Issue 1008

K-STATE
Research and Extension

Extension Agronomy

eUpdate

06/13/2024

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. Managing late tillers in wheat as harvest approaches in Kansas

Rainfall and cooler temperatures during the past few weeks have resulted in a flush of late, green tillers in the wheat over much of Kansas (Figure 1). This can create a problem, especially for wheat that is approaching harvest maturity. A question that usually arises when this happens is: **Should I wait to start harvesting until most of the green heads have matured, or start harvesting anyway?**

Figure 1. Wheat plants near Manhattan, KS, showing later-emerged tillers during the 2024 growing season as of June 13. Notice the shorter and later heads in the middle to lower portions of the plants. Photo by Luis Pradella, MS student, K-State Research and Extension.

The answer to this question depends on a number of factors, including:

- How advanced are the main tillers in relation to the late-developed tillers?
- What percent of the total heads in the field are composed of late-emerged heads?
- What will the weather be between now and harvest?

These factors will help define whether late-developed heads can actually contribute significantly to the final yield or whether they will only be a nuisance. For example, if wheat in the most advanced heads is already well into the grain-filling stages of development while many late-produced tillers may still be in the boot, waiting on the late-emerged tillers to harvest will likely not be feasible. Alternatively, in Figure 1, the main tillers are near maturity but still have fairly high moisture content, while the late emerged tillers are already well into the soft dough stages of development with good grain weight potential. Thus, in this case, it likely pays to wait until the late-developed ones are ready to be harvested.

In cases where these tillers don't amount to more than 5% of the total amount of heads in the field, producers should not delay harvest because of the green tillers, as they won't add much to the final yield. Additionally, should the temperatures increase to more normal Kansas grain-filling weather in the near future, these late-developed tillers may be more exposed to heat stress. This would potentially result in lower test weight and shriveled kernels. So, producers should start harvesting as soon as the bulk of the field is ready. With varieties that tend to shatter easily, producers should start harvesting as soon as the field reaches 15% moisture.

If we have another ~2-3 weeks of below-average temperatures and above-average moisture and the green tillers make up for a large number of the heads in the field, waiting to harvest until all heads ripen may be justified—but the chances here are slim. For most cases, it will probably be best to just start harvesting when the majority of heads are ready to go since waiting for the green heads to ripen might lead to the shattering of the more mature heads.

Producers should be aware that the grain in the green heads may cause some storage problems. It's never easy to manage a late flush of green shoots in wheat. Unfortunately, there's no clear-cut answer, nor is there one best management strategy to fit all situations.

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2. Considerations for late-planted soybeans

By early June 2024, more than 75% of soybeans had been planted, and more than half of all soybeans had emerged in Kansas (USDA Kansas Crop Progress and Report Condition, June 10, 2024).

Figure 1. Soybeans planted late (early June) into adequate soil temperature and moisture conditions. Photo by Ignacio A. Ciampitti, K-State Research and Extension.

Planting progress overview

Kansas farmers have been planting soybeans slightly earlier in recent years -- at the rate of about one-third day earlier every year (Figure 2). Statewide, in the past five growing seasons (2017-21), the "50% planting date" mark was achieved between the end of May (for the most recent decade) and the first of June (in the 1980s). The earliest date achieving half of the beans planted was May 12 in 2014, while the largest delay was June 28 in 1982.

Following the latest USDA Crop Progress and Condition report (June 10, 2024), soybean planting progress is above the 71% 5-year average (2019-2023); while emergence (60%) is also ahead of the 53% average.

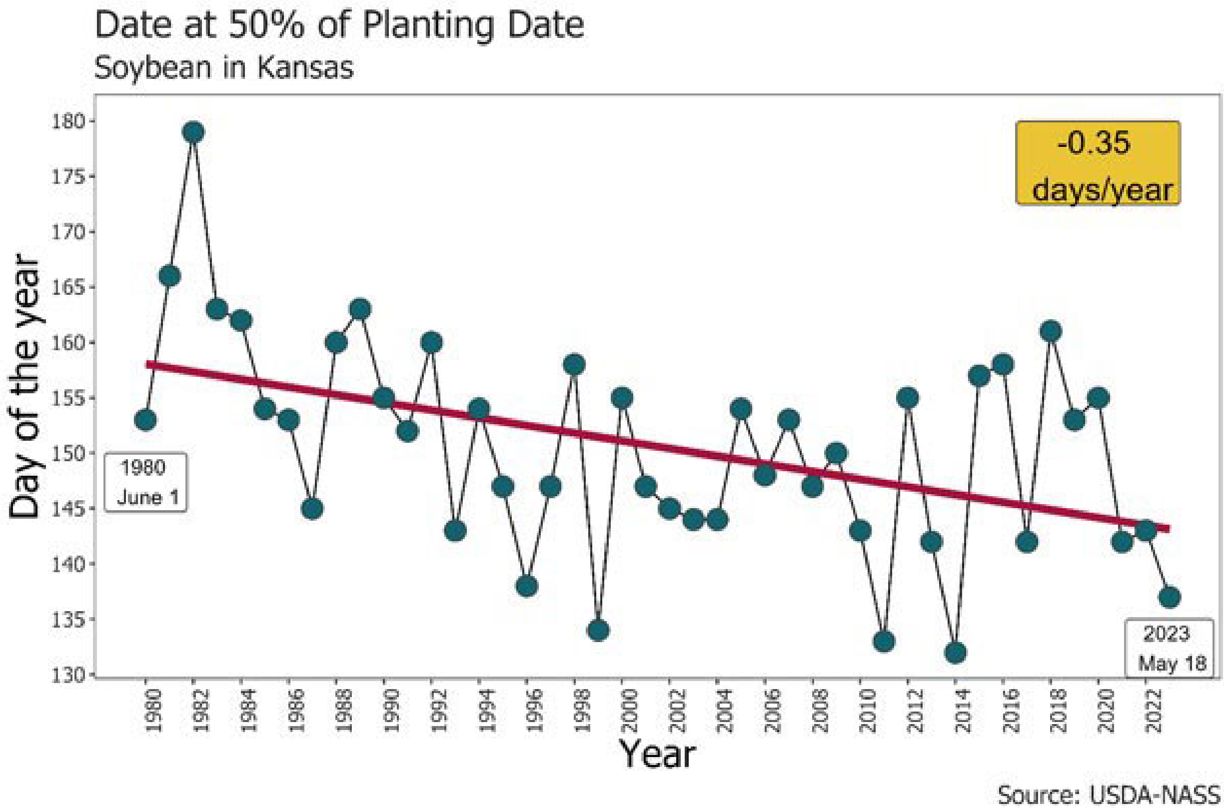


Figure 2. Trend in the date at which 50% of planting progress was achieved for soybean from 1980 to 2023 in Kansas (the last four decades of soybean progress in Kansas). Source: USDA-NASS.

Considerations for Late Planting

Where soybean planting has been delayed (or in double-crop soybean systems), producers should consider a few key management practices. Planting soybeans in the right soil conditions is essential for establishing an adequate soybean canopy and improving the chances of increasing the yield potential.

Planting date and maturity group

By planting in early June, soybeans are expected to bloom and fill seed from mid-August to mid-September, when nights are cooler, and the worst of heat and drought stress is usually over.

From mid-April to mid-July, we may expect maximum soybean yield in Kansas to be reduced by about 0.3 bu/a per day of delay past mid-April, from yield levels of about 80-90 bu/a to ~50 bu/a (Figure 3). On the other hand, the yield variability range is expected to narrow as the planting date is delayed, which may result in improved yield "stability" for late-planted soybeans (although achieving a lower maximum yield). More information related to this topic available at https://eupdate.agronomy.ksu.edu/article/soybean-planting-date-and-maturity-group-selection-585-6

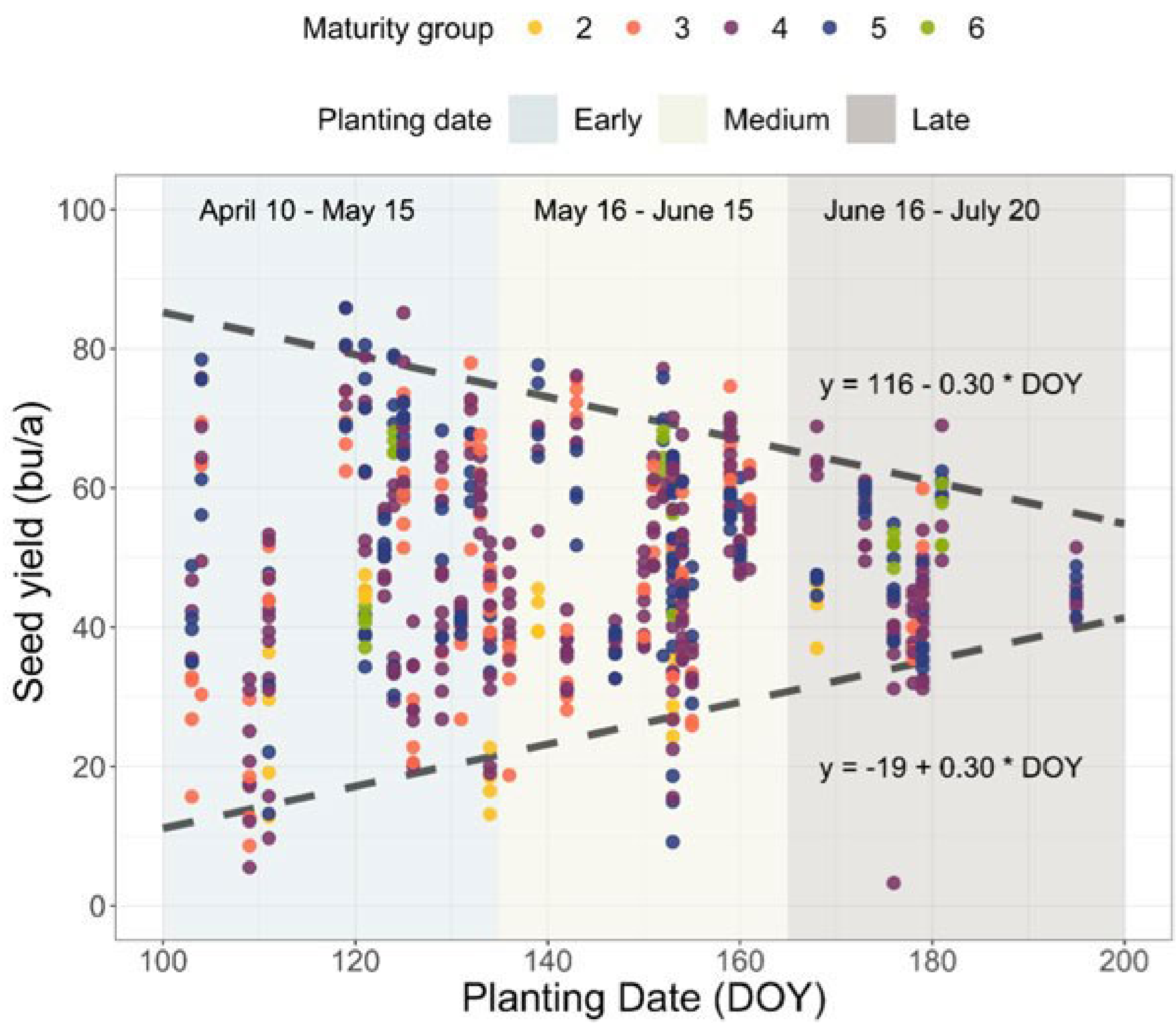


Figure 3. Soybean seed yields as a function of planting date from Early (mid-April to mid-May) to Medium (mid-May to mid-June) to Late (mid-June to mid-July) for a diverse set of maturity groups (from Maturity Group 2 to 6).

Seeding rate and plant density

Increasing the seeding rate of late-planted soybeans by 10-20% compared to the optimal seeding rate can help compensate for the shortened growing conditions. Under normal conditions, the same soybean cultivar planted early in the planting window will develop nearly 50% more productive nodes than when planted in late June: 19-25 nodes when planted early vs. 13-16 nodes when planted late.

Soybean emergence could be delayed or compromised where there has been an excessive amount of rainfall in recent weeks. Replanting soybeans should be reserved only for exceptional cases where the stand counts and the uniformity look seriously affected. Otherwise, the cost of replanting is unlikely to pay off. Initial assessments should be done by the cotyledon stage (VC) and a week or so after the initial damage to assess the overall condition of plants and potential issues related to lack of uniformity, which could be a problem when stands are severely reduced.

Ensuring final plant populations are not too far from the optimal levels is crucial. In medium and high-yield environments, yields begin to decline at stands of less than ~100,000 plants per acre. In low-yield environments, however, yields may begin to decline at stands of less than ~125,000 plants per acre. At optimal planting dates, yields can be reduced by up to 15% with a stand of 80,000 plants per acre. This may be exacerbated under late planting dates due to the reduced capacity of the plants to produce compensatory yield growth, for example via branches.

For more on this topic, check this our eUpdate article on "[Adjusting seeding rates for soybeans]"

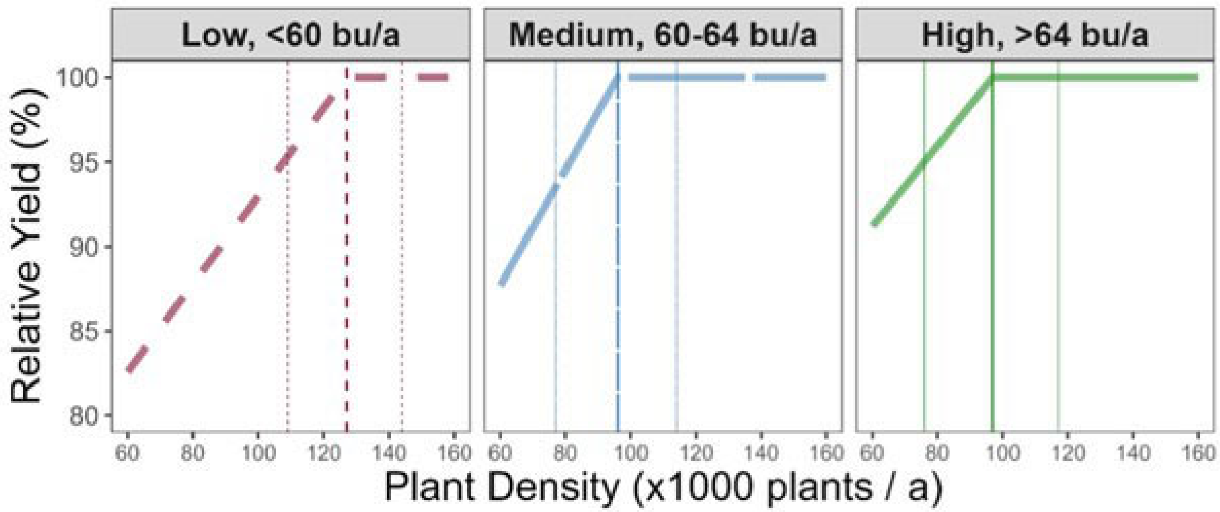


Figure 4. Expected soybean relative yield (%) with respect to the optimal plant density by yield environment. Vertical lines indicate expected optimal plant densities (Low: 127,000 plants/a; Medium: 96,000 plants/a; High: 97,000 plants/a) and their corresponding uncertainty (95% intervals). Adapted from Carciochi et al. (2018).

Row spacing

Information on late-planted soybeans across multiple row spacing suggests that narrow rows (e.g. 7" or 15" vs. 30") can hasten canopy closure, increasing season-long light interception, weed suppression, and potentially improving biomass and final yield. The likelihood of a positive yield response to narrow rows increases as the yield environment lowers (Figure 5), for example with delayed planting. For more details on this topic, check our eUpdate article on [soybean row spacing].

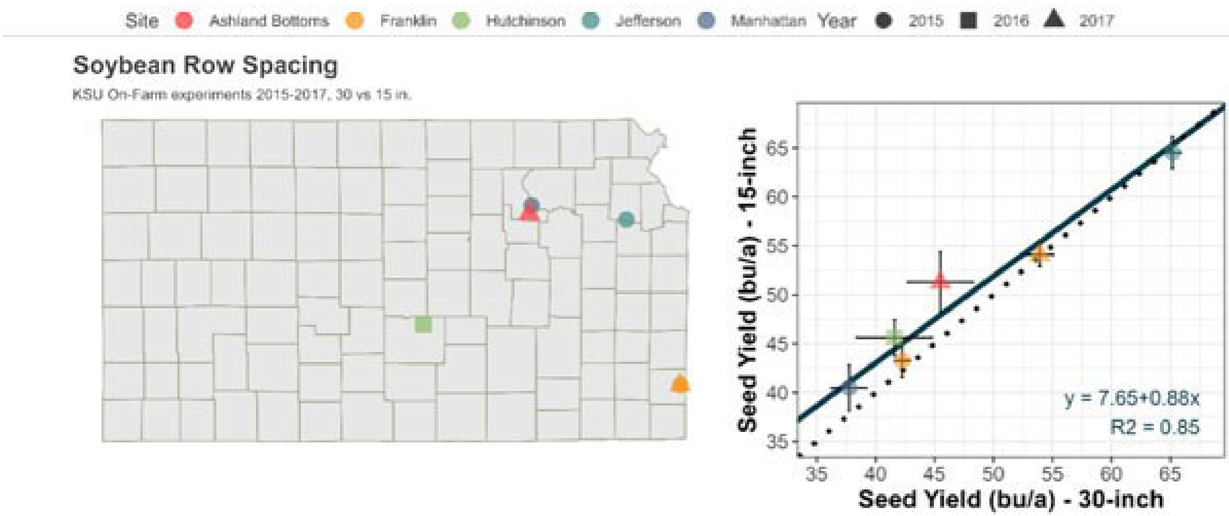
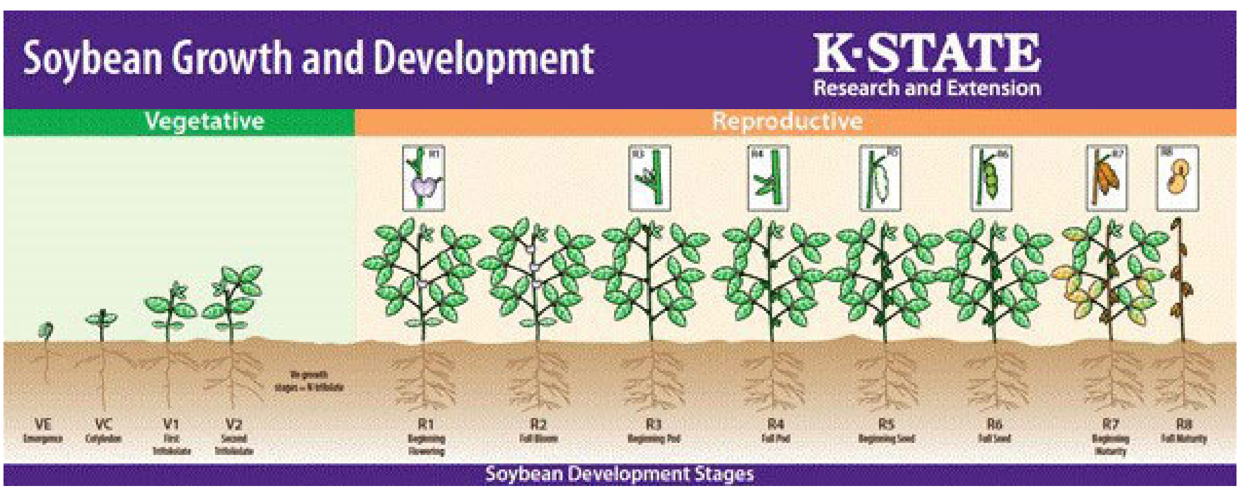


Figure 5. On-farm experiments on soybean row spacing comparing conventional (30-inch) vs. narrow rows (15-inch). Collaborators: Kansas State University, United Soybean Board, North Central Soybean Research Program.

Finally, properly identifying soybean growth stages can make a difference in yield. Consult our soybean growth and development chart at:

https://www.bookstore.ksre.ksu.edu/pubs/MF3339.pdf



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3. Herbicide applications and high temperatures

Warmer temperatures are in the forecast for the latter part of June across Kansas. For July, the Climate Prediction Center is calling for an increased probability of warmer-than-normal temperatures statewide. If you are planning herbicide applications, here are some things to consider when applying herbicides during hot weather.

1. **Heat or drought stress slows plant growth processes.** This is especially important for systemic herbicides such as glyphosate and grass-killing herbicides like clethodim (Select) or quizalofop (Assure). As temperatures increase above 85°F, many plants begin to slow or stop metabolic processes that move herbicides throughout the plant, resulting in decreased weed control. Notable exceptions to this rule are HPPD-inhibiting herbicides like Callisto or Balance Flexx. Palmer amaranth plants are able to overcome applications of these herbicides when applied at high temperatures (90°F and greater) due to faster metabolism.

Management: In general, applying systemic herbicides early in the morning, after plants have had a chance to recover from heat stress, will give the best chance for the herbicide to reach the active site and effectively kill weeds.

2. **Leaves change in response to heat**. In order to prevent water loss, plant cuticles become waxier in response to heat or drought stress. The greater wax content makes it more difficult for water-based spray solutions to penetrate the plant. In addition, the leaf angle of many plants changes in response to heat or drought stress (Figure 1). This can result in less herbicide contacting the leaf surface to enter the plant.

Figure 1. Velvetleaf usually changes leaf angles at night, but the leaves on these plants are vertical in response to high temperatures. Photo by Sarah Lancaster, K-State Research and Extension.

Management*:* Using maximum labeled rates of herbicides and surfactants can help get more spray solution into the plant, increasing effectiveness. Spraying during the cooler parts of the day will reduce the impact of altered leaf angle.

3. **Crop response to foliar applied, non-translocated herbicides is greater in hot temperatures.** When applied in hot, humid conditions, contact herbicides, such as Cobra, Liberty, or Reflex will likely result in greater foliar injury to crops, but also greater weed control (Figure 2).

Figure 2. Contact herbicides can cause bronzing of soybean leaves when applied post-emergence. This photo was taken one week after an application that included flumiclorac (Resource, Perpetuo, and others). Photo by Sarah Lancaster, K-State Research and Extension.

Management: If possible, postpone application of these herbicides if temperatures are over 90°F. If weed size requires immediate herbicide application, reduce the rate of herbicide and adjuvant, and apply later in the day, when the air temperature will decrease after application.

4. **Herbicide volatility increases with high temperatures and low humidity**. Herbicides in group four, such as dicamba and 2,4-D are prone to volatility, which means the herbicide becomes a vapor and can move long distances with slight breezes. Volatility of these herbicides increases as temperature rise above 60°F and is greatest at temperatures above 90°F.

Management: Avoid applying these herbicides when temperatures are over 90°F. This may occur during morning or late afternoon hours, when temperature inversions are likely to occur. Herbicides should not be sprayed during inversions, when small spray droplets can become trapped in a layer of cooler air near the earth's surface. Use larger spray droplets to reduce evaporation, which can be accomplished by reducing spray pressure or increasing nozzle orifice size.

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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4. Cut-off dates approaching for XtendiMax, Engenia, and Tavium applications

Farmers planning to apply XtendiMax, Engenia, or Tavium to their dicamba-resistant soybean have about two weeks remaining to make those herbicide applications. These are the only dicamba-containing products labeled for over-the-top use in dicamba-resistant soybean and cotton. One of the requirements added to these labels in 2021 was a cut-off date for applications. The last day these products can legally be applied to soybeans is June 30, and the cut-off date for cotton is July 30.

For those making over-the-top dicamba applications in the coming days, remember that the restrictions listed below are included on the labels to reduce off-target movement.

- It can only be applied by certified applicators with dicamba-specific training.
- Spray records must be created within 72 hours of application and kept for 2 years.
- Only approved nozzles and tank-mix partners listed on the Xtendimax, Engenia, or Tavium website can be used.
- An approved volatility reduction agent **and** an approved drift reduction agent must be included in the tank mix.
- Maximum boom height is 24 inches above the canopy.
- Maximum ground speed is 15 miles per hour.
- Only apply when wind speeds at boom height are 3 to 10 miles per hour.
- Do not apply if a run-off-producing rain event is forecast in the next 48 hours.
- Do not apply if sensitive crops are downwind. A sensitive crop directory, such as FieldWatch, can help determine the location of sensitive crops.
- Maintain a 240-foot downwind buffer.
- Ensure the entire sprayer system is cleaned before and after application.
- The Bulletins Live Two website must be consulted to ensure the application will not affect endangered species.

For more detailed information, see the "2024 Chemical Weed Control for Field Crops, Pastures, and Noncropland" guide available online 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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5. Chinch bug activity in Kansas

Chinch bugs in Kansas are a perennial pest of just about any type of grass (Figure 1). They have caused problems in turf farms, golf courses, and lawns. In crops, they mainly affect sorghum but are occasionally problematic in corn and wheat. Primarily, it is because of timing. As wheat is quickly maturing, chinch bug nymphs, which have been feeding on the wheat until the plants started drying, move elsewhere, seeking a new food source. Often, this is seedling sorghum planted adjacent to those wheat fields that are now maturing but in which the chinch bugs were perfectly happy feeding. This is called the walking migration because these nymphs can't fly or jump. They walk out of the maturing wheat seeking succulent grass to feed on. However, these small nymphs can only live a few days without food and can only walk about 50 yards without finding a suitable food source. Both of these restrictions may be used to help avoid chinch bug damage from this walking migration by delaying planting the area closest to the wheat for a few days.

Figure 1. Adult chinch bug with white "X" on back with young nymphs (red) and older nymphs (grey). Photo by K-State Extension Entomology.

Insecticide-treated seed also helps as the nymphs seem susceptible. However, the bugs need to feed on the plant juice to get the toxin, and if there are too many bugs inserting their mouthparts and sucking out the fluid, especially under less than ideal growing conditions, this may kill the bug, but also kill the plant.

Last year, in 2023, much of Kansas experienced large populations of chinch bugs, so there were potentially large numbers going into the fall/winter; this has caused many questions about chinch bug populations in 2024. In the 1960's-70's, the Kansas Dept. of Ag. conducted overwintering surveys, then sampled fields adjacent to where these overwintering samples were collected in an attempt to predict spring infestation levels. They could not correlate winter diapausing populations with any spring infestations because there are just too many factors that impact these populations. However, we sampled many wheat fields in mid-May this year, and chinch bugs were easily detected. Also, because they float, chinch bugs do not generally drown in heavy rain. So, water running off infested wheat fields moves chinch bugs, often accumulating wherever runoff water pools. Good growing conditions really help plants withstand chinch bug feeding.

As chinch bug infestations are impending, many producers are wondering about the status of chlorpyriphos, a common insecticide widely used for many years. As I understand it, the latest is that the chlorpyriphos ban was lifted in November 2023. Thus, applicators can use it. However, it is again my understanding that supply may be limited because of that recent ban. However, it can be used until June 2025, when new registrations should be issued.

For more information, please refer to the following KSRE publications:

Sorghum Insect Pest Management
2024 **MF742** https://bookstore.ksre.ksu.edu/item/sorghum-insect-pest-management-2024_MF742

Chinch Bugs **MF3107** https://bookstore.ksre.ksu.edu/item/chinch-bug-kansas-crop-pests_MF3107

Crop Insects of Kansas **S-152** https://bookstore.ksre.ksu.edu/item/crop-insects-in-kansas_S152

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6. Spring precipitation: A season of contrasts across Kansas in 2024

Meteorological spring 2024 began on March 1 and ended on May 31. During spring, there was a wide range in precipitation totals across Kansas, from less than 1 to more than 20 inches. In this report we take a closer look at the varied precipitation totals that fell across the state during the past three months.

A contour plot of total spring precipitation (Fig. 1) shows two standout features in different corners of the state: high totals in the southeast and low totals in the southwest. In the southeast, most locations picked up between 10 and 15 inches of precipitation, with isolated amounts of over 20 inches. The plot suggests Bourbon County was the only county where over 20 inches fell, but this amount was also exceeded in Allen, Crawford, and Elk Counties. Amounts from 15 to 20 inches were observed in eight additional counties: Cherokee, Cowley, Labette, Linn, Neosho, Riley, and Wilson. The highest reported total for spring was 22.31″ by the cooperative observer at Longton in Elk County (Table 1). Much of this fell within roughly a 2-week period; between April 25 and May 7, Longton picked up 14.25″ of rain. Within this period, April 28 was the wettest day when 6.90″ was observed. There were higher totals on that day nearby; Fredonia in Wilson County recorded 8.50″. This was the second-wettest day in 132 years of records at Fredonia, behind only an 11.76″ deluge that fell on June 30, 2007. Three-day totals from April 26 through April 28 exceeded 8 inches in five counties: Allen, Anderson, Bourbon, Neosho, and Wilson. The highest amount for that 3-day period was 11.13″, as measured by the cooperative observer in Fort Scott. This amount was the city's highest 3-day total in over a quarter-century. The Marmaton River at Fort Scott crested at 47.02 feet on the afternoon of the 28th, just over 9 feet above flood stage and 4 feet over the threshold of 43 feet for major flooding. Many roads were flooded in and around Fort Scott due to the deluge.

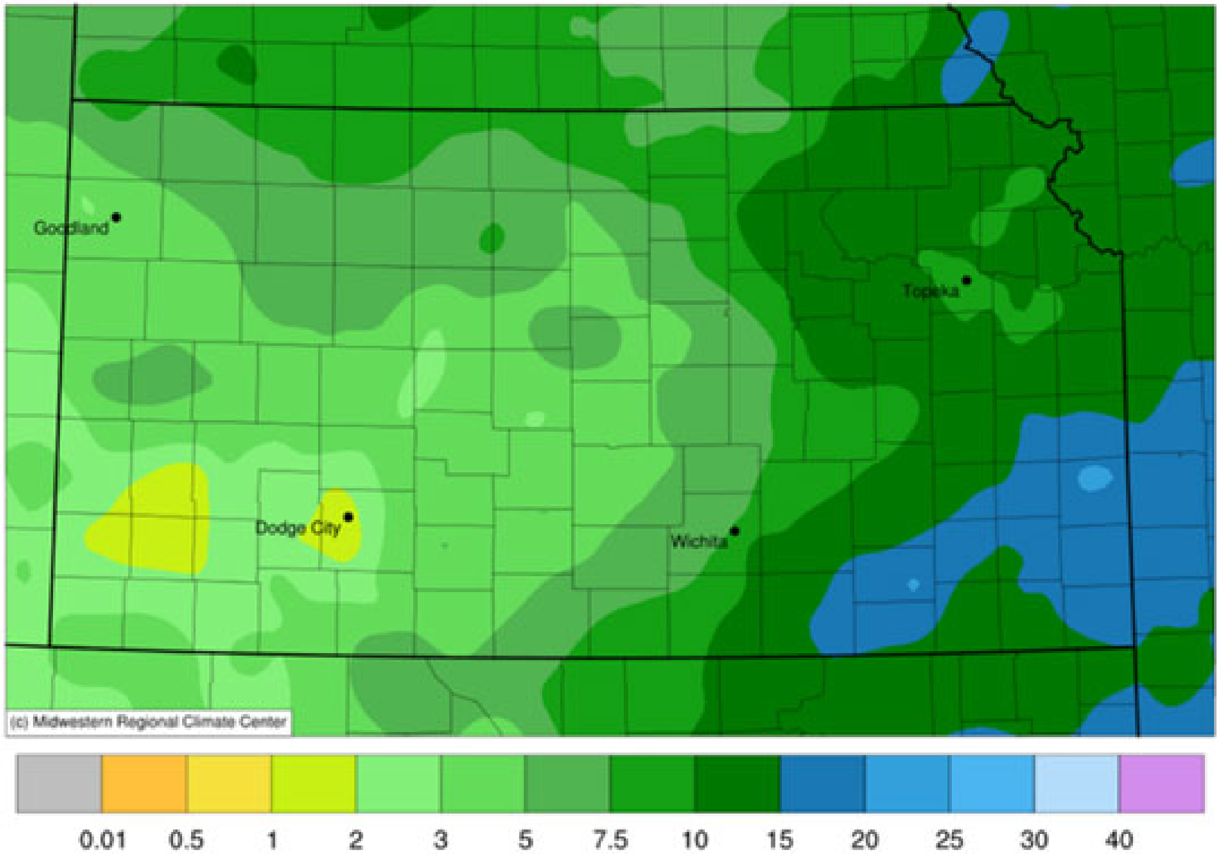

Figure 1. Total precipitation from March 1 through May 31, 2024. Source: Midwest Regional Climate Center.

Table 1. The highest and lowest precipitation totals (inches) in Kansas for the period March 1-May 31, 2024. Reports are from CoCoRaHS observers except where otherwise noted.

Station Name	County	Amount (inches)	Station Name	County	Amount (inches)
Longton (COOP)	Elk	22.31	Grant (Mesonet)	Grant	0.86
Devon 0.1 SE	Bourbon	22.26	Ulysses 0.9 NW	Grant	1.27
Fort Scott 9.3 NNE	Bourbon	20.55	Dodge City 2.0 NNW	Ford	1.29
Humboldt (COOP)	Allen	20.49	Moscow 10 NW (Mesonet)	Stevens	1.29
Welda 3 E (Mesonet)	Anderson	20.37	Lakin (COOP)	Kearny	1.30
Pittsburg (COOP)	Crawford	20.01	Deerfield 0.6 NE	Kearny	1.31
Fort Scott 0.6 W	Bourbon	19.04	Stanton (Mesonet)	Stanton	1.32
Grenola 1 N (COOP)	Elk	18.63	Johnson City 2.9 NNW	Stanton	1.37
Pittsburg 2.2 E	Crawford	18.21	Dodge City 2.1 N	Ford	1.39
Parsons 2 NW (COOP)	Labette	17.80	Satanta (Mesonet)	Seward	1.43
Erie 0.4 NNW	Neosho	17.73	Dodge City 4.0 SW	Ford	1.50
Fredonia (COOP)	Wilson	17.59	Garden City Arpt. (WBAN)	Finney	1.58
Parsons (Mesonet)	Labette	17.45	Holcomb 0.5 SSE	Finney	1.59

Uniontown 3 NW (Mesonet)	Bourbon	17.34	La Crosse (Mesonet)	Rush	1.59
Columbus (COOP)	Cherokee	17.26	Roth Tech Farm (Mesonet)	Finney	1.59

In southwest Kansas, the problem was a lack of precipitation, as this area had the lowest spring precipitation totals in the state. Two inches or less was measured by observers in nine counties: Finney, Ford, Grant, Gray, Hamilton, Hodgeman, Kearny, Seward, and Stanton. The lowest total was 0.86" in Grant County, as reported by the Kansas Mesonet site 4 miles north of Ulysses. Dodge City's official total of 1.77" for the period March 1 through May 31 is the third lowest on record in 150 years and the lowest spring total in well over a century since a total of 1.35" set the record for driest spring back in 1893. While Garden City's official total was lower (1.58") than Dodge City's, spring 2024 ranks as their sixth driest on record. Interestingly, four of the five driest springs in Garden City have occurred since 2013, including just two years ago in 2022, when there was less than an inch of precipitation (0.95"). Despite the low totals, southwest Kansas did not have the biggest precipitation deficits. A look at the departures from normal precipitation map (Fig. 2) shows that it was not the southwest but central and south central Kansas that were the most below normal.

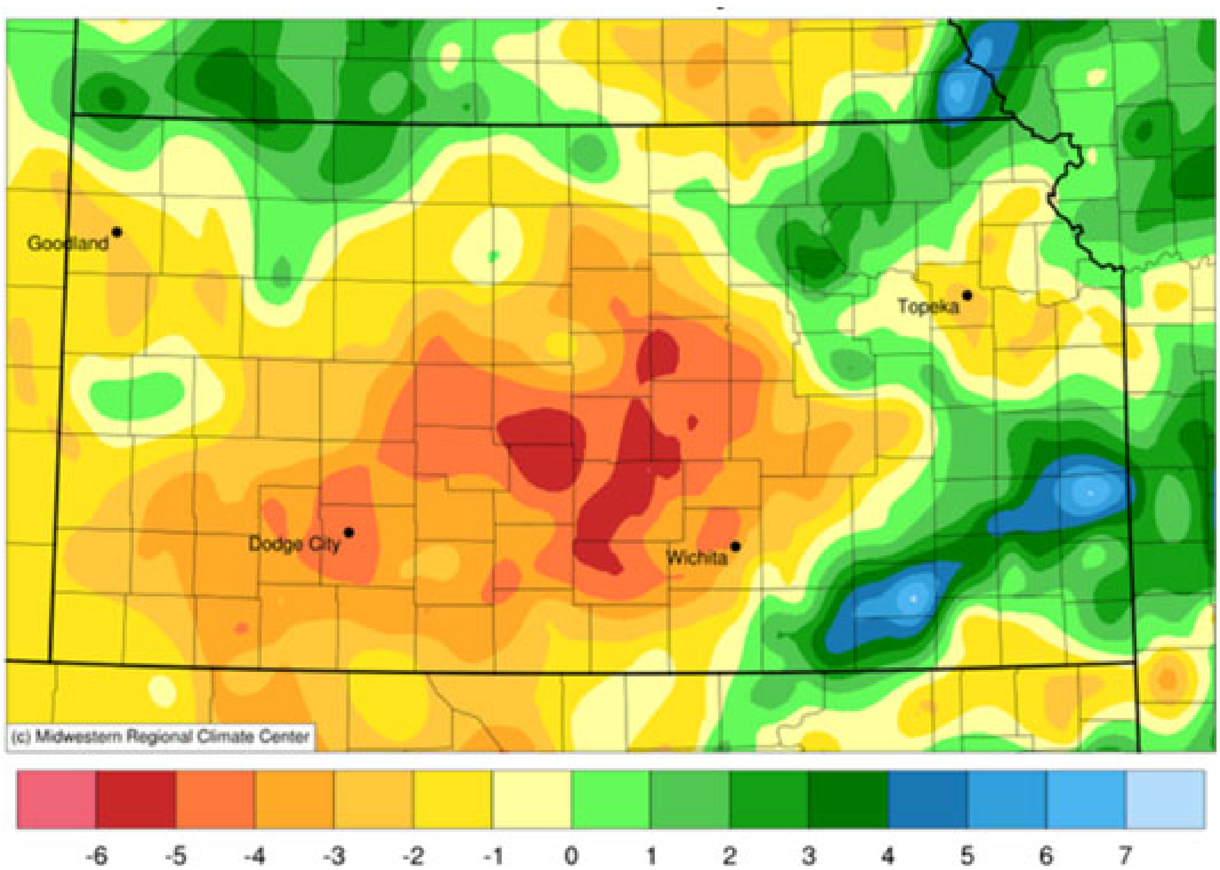

Figure 2. Departure from normal precipitation from March 1 through May 31, 2024. Source: Midwest Regional Climate Center.

The National Centers for Environmental Information (NCEI) calculates average monthly precipitation totals for every county in the United States. The preceding month's data are typically released within two weeks after a month ends. Not only are the most recent month's data made available for the first time, but adjustments to earlier months are often made based on additional data received after a month's initial release. The county-specific data presented below are based on NCEI's March, April, and May numbers that were released on June 10. In addition to recent data, NCEI has calculated monthly averages back to 1895, thereby creating a valuable database that compares recent precipitation amounts to historical totals.

A look at county averages (Table 2) during the spring months reflect climatology, with counties in the east wettest and those in the west driest. Of the three months, April had the widest range in precipitation totals. Bourbon County's 11.06" was their second wettest April on record; only 1994 had a higher average (14.77"). It was the third wettest April on record in Allen County and fifth wettest in Wilson County. April was the driest on record in seven counties: Barton, Edwards, Ellsworth, Ford, Hodgeman, Pawnee, and Rice. When all three months are summed and compared to normal (Table 3), we see extremes like those depicted in the graphics: southeast Kansas had the highest and most above-normal totals, with Bourbon County leading in both categories. Haskell County in southwest Kansas was driest, and McPherson County was the most below normal. Only 24 counties were above normal for spring. Of the 81 counties below normal, about half of them (42) were at least 2 inches below normal, with 23 at least 3 inches below normal. The statewide average precipitation for spring 2024 was 7.19", or 1.50" below normal. This ranked as the 52nd driest spring of the last 130 years.

Table 2. The ten wettest (green shading) and driest counties (yellow shading) in Kansas for March, April, and May 2024. Source: NCEI.

March 2024		April 2024		May 2024	
Precip. (inches)	County	Precip. (inches)	County	Precip. (inches)	County
2.49	Woodson	11.06	Bourbon	7.51	Marshall
2.21	Allen	9.82	Allen	7.43	Riley
2.18	Crawford	9.05	Wilson	7.26	Elk
2.17	Doniphan	8.89	Neosho	7.15	Pottawatomie
2.16	Bourbon	8.27	Linn	7.07	Chautauqua
2.08	Chase	8.11	Anderson	6.61	Crawford
2.05	Coffey	7.91	Crawford	6.46	Cherokee
2.01	Lyon	7.46	Elk	6.26	Cowley
1.95	Montgomery	7.14	Cherokee	6.21	Nemaha
1.95	Labette	6.88	Woodson	6.05	Harper
0.07	Comanche	0.04	Hodgeman	1.65	Haskell
0.10	Kiowa	0.05	Gray	1.73	Seward
0.11	Barber	0.05	Pawnee	1.83	Gray
0.11	Clark	0.06	Edwards	1.90	Grant
0.12	Pawnee	0.06	Ford	1.90	Meade
0.13	Meade	0.08	Finney	1.99	Sherman
0.13	Pratt	0.08	Haskell	2.02	Finney
0.13	Stanton	0.09	Seward	2.02	Stevens

0.14	Stafford	0.15	Barton	2.07	Morton
0.15	Hamilton	0.15	Ness	2.13	Stanton

Table 3. The ten wettest, driest, most above, and most below counties in Kansas for spring 2024. Source: NCEI. Positive values indicate the amount (inches) of precipitation above normal; negative values indicate the amount of precipitation below normal.

Wettest Precip. (inches)	County	Driest Precip. (inches)	County	Most Above Normal (inches)	County	Most Below Normal (inches)	County
18.62	Bourbon	1.94	Haskell	+5.20	Bourbon	-4.88	McPherson
16.74	Allen	2.04	Seward	+4.03	Elk	-4.78	Rice
16.70	Crawford	2.07	Gray	+3.75	Allen	-4.56	Reno
16.48	Elk	2.21	Meade	+2.75	Wilson	-4.46	Harvey
15.75	Neosho	2.29	Grant	+2.48	Crawford	-4.40	Ellsworth
15.64	Wilson	2.44	Morton	+2.31	Anderson	-4.30	Saline
15.51	Cherokee	2.44	Stevens	+2.22	Linn	-3.97	Stafford
14.94	Linn	2.47	Finney	+2.15	Riley	-3.87	Kingman
14.92	Chautauqua	2.54	Stanton	+2.10	Pottawatomie	-3.85	Meade
14.62	Anderson	2.86	Kearny	+2.09	Chautauqua	-3.80	Marion

The effect of the unequal distribution of precipitation across Kansas is evident in the US Drought Monitor. As of May 28 (Fig. 3 top), 32 of Kansas' 105 counties are completely drought-free, all in the eastern one-fourth of the state. The southwest quarter of the state ranges from D1 to D3 drought status, with the worst conditions (D3) in parts of seven counties: Finney, Ford, Hodgeman, Kearny, Ness, Pawnee, and Rush. It's important to note that conditions were much worse last year. Only 27% of Kansas is currently in D2 or worse status; 72% of Kansas was D2 or worse just one year ago, with nearly 32% of the state in D4, the most severe category. While we are better off this year, the descent into drought has been quick; some locations worsened by as much as 4 categories (Fig. 3 bottom) during spring. All of the current D3 areas were drought-free just three months ago.

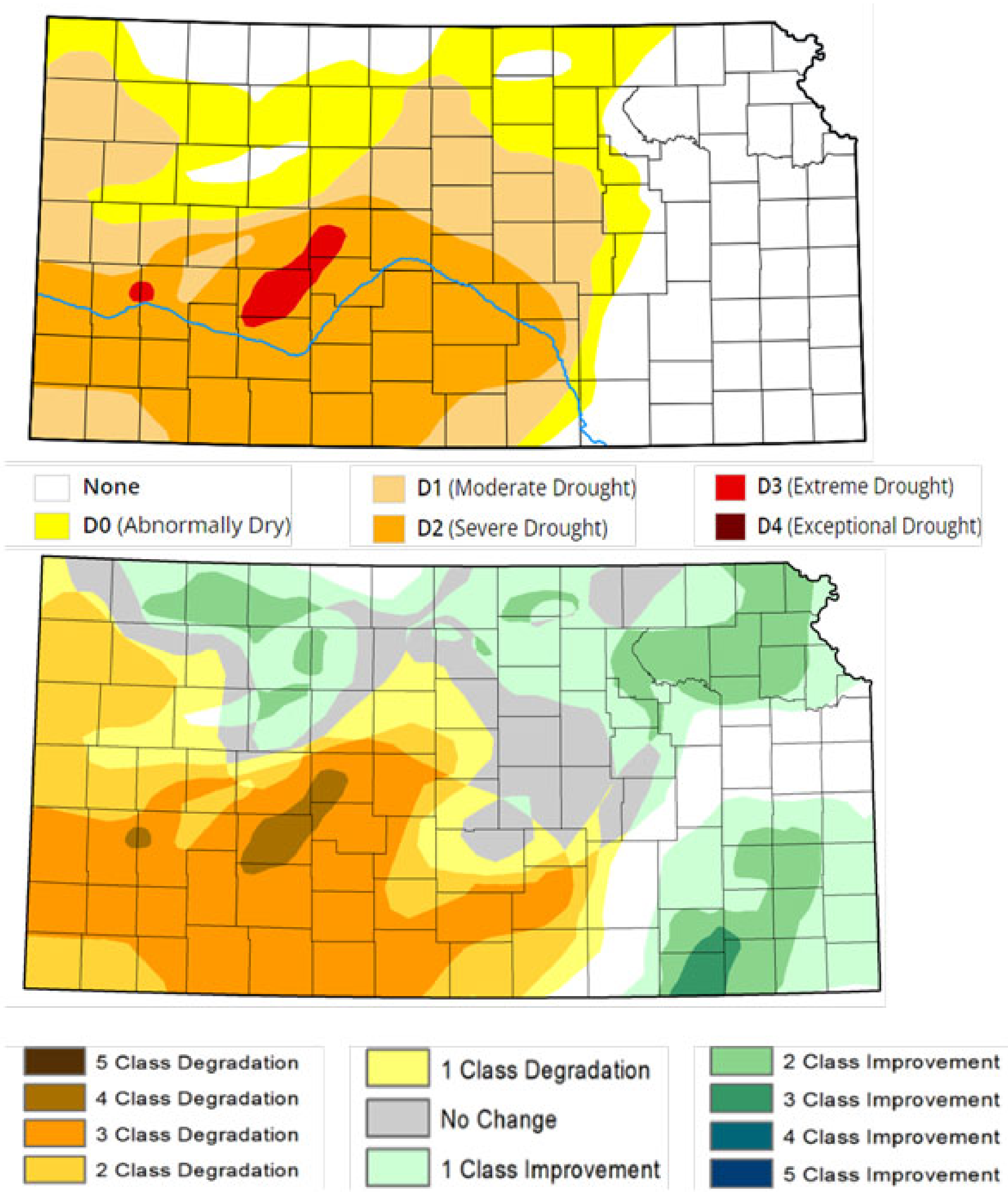

Figure 3. Weekly drought status as of May 28, 2024 (top) and the change in category over the past 3 months (bottom) for Kansas. Source: U.S. Drought Monitor.

Fortunately, the start of meteorological summer has been wet for southwest Kansas. All seven Ford County observers listed in Table 1 have picked up more precipitation since June 1 than they did in all of spring! The official Dodge City observation site has more than tripled its spring precipitation total, having picked up 5.69” since June. A continuation of this trend would be most welcome in southwest

Kansas, as more precipitation would continue to improve drought conditions. The last time the entire state of Kansas was drought-free was nearly 5 years ago, in July 2019. And while we're not there yet, June has so far been a step in the right direction after a very dry spring.

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