reported in Kansas in late April in Sedgwick, Reno, and Pratt counties. These first reports were two weeks later than in previous years, which may have contributed to lower overall levels of disease.



Figure 1. Wheat leaves with signs of stripe rust. This vertical striping pattern is typically not present in younger plants. Photo: K. Andersen Onofre, K-State Research and Extension.

After harvest, we received many reports of common bunt (Figure 2) throughout south central Kansas. There were some reports of price discounts. Levels of this disease were estimated to be the highest in the state in the last decade. Common bunt spores survive on the surface of seed, and sometimes in the soil, and infect wheat during emergence. Symptoms are typically not visible until harvest.



Figure 2. Wheat infected with the common bunt, also known as “stinking smut”. Black spores survive on seed and infect emerging plants. Photo: K. Andersen Onofre, K-State Research and Extension.

Loose smut (Figure 3) was also more widespread in 2020 than in previous years. High levels of loose smut were likely due to cool, wet conditions during flowering in 2019. Yield loss due to loose smut is directly proportional to the number of infected heads in a given field. Fungicide seed treatments or the use of certified seed are good options to manage loose smut.



Figure 3. Loose smut in a commercial field in north central Kansas in 2020. Photo by K. Andersen Onofre, K-State Research and Extension.

Fusarium head blight (Figure 4) was present throughout central and southeast Kansas, although levels were lower than in previous years. Lower-than-predicted incidence of Fusarium head blight in 2020 may have been due an extended period of dry weather after flowering.



Figure 4. Typical symptoms of Fusarium head blight. Photo taken on June 2, 2020 in Marion County, Kansas. Photo: K. Andersen Onofre, K-State Research and Extension.

The complex of wheat diseases that we sometimes refer to ‘leaf spotting diseases’, including Septoria leaf spot, tan spot, and Stagonospora leaf blotch, were present in pockets throughout central Kansas (Figure 5). Fields with the most severe infections in 2020 tended to have high levels of wheat residue and high moisture prior to flowering.



Figure 5. Tan spots symptoms appear similar to other foliar leaf diseases, such as *Stagonospora* leaf blotch. Photo: K. Andersen Onofre, K-State Research and Extension.

There were also several reports of wheat streak mosaic virus (Figure 6) in 2020, mostly in the central and western portions of the state, although levels were lower than in recent years.



Figure 6. Plants showing characteristic symptoms of wheat streak mosaic virus in north central Kansas. Photo: K. Andersen Onofre, K-State Research and Extension.

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2. Updated 2021 spring wildfire outlook for Kansas

Highlights

- A wet January will transition to a drier late February and March.
- South central to northwest Kansas have above-normal grass loading from 2020.
- Expect an increase in wildfire potential with a large fire concern from dry frontal passages and growing drought into April.
- Kansas fire season (Feb - Apr) is expected to be slightly above average with an increase in large fires than observed the last two spring seasons.

Change is coming

Despite a wet January thus far for a majority of Kansas (Figure 1), that doesn't exactly imply what is in the future. January typically averages the least amount of precipitation of any month. Therefore, it is easy for one or two storms to skew statistics. While there is also snow on the ground across much of the state as of this writing, the moisture content of the snow is rather low and will translate into only a few tenths of an inch when melted. Currently, forecasts after the first full week of February are suggesting a large pattern change will occur into March. This pattern will be more La Niña-like and conducive to dry frontal passages. In addition, precipitation trends are expected to swing below normal through most of spring, a time of more critical importance for annual moisture totals.

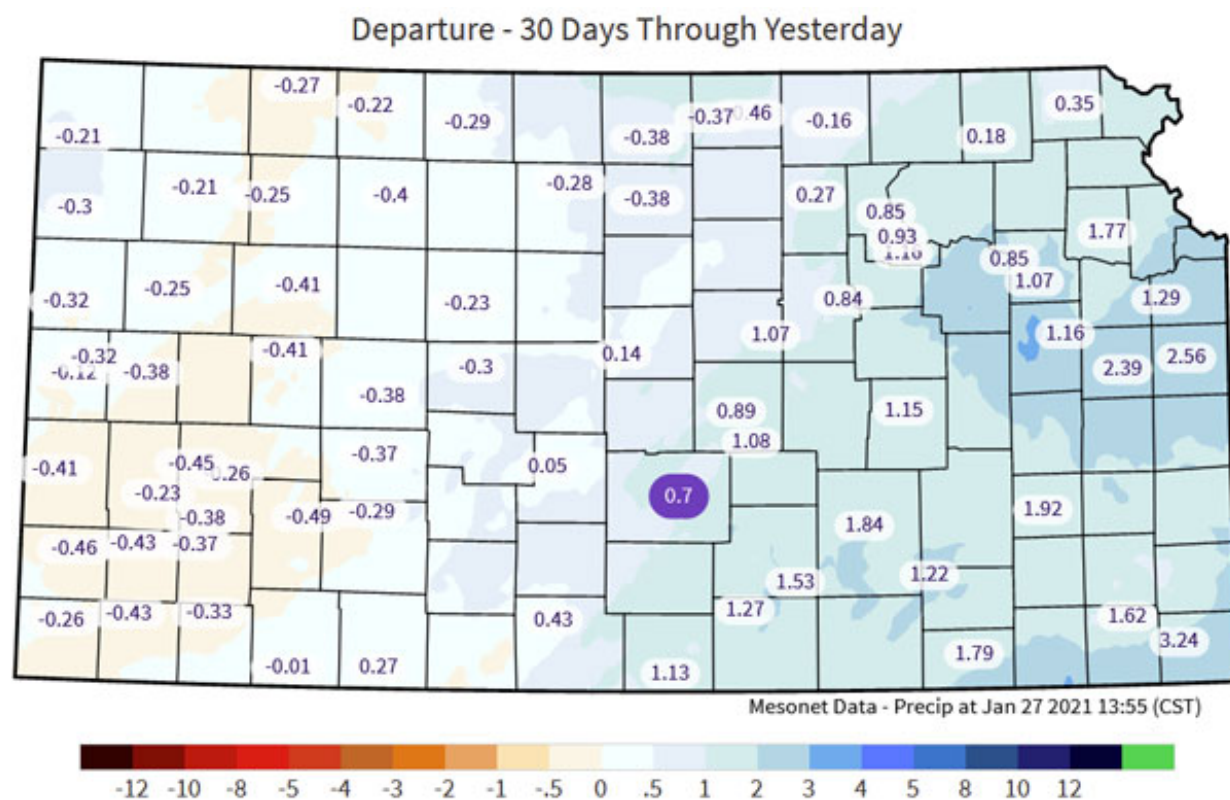


Figure 1. 30-day departure from normal precipitation. Data available here:

Poor timing

The pattern transition to warmer and drier with increased frontal passages will coincide with what we typically consider the fire season in Kansas. An increase of fronts typically results in an uptick of Kansas wind events. Most historically large fires (and mega-fires) in the state have occurred with strong frontal systems. In combination with a higher-than-normal fuel load (which has already resulted in a few large fires this winter), this is likely to increase fire concerns through March. Another concern is the current ongoing drought in much of western Kansas. Recent moisture has not offset the current drought and has had little impact on heavier fuel models (timber, cedar, etc.). With forecast models still suggesting drier-than-normal conditions through the spring (Figure 2), these conditions are expected to expand eastward once again.

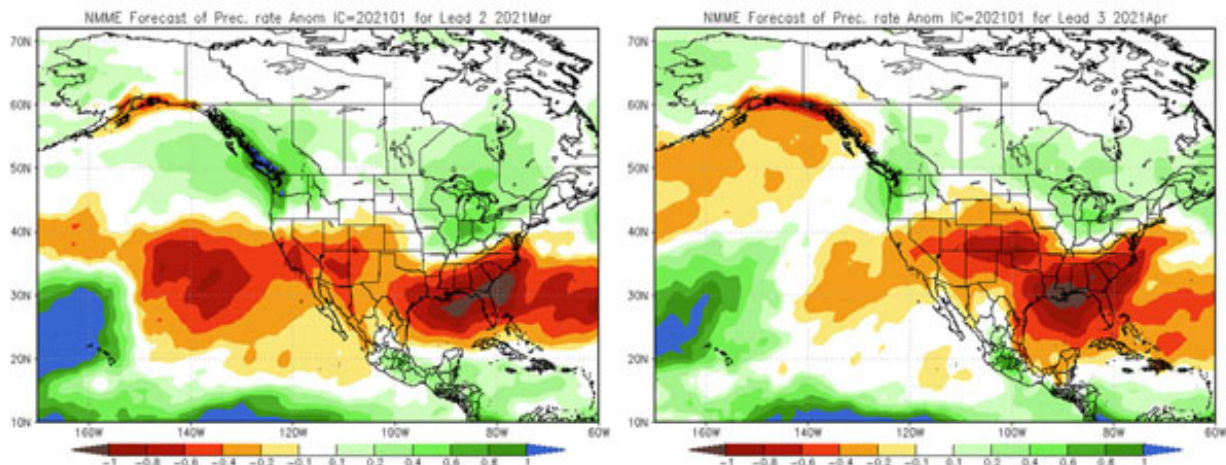


Figure 2. Precipitation rate anomalies for March (left) and April (right) via NOAA NMME (<https://www.cpc.ncep.noaa.gov/products/NMME/monanom.shtml>).

Ending fire season

The duration of fire season is typically dictated by several factors consisting of precipitation, temperature, time of the year, and less wind events. This past year, the fire season never really stopped, with large fires reported every month during the winter. Spring, a time of transition between winter and summer, can almost guarantee strong frontal systems and (usually) the windiest time of the year. We usually focus on precipitation events enhancing grass green-up and preventing fire starts. It may seem promising that in La Niña, there is typically an increase in severe weather with both hail and tornadoes (Figure 3). While an increase in moisture usually occurs with severe weather - it also represents the strength of storm systems. A stronger storm system suggests increased wind potential and resulting wildfire potential enhanced to the west of the thunderstorms. Precipitation timing is critical and if consecutive storm systems can impact the region with widespread moisture

mid-to-late March, it could drastically enhance green-up and aid in diminishing wildfire concerns. However, predicting that type of system this far in advance is a challenge. Currently, we are focusing on the increased potential of wind, dry conditions and warmer-than-normal temperatures that will result in increased wildfire potential (Figure 4). It is very likely that these conditions will occur before consecutive wetting rains can occur with green-up and time of the year (late March to early April).

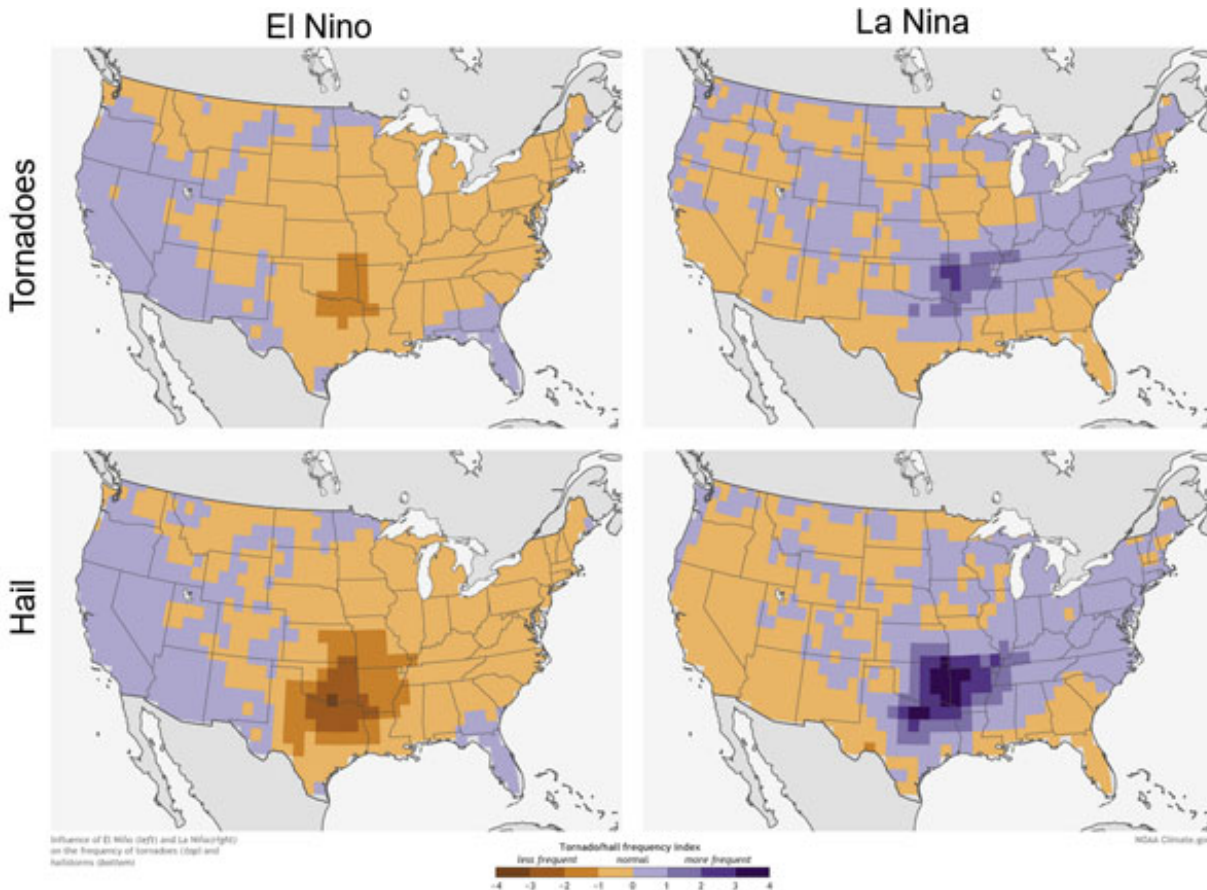


Figure 3. Frequency of tornadoes (top) and hail (bottom) during El Niño (left) and La Niña (right) via NOAA

(<https://www.climate.gov/news-features/featured-images/el-ni%C3%B1o-and-la-ni%C3%B1a-affect-spring-tornadoes-and-hailstorms>).

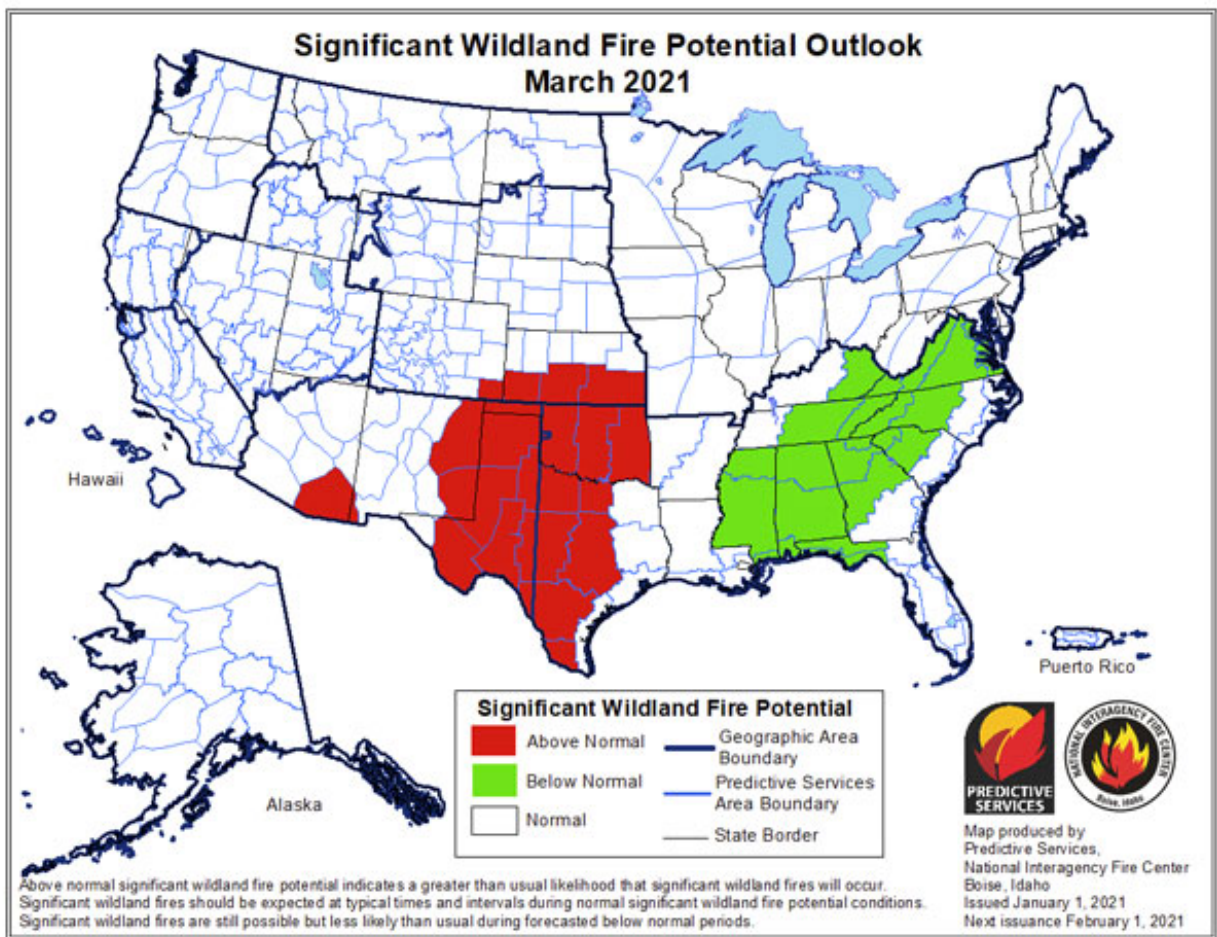


Figure 4. Significant wildland fire potential outlook from National Interagency Fire Center Predictive Services (<https://www.predictiveservices.nifc.gov/outlooks>).

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3. New Crop Talk webinar series for northwest and north central Kansas



A new series of hour-long webinars is set to begin in early February. This series will be focused on agronomic topics targeted for northwest and north central Kansas. Topics range from soil fertility, weed management, insect management, and dryland corn dynamics. Continuing education credits have been applied for and will vary based on the subject area of each webinar. Each webinar will begin at 10:30 am (CST) and last until 11:30 am, beginning with the first one on Tuesday, February 2.

Upon registration, participants will receive an email with instructions to attend via Zoom or YouTube. These webinars are open to all and there is no cost. Visit the K-State Northwest Research and Extension Center's website to register: <https://www.northwest.k-state.edu/events/crop-talk-series>.

Please contact any local KSRE extension office in north central or northwest Kansas for any questions.

A complete list of webinars, with dates, topics, and speakers is detailed below.

February 2 - Soil Fertility Questions from Growers for the 2021 Season (focused for Northwest Kansas)

Dorivar Ruiz Diaz, K-State Soil Fertility Specialist

(1 Soil Fertility CCA Credit)

February 3 - Soil Fertility Questions from Growers for the 2021 Season (focused for North Central Kansas)

Dorivar Ruiz Diaz, K-State Soil Fertility Specialist

(1 Soil Fertility CCA Credit)

February 9 - Weed Management and that Pesky Palmer Amaranth (focused in Northwest Kansas)

Sarah Lancaster, K-State Weed Scientist

Vipan Kumar, K-State Weed Scientist

(1 Integrated Pest Mgmt CCA Credit)

February 10 - Weed Management and that Pesky Palmer Amaranth (focused in North Central

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Kansas)

Sarah Lancaster, K-State Weed Scientist

Vipan Kumar, K-State Weed Scientist

(1 Integrated Pest Mgmt CCA Credit)

February 16 - **Corn Insect Resistance: Rootworm & Western Bean Cutworm**

Julie Peterson, UNL Entomologist

(1 Integrated Pest Mgmt CCA Credit)

February 23 - **Grain Sorghum Weed Control: Start Clean, Stay Clean**

Sarah Lancaster, K-State Weed Scientist

(1 Integrated Pest Mgmt CCA Credit)

February 24 - **Sorghum Insects: Aphids, Headworms and Chinch Bugs.. Oh My!**

J.P. Michaud, K-State Entomologist

(1 Integrated Pest Mgmt CCA Credit)

March 2 - **Alfalfa Management and Weevil Update**

Romulo Lollato - Wheat & Forage Specialist

Anthony Zukoff, K-State Extension Entomology Associate

(1 Crop Mgmt CCA Credit)

March 9 - **Dryland Corn Dynamics**

Lucas Haag, K-State NW Regional Agronomist

(1 Crop Mgmt CCA Credit)

4. 2021 Kansas Corn School webinar series - Feb. 4 and 11

Kansas Corn is partnering with K-State Research and Extension to offer winter learning sessions for Kansas corn farmers. Due to COVID-19 concerns, the Kansas Corn Management Schools will be held virtually in a series of webinars. There are still two sessions to come in February. Each webinar will start at 7 p.m. and include two presentations with a question-and-answer session. Participants will have the opportunity to hear the latest research and production information and hear updates on markets and corn policy issues. These sessions are free for farmers to attend.

Webinar dates and presentations:

- **Thursday, Feb. 4, 2021**
 - Weed Control, Dr. Sara Lancaster, K-State
 - Planter Technology—Lessons Learned for Corn, Dr. Ajay Sharda, K-State
- **Thursday, Feb. 11, 2021**
 - Markets and Futures Prices, Dr. Dan O'Brien, K-State
 - KCGA Policy Achievements and Ambitions – Josh Roe, Kansas Corn

“Despite today’s current challenges with COVID, participating online provides an opportunity for corn farmers to learn the latest research findings on key topics and what challenges to watch out for in agronomy, markets, and policy,” said Kansas Corn V.P. of Market Development and Policy Josh Roe.

“The schools will cover a number of issues facing corn producers including nutrient management, management practices, weed control, planter technology, markets, and policy. These events have a long-standing tradition and reputation in offering a solid set of topics of great relevancy to our corn growers in Kansas,” said Ignacio Ciampitti, associate professor in the K-State Department of Agronomy.

The webinars are offered at free for growers thanks to support from premier sponsor Pioneer Seeds, and supporting sponsor Compass Minerals. Participants are asked to pre-register online to receive the information and links to the webinar.

Get more information and register online at kscorn.com/cornschooll or by phone by calling Kansas Corn at 785-410-5009.