



K-STATE
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Extension Agronomy

eUpdate

03/07/2024

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. Topdressing wheat with nitrogen fertilizer

Current conditions of the wheat crop and N considerations

The status of Kansas's 2023-24 winter wheat crop is variable. Most of the state had a much better start to the growing season than in the past three years, with timely fall precipitation events resulting in good stand establishment for most of the state. Some exceptions occurred, such as a pocket surrounding Hays that missed some of these rainfall events, and the crop did not emerge until much later in the fall (~December). Luckily, this poor stand establishment, as a function of dry conditions, is much more isolated this year than in past years. Some extremely cold days during the winter were accompanied by large amounts of snow, which mostly protected the crop from winter injury. Still, on terrace tops where the snow may have blown away, the crop may have sustained some level of winter injury. A good stand establishment was followed by above-normal temperatures during the winter, which resulted in a fairly early greenup to the crop across much of the state. While some fields may show partial winter injury due to the cold temperatures mentioned above, overall, the crop has a much better yield potential this year than it has had in the recent past, which should be considered when managing the nitrogen (N) fertilizer rate.

For the most part, and regardless of crop conditions, now is a good time to start planning for topdressing nitrogen – especially with the early greenup of the crop this season. Some key elements that need to be considered when deciding on the program you plan to use include timing, N source, application method, and N rate. Ideally, the N in topdress applications will be moved into the root zone with precipitation well before jointing begins in order to be most efficiently utilized by wheat. With some small wheat with limited tillers, having adequate N available to support spring tillering when it breaks dormancy will be important. Also, the potential number of kernels per head is determined right after spring green-up and prior to jointing; thus, having available N in the root zone can help ensure a good yield potential. Some combination of fall pre-plant, at-seeding N, and/or early topdressed N is also normally needed to supply adequate N to support head differentiation. This article will discuss some issues to consider when making topdressing decisions.

Timing

Timing is usually the most important factor in getting a good return on topdress N. Getting the N on early enough is critical to have the maximum potential impact on yield, especially in a year with limited fall tillering. While waiting until spring just prior to jointing can be done successfully, this can be too late in some years, especially when little or no N was applied in the fall. For the well-drained, medium- to fine-textured soils that dominate our wheat acres, the odds of losing much of the N that is topdress-applied in the winter is low. For these soils, topdressing can begin anytime now, and usually, the earlier, the better. For wheat grown on sandier soils, earlier is not necessarily better for N applications. On these soils, there is a greater chance that N applied in the fall or early winter could leach completely out of the root zone if precipitation is unusually heavy. Waiting until closer to spring green-up to make topdress N applications on sandier soils will help manage this risk.

On poorly drained and/or shallow claypan soils, especially in south central or southeast Kansas, N applied in the fall or early winter would have a significant risk of denitrification N loss. Waiting until closer to spring green-up to make topdress N applications on these soils will help minimize the potential for this N loss.

Remember that N should not be applied to the soil surface when the ground is deeply frozen,

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especially snow-covered. This will help prevent runoff losses with snow melt or heavy precipitation. Additionally, once the soils start to melt, they will likely be too wet for any field work. Therefore, every field should be considered for characteristics such as slope, N source, tillage system, and the short-term forecast for temperature and precipitation.

Split applications may be a strategy to consider on sandy soils subject to leaching and poorly drained soils prone to denitrification. This would involve applying enough N in the fall at or before planting to support fall growth and tillering -- generally 20-30 pounds of N. Then, follow up with an additional application of about 20-30 pounds of N in late winter or early spring to support spring tillering, possibly applied with herbicides. This late-winter/early-spring application becomes especially important when stands are thin due to poor emergence, as many fields are this year. Finally, return around jointing or a few days later with a final application to support heading and grain fill. This strategy can also provide flexibility in a year like this with poor fall growth, allowing us to hold back part of the N for later in the spring as we have a better idea of soil moisture and weather conditions for the season.

Application method

Most topdressing is broadcast applied. In high-residue situations, this can result in some immobilization of N, especially where liquid UAN is used. If no herbicides are applied with the N, producers can benefit from applying the N in a dribble band on 15 to 18-inch centers. This can minimize immobilization and may provide for a more consistent crop response.

Nitrogen source

The typical sources of N used for topdressing wheat are UAN solution and dry urea. Numerous trials by K-State over the years have shown that both are equally effective. In no-till situations, there may be some slight advantage to applying dry urea since some of it will fall to the soil surface (Figure 1) and be less affected by immobilization than broadcast liquid UAN, which tends to get hung up on surface residues.



Figure 1. Urea broadcast to tillering wheat in a topdress application. Photo by Romulo Lollato, K-State Research and Extension.

Dribble (surface band) UAN applications would also avoid some of this tie-up on surface crop residues. However, if producers plan to tank-mix with an herbicide, they must use liquid UAN and broadcast it.

Controlled-release products such as polyurethane-coated urea (ESN) might be considered on sandy soils prone to leaching or poorly drained soils prone to denitrification. Generally, a 50:50 blend of standard urea and coated urea will immediately provide some N to support tillering and head development and continue to release some N in later stages of development. This would work best in settings with high loss potential.

Nitrogen rate

Producers should have started the season with a certain N recommendation, ideally based on a profile N soil test done before the crop is planted and before any N has been applied. If a soil sample was taken at sowing, profile nitrate-N can help determine the rate to be applied based on the yield goal. However, it is not too late to use the profile N soil test if taken in late winter/very early spring before green-up. While it will not be as accurate as when sampled in the fall, it can still identify fields or areas in fields with high levels of available nitrate N. Unfortunately, it is not reliable in measuring recently applied N. So, if a high rate of N has already been applied, a late winter profile sample probably shouldn't be taken. Remember that topdressing should complement or supplement the N

applied in the fall and the residual soil N present in the soil. The total N application, planting and topdressing, should equal the target recommended rate.

If the wheat was grazed this fall and winter, producers should add an additional 30-40 lbs N/acre for every 100 lbs of beef weight gain removed from the field. If conditions are favorable for heavy fall and/or spring grazing, additional N may be necessary, especially for a grain crop.

Some fields may also benefit from the application of sulfur and chloride. Like N, these nutrients are mobile in the soil, and a topdress application before jointing is considered an effective application time. Sulfur and chloride topdress applications should be made based on soil tests and history of response.

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2. Pay attention to growth stage for spring herbicide decisions on wheat

Producers should pay close attention to the growth stage of their wheat before making spring herbicide applications. Some herbicides must be applied after tillering, several must be applied before jointing, and others can be applied through boot stage. Remember that weeds are most susceptible at early growth stages. Coverage becomes difficult as the wheat canopy develops, so the earliest practical and labeled applications generally result in the best weed control.

Applications permitted prior to jointing

Dicamba can be applied to wheat between the 2-leaf and jointing stages. Application of dicamba after wheat reaches the jointing stage of growth causes severe prostrate growth of wheat and a significant risk of yield loss. Dicamba is effective for controlling Russian thistle, wild buckwheat, and susceptible populations of kochia; but is not good for controlling mustard species. Kochia, Russian thistle, and wild buckwheat are summer annual weeds that may emerge before or after wheat starts to joint, so timing dicamba applications for control of these weeds can sometimes be difficult. Fortunately, dicamba provides some residual control of these weeds following application.

Products labeled only for use on herbicide-resistant wheat must also be applied prior to jointing. Beyond should be applied to 1 gene ClearField wheat after tiller initiation and prior to jointing, but can be applied to 2-gene ClearField wheat until the second node is detected at the soil surface. Aggressor should be applied to CoAXium wheat varieties after the 4-leaf growth stage and before jointing. Beyond should only be applied to ClearField wheat varieties, and Aggressor should only be applied to CoAXium wheat varieties.

Other herbicides that must be applied prior to jointing include Agility SG, Olympus, Outrider, Pulsar, Rave PowerFlex HL. Tarzec is a relatively new product combining PowerFlex and Elevore (described below) that can be applied from three-leaf to joint.

Applications permitted through boot

Herbicides that can be applied later in the spring – prior to boot stage – include Ally + 2,4-D, Amber, Finesse, Glean, Starane Flex, and Starane NXT. Starane is a better choice than dicamba products for control of kochia after wheat moves into the jointing stage of growth

2,4-D is labeled for application to wheat from the full-tiller stage until prior to the boot stage of growth. Application of 2,4-D prior hinders the tillering process and can result in significant yield loss if applied too early. Wheat will sometimes exhibit prostrate growth when 2,4-D is applied in the jointing stage of growth, but yields generally are not significantly affected if applied before the boot stage.

In general, MCPA is safer on wheat than 2,4-D, especially when applied prior to tillering. MCPA can be applied after the wheat is in the three-leaf stage (may vary by product label) until it reaches the boot stage of growth. Neither herbicide should be applied once the wheat is near or reaches the boot stage of growth, as an application at that time can result in malformed heads, sterility, and significant yield loss (Figure 2).

Both 2,4-D and MCPA are available in ester or amine formulations. Ester formulations generally

provide a little better weed control than amine formulations at the same application rates but are also more susceptible to vapor drift. However, the potential for vapor drift damage in early spring is minimal. Ester formulations are generally compatible for use with fertilizer carriers, while amine formulations often have physical compatibility problems when mixed with liquid fertilizer.

Applications permitted through flag leaf

Many herbicides used in the spring on wheat can be applied up to the time the flag leaf is visible, or later. Some newer premix products based on the herbicide halauxifen methyl (Elevore) that can be applied through flag leaf are Pixxaro (with Starane), Quelex (with florasulam), Rezuvant (with Starane and Axial XL), WideARMatch (with Starane and Stinger). Halauxifen methyl is a Group 4 herbicide that controls emerged broadleaf weeds, including marestalk, flixweed, and henbit. Elevore is not labeled for application to wheat.

Other herbicides that can be applied through flag leaf include Affinity BroadSpec, Affinity TankMix, Ally Extra SG, Express, Harmony, Harmony Extra, Huskie, Sentrallas, Supremacy, Talinor Weld, and WideMatch.



Figure 1. Stunting from an application of 2,4-D to wheat prior to tillering. Photo by Dallas Peterson, K-State Research and Extension.



Figure 2. Malformed heads from an application of 2,4-D at boot stage. Photo by Dallas Peterson, K-State Research and Extension.

For more detailed information, see the “2024 Chemical Weed Control for Field Crops, Pastures, and Noncropland” guide available online at <https://bookstore.ksre.ksu.edu/pubs/SRP1183.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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3. Residual herbicides for corn

Residual herbicides that kill weed seeds/seedlings as they germinate or emerge are important for herbicide applications at or before corn planting. These herbicides can control weeds for several weeks, which prevents yield loss due to early-season weed competition. They can greatly improve the effectiveness of a post-emergence herbicide application and give more flexibility for post-application timing. Residual herbicides are also an important component of sequential herbicide applications later in the growing season. In general, preventing the emergence of weeds, especially herbicide-resistant weeds, is preferable to controlling them after they emerge (Figure 1).



Figure 1. These photos from the Ashland Bottoms Research Farm illustrate the ability of a residual herbicide (applied in the plot on the right) to prevent early-season competition by a dense Palmer amaranth population. Photos by Sarah Lancaster, K-State Research and Extension.

Many cases of herbicide-resistant weeds have resulted from over-reliance on post-emergence herbicide applications, thus it is essential to include one or more residual herbicides available for corn. However, it is also important to remember to change residual herbicides to prevent the selection of tolerant or resistant weeds. The importance of this is reflected in the recent confirmation in other states of waterhemp and Palmer amaranth that are resistant to *S*-metolachlor (Dual).

The specific herbicide you use is important, but it is usually less important than deciding to use a residual herbicide program that includes at least two effective herbicides. But, it is important to know the strengths and weaknesses of each product in terms of the spectrum of weeds controlled. A table

summarizing weed species' response to various corn herbicides can be found on pages 25-27 of 2024 *Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland* (SRP 1162) at: <https://bookstore.ksre.ksu.edu/pubs/SRP1183.pdf>

Categories of residual herbicides for corn

Photosystem II Inhibitors (Group 5). Atrazine is the most widely used PS II inhibitor in corn. It controls a wide variety of broadleaf weeds, including pigweeds, ragweeds, morningglories, and mustards, as well as some grass species. However, atrazine resistance has been reported for many weed species. Atrazine use rates are influenced by soil type, soil pH, and organic matter, and use is prohibited in instances where water contamination is likely. Unless your situation prohibits atrazine use, it is recommended to include atrazine when you apply HPPD-inhibitor and acetamide herbicides.

Very Long Chain Fatty Acid Inhibitors (Group 15). The main VLCFA products used in corn include acetochlor, S-metolachlor, metolachlor, dimethamid-P, and pyroxasulfone. In general, these products are very effective in controlling most annual grasses (except shattercane) and small-seeded broadleaf weeds such as pigweeds. They are much less effective in controlling kochia or large-seeded broadleaf weeds such as cocklebur, devilsclaw, morningglory, sunflower, and velvetleaf. An exception is those products containing pyroxasulfone. Though resistance to Group 15 herbicides has been reported in corn/soybean rotations in Illinois, there have been no cases of weed populations in Kansas developing resistance to the Group 15 herbicides to date.

Group 15 herbicides are most effective when applied with atrazine. In past years, often because of cost, reduced rates of these products were applied to help manage heavy summer annual grass pressure, then followed up with a good post-emergence herbicide program. With the increased occurrence of glyphosate- and other herbicide-resistant weeds, it is essential to use the full rates of these products in conjunction with a POST program.

HPPD-inhibitors (Group 27). Examples of HPPD-inhibitors are isoxaflutole (e.g. Balance Flexx) and mesotrione (e.g. Callisto and many generics). These products should be applied with atrazine. HPPD-inhibitors provide excellent for control of kochia, pigweeds, velvetleaf, and many other broadleaf weeds, as well as grasses. Corvus (thiencarbazon + isoxaflutole) will control shattercane and common sunflower better than Balance Flexx, provided the sunflower is not ALS-resistant. Keep in mind, products containing Balance should not be applied to coarse-textured soils when the water table is less than 25 feet below the soil surface. Balance Flexx does not provide adequate control of sunflower.

PPO-inhibitors (Group 14). Examples of PPO-inhibitors include flumioxazin (e.g. Valor) and saflufenacil (Sharpen). Herbicides containing flumioxazin must be applied 7 to 30 days before corn planting. These herbicides provide excellent control of pigweeds; however, they are marginal on kochia. Fierce (flumioxazin + pyroxasulfone) will provide improved control of velvetleaf and kochia compared to Valor. The addition of atrazine will enhance kochia, pigweed, velvetleaf, and morningglory control, provided the populations are not triazine-resistant. Sharpen and Verdict (saflufenacil + dimethenamid-P) have excellent activity on pigweeds, kochia, and large-seeded broadleaf weeds. However, the length of residual activity can be shorter than other pre-emergence products when all are compared at full rates. Approximately 7 to 10 days of residual can be expected per 1 oz of Sharpen and 5 oz of Verdict.

ALS-inhibitors (Group 2). One example of a pre-emergence ALS-inhibitor used in corn is flumetsulam (Python), which only has broadleaf activity and provides good control of large-seeded broadleaf weeds such as cocklebur, sunflower, and velvetleaf, or the small-seeded common lambsquarters. Flumetsulam is also a component of Hornet, Stanza, SureStart II, and TripleFlex II. These products are especially effective for control of sunflower, along with cocklebur and velvetleaf, but less effective for morningglory control.

Rimsulfuron is another ALS-inhibiting herbicide that is a component of Basis Blend, Instigate, Prequel, Realm Q, and Steadfast Q. Products with rimsulfuron will provide short residual control of grass and broadleaf weeds and should be used as a setup herbicide with a good post-emergence weed control program. If ALS-resistant broadleaf weeds are present, these ALS-containing herbicides often will be less effective.

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. Tips for safe and successful prescribed burning this spring

The prescribed burning season in Kansas has started. While this year has been a bit less conducive for wildfires, with at/below average fire activity expected (see recent eUpdate article at <https://bit.ly/3P14I5r>), precautions must be taken to ensure burning goes as planned. This article discusses reasons for conducting a prescribed burn and ways to have a safe and successful prescribed burn. In addition, there are some online tools and resources that will be useful when planning a prescribed burn.

Reasons for conducting a prescribed burn

Brush control and increased stocker gains often top the list when you ask that question. Decades of data have indicated that a mid to late-spring burn enhances stocker gains with an average of an additional 32 pounds per animal grazing burned pastures. Stocker gains from burned pastures have almost always been higher, even in dry years. Brush control is more apt to occur once the woody plants are leafed out. The exception is eastern red cedar, which is vulnerable to prescribed burning at any time. Other reasons for burning include conserving the native plant community, improving grazing distribution, enhancing wildlife habitat, and decreasing the severity of wildfires. Maintenance of conservation reserve program (CRP) acres is another use of prescribed burning. Normally, CRP acres are burned between February 1 and April 15 in eastern Kansas and February 1 and April 30 in the west. Summer burns after July 16 are also allowed in Kansas. Be sure to check with your local FSA office regarding the burning of CRP in your county.

Weather forecasts and smoke model

Weather forecasts can be obtained from the National Weather Service (NWS) offices in Topeka, Wichita, Dodge City, Goodland, Hastings, NE, Kansas City/Pleasant Hill, MO, and Springfield, MO. To access them online, type weather.gov/ and the name of your NWS office.

Weather conditions for conducting a safe prescribed burn are:

- wind speeds 5-15 mph,
- 40-70% relative humidity, and
- air temperatures of 50-80°F.

The amount of cloud cover and mixing height will influence smoke dispersal. Check under the hourly forecast to see what is expected. That hourly forecast is also helpful in seeing when wind shifts might occur.

A smoke model located at ksfire.org predicts the direction in which smoke from a fire will travel based on current weather conditions, location, date, amount of fuel, and size of area to be burned. The smoke model only works for the Flint Hill counties, plus Johnson, Wyandotte, and Sedgwick. Another site providing useful information relative to conducting a prescribed burn is the [Kansas Mesonet](http://KansasMesonet). You can see current humidity and wind direction at mesonet.ksu.edu/fire/rh at 70+ locations across the state and the current and predicted fire danger at mesonet.ksu.edu/fire/danger.

If you plan on prescribed burning this year in particular, here are a few things to be mindful of:

- Fires can burn more aggressively even after recent moisture, be unpredictable, and be hard to

contain - especially during periods of light wind.

- If prescribed burning, we recommend cutting larger fuel breaks in advance and expect less effective timber control lines.
- Having more people or equipment than needed is an extra precaution that can usually reduce exposure and the risk of escape.
- Know the forecast 2-3 days in advance and prepare/follow up accordingly.
- **Make sure prescribed fires are completely extinguished.**
- Consider waiting until green-up is more established.

Know the prescribed burn regulations

If you are planning to burn this spring, be sure to know your local regulations. Kansas regulations require the person conducting the burn to:

1. Notify the local fire authority,
2. Do not create a traffic safety hazard,
3. Do not create an airport safety hazard, and
4. Ensure that the burning is supervised until the fire is extinguished.

Your county may require a burn permit. Always check with local authorities to ensure burning is allowed before starting a prescribed burn.

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5. Join the CoCoRaHS Network...because every drop counts!

March Madness is upon us! While some people's thoughts turn towards basketball, brackets, and buzzer-beaters, we in the weather community have our own March Madness event: a challenge amongst US states to sign up as many new observers as possible for a program known as CoCoRaHS. CoCoRaHS, the Community Collaborative Rain, Hail, and Snow Network, is a citizen-based project in which observers measure precipitation at their home or business using a standard, high-quality rain gauge (Figure 1) and report their daily totals each morning via the project's web site or through the CoCoRaHS app. CoCoRaHS aims to accurately determine where and how much precipitation falls across North America. CoCoRaHS began in 1998 at Colorado State University. Kansas was the third state to join back in 2004. 2023 marked the 25th anniversary of the project.



Figure 1: The official CoCoRaHS rain gauge. Photo by Matthew Sittel, K-State Research and Extension.

CoCoRaHS in Kansas

Our recruitment efforts last year were quite successful. We added over 80 new observers during March Madness, the sixth-highest count of any state. This was our best showing and was more than double our previous high count. Overall, in 2023, we added just over 300 new reporters. As of March 4, 2024, we have received at least one daily CoCoRaHS report from 839 different observers. This represents about a 10% increase in reports over this time last year.

We are grateful for all of our observers, but we still need more help to improve our coverage of the entire state. Despite a count that averages out to 8 observers per county, there are five counties in

Kansas with no active observers: Greeley, Haskell, Linn, Morton, and Woodson (Figure 2). There are 27 more counties with three or fewer observers. Why is statewide coverage so important? The Kansas Climate Office uses precipitation reports (rain, snow, and ice) to assess drought conditions across Kansas. Without reports, we have no idea exactly how much rain fell or exactly where it fell and where it didn't, which makes it more difficult to determine drought status properly. We occasionally hear from people who point out that the weekly US Drought Monitor map, which our office contributes weekly, doesn't accurately reflect conditions at their location. We often have no reported rainfall, or lack thereof, from their location. We are only as good as the data we receive!

In the wetter months, thunderstorms may impact one part of a county or just one city and not another. Without CoCoRaHS, our knowledge is limited to the few reports we get from airports and cooperative observers. We are missing a lot of territory with so few reports. That's where CoCoRaHS is invaluable. Your reports are not just for the Kansas Climate Office; other agencies, such as the National Weather Service and county and local agencies, use the information to track flooding risk, municipal water supplies, groundwater availability, lake levels, and river stream flows.

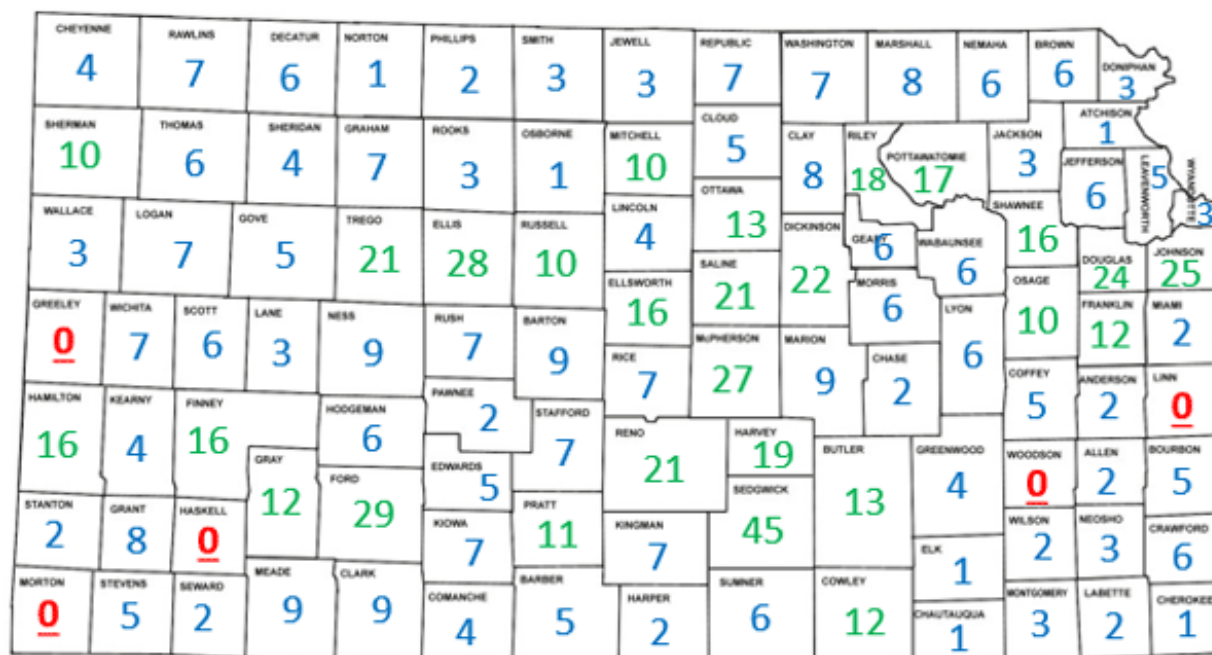


Figure 2. Counts of active CoCoRaHS observers in each county across Kansas as of March 4, 2024.

Users who visit the CoCoRaHS website can view tables and maps of precipitation amounts (Figures 3 & 4) for any or all locations in the United States. Users can also view totals for varying time periods, from days to months. Every CoCoRaHS report received further improves the quality of the products, but there are still spatial and temporal gaps in the data where there are no observers. That's where you come in; we need your help to increase coverage across the state! **The best part of CoCoRaHS, at least for Kansans, is that we provide the standard rain gauge free of charge to new**

observers who request one. We are the only state in the nation that does this. The reason for this is simple: the observational data we receive from our observers is invaluable to our mission to serve Kansas. It's a great partnership: we supply the rain gauges, you supply the data, and together, we help our fellow Kansans.

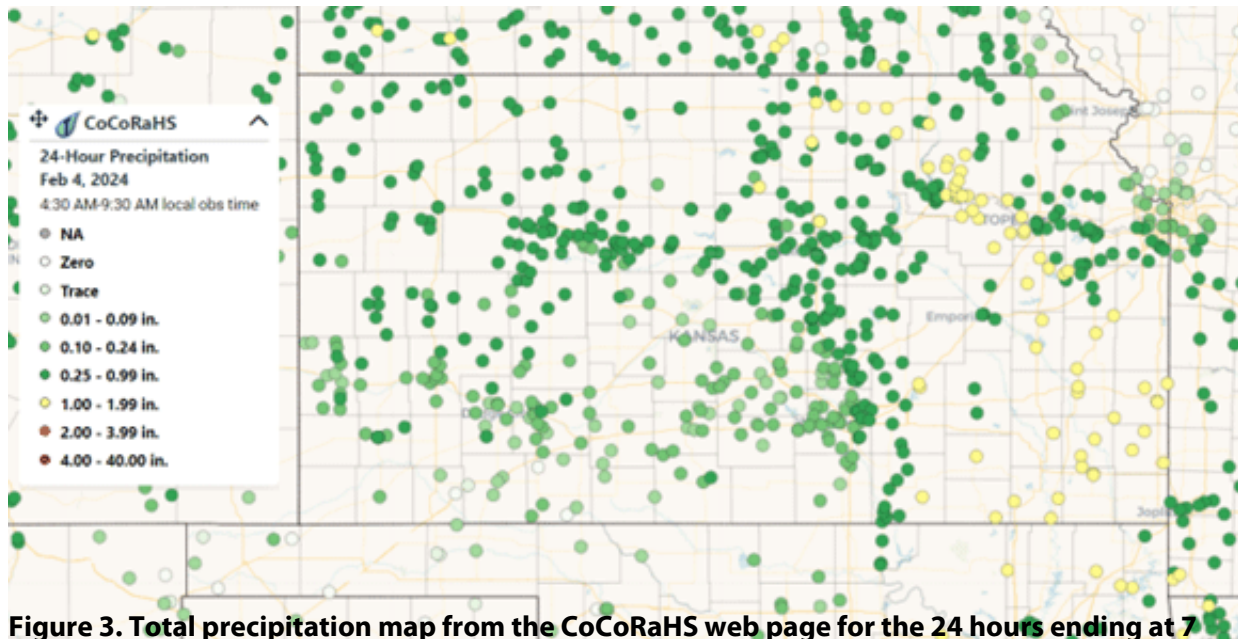


Figure 3. Total precipitation map from the CoCoRaHS web page for the 24 hours ending at 7 AM CST on February 4, 2024.

<u>Station Number</u>	<u>Station Name</u>	<u>Daily Precip Sum in.</u> ▼
KS-PL-8	Agra 0.1 ENE	1.57
KS-PT-60	Westmoreland 5.3 W	1.56
KS-BU-34	El Dorado 10.6 NE	1.53
KS-BU-41	El Dorado 9.8 NE	1.49
KS-CR-15	Girard 4.6 W	1.48
KS-GE-7	Alta Vista 6.7 NNW	1.47
KS-WB-4	Alma 6.1 NW	1.43
KS-AL-9	Iola 0.8 E	1.40
KS-MG-19	Coffeyville 0.8 ESE	1.40
KS-PT-55	Olsburg 3.1 ESE	1.40

Figure 4. Tabular display of 24-hour precipitation data from the CoCoRaHS website on February 4, 2024.

Join CoCoRaHS

We hope you'll consider joining CoCoRaHS; visit cocorahs.org to learn more about the project and to become an observer. Help us track the weather across Kansas; join CoCoRaHS today!

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6. High Plains Sunflower Production Meetings - March 12 and 13

The High Plains Sunflower Committee, Kansas State University, and Colorado State University are hosting a series of sunflower production meetings. The dates and locations are Tuesday, March 12, at the Fourwinds Golf Course in Hugoton, Kansas, and Wednesday, March 13, at the Burlington Old Town—east entrance in Burlington, Colorado. Times at both sites will be from 1:00 p.m. to 3 p.m. (Central time for Hugoton and Mountain time for Burlington, CO). The Fourwinds Golf Course is at 958 Hwy 56, Hugoton, Ks. The Burlington Old Town – east entrance is at 420 S. 14th St, Burlington, Co.

Topics and speakers:

- **Sunflower weed control strategies** with Jeanne Falk Jones, K-State Agronomist
- **Insect and disease strategies** with Ron Meyer, Colorado State Agronomist
- **Market updates from industry partners**
- **Controlling Weeds with Robots** with Cameron Peirce, Kansas Sunflower Commission.

These meetings are free. This program will be available both in person and remotely via Zoom. If you choose to attend remotely, provide your email address when registering, and you will be sent a Zoom link. Certified Crop Advisor Credits will be available for attendees.

Attendees can register online at www.northwest.ksu.edu/events or by contacting Ron Meyer, Colorado State University Extension Specialist, at (719) 346 5571.

Sunflower Production Schools

Available to you in-person or via ZOOM

Topics will Include:

- Sunflower weed control strategies
- Insect & disease strategies
- Market updates
- Controlling weeds with robots

Tuesday, March 12

Fourwinds Golf Course
958 Hwy 56
Hugoton, KS
1:00 - 3:00pm CST

Wednesday, March 13

Burlington Old Town
(East side)
420 S. 14th St
Burlington, CO
1:00 - 3:00pm MST

Register online to attend at:

www.northwest.ksu.edu/events

Questions? please contact Ron Meyer with Colorado State University at

1-719-346-5571 or rf.meyer@colostate.edu

or Jeanne Falk Jones with Kansas State University at

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7. Central Kansas Forage Update - March 21

All are invited to attend a rapid-fire forage update sponsored by the Kansas Forage and Grassland Council in conjunction with the Mid-America Farm Expo on March 21 from 9:00 a.m. to noon. The update will feature a hay market review, tips for managing woody encroachment and Old-World Bluestem on rangeland, and a focus on non-traditional forage alternatives and annual legumes to use as part of your overall forage program. Our group of forage experts will also hang around to answer your rangeland and forage questions at the end.

Come for the forage update and stay to check out the Expo. There is no cost to attend, and no RSVP is required. The event will occur at Tony's Pizza Event Center (upstairs), 800 The Midway, Salina, KS 67401.

Agenda

- 9:00 am *Kansas Hay Market Review*, Kim Nettleton, KDA, Kansas Hay Market Reporter
- 9:30 am *Woody Encroachment*, Doug Spencer, NRCS, Kansas State Grazing Specialist
- 10:00 am *"Old World" Grass and a New Kansas Problem*, Keith Harmoney, KSU-WKREC, Range Scientist
- 10:30 am *Increasing Your Protein*, Trent Page, Star Seed Inc., Sales Mgr. & Cade Rensink, KSU-Central District, Director
- 11:00 am *Summer Annual Legumes*, Nicholas Detter, KSU-Agronomy (John Holman, KSU Cropping Systems Agronomist)
- 11:30 am *Hay, Forage, and Grassland Q & A* with the experts



What: Rapid fire forage update sponsored by the Kansas Forage and Grassland Council in conjunction with the Mid-America Farm Expo

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- 11:30 am *Hay, Forage and Grassland Q & A* with the experts

Come for the forage update and stay to check out the Expo or come for the Expo and check out the forage update! No cost, no RSVP.



8. Don't miss the last K-State Crop Talk webinar on March 12

The popular K-State Crop Talk webinar series started on February 20, 2024. This year, Crop Talk is focused on agronomic topics for producers across the western half of Kansas. Topics include management for wheat production, biological products concerning soil fertility, high pH soils, and fallow replacement options in dryland systems. Continuing education credits will be offered, with one credit for each session.

Each webinar will begin at 12:00 pm (CST) and last until 1:00 pm, beginning with the first one on Tuesday, February 20.

Upon registration, participants will receive an email with instructions to attend via Zoom or YouTube. These webinars are open to all and free. Visit the K-State Northwest Research and Extension Center's website to register: <https://www.northwest.k-state.edu/events/>.

Please contact your local KSRE extension office or the Northwest Research and Extension Center at 785-462-6281.

The last 2024 Crop Talk webinar is:

March 12 – Fallow Replacement Options in Dryland Rotations

Lucas Haag, K-State Northwest Area Agronomist



Crop Talk

Webinar Series

**Broadcast Live from 12:00 – 1:00 pm CT
via Zoom and YouTube**

February 20

Management Tactics for Wheat Production
Romulo Lollato, K-State Wheat Specialist

February 27

Biological Products and Their Role in Soil Fertility
Dave Franzen, North Dakota State Soil Specialist

March 5

Managing Areas of Fields with High pH
Dorivar Ruiz Diaz, K-State Soil Fertility Specialist

March 12

Fallow Replacement Options in Dryland Rotations
Lucas Haag, K-State Northwest Area Agronomist

**Register to attend at
www.northwest.ksu.edu/events**

Links for joining will be sent after registration.



Certified Crop Advisor (CCA) Credits have been applied for.

If you have questions, please contact your local Extension agent or the K-State Northwest Research and Extension Center at 785-462-6281.

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