



K-STATE
Research and Extension

Extension Agronomy

eUpdate

02/06/2025

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. Late winter kochia control in fields going to corn or grain sorghum.....	3
2. Native grasses: Factors for successful stand establishment	6
3. Proposed listing of the monarch butterfly as a threatened species.....	10
4. K-State announces 2025 TAPS competitions in Colby and Garden City.....	12
5. Wheat Rx seminar on February 12 in Salina.....	14
6. K-State Crop Talk webinar series kicks off on February 11.....	16
7. Weed Management Schools for northwest and north central Kansas.....	18
8. Weed Management Schools for southwest and south central Kansas.....	20

1. Late winter kochia control in fields going to corn or grain sorghum

Last week, we shared some general information about applying [pre-emergence herbicides for kochia control](#). This week, we will focus on specific recommendations for fields going to corn or grain sorghum this growing season. Next week, we'll discuss fields going to soybean, sunflower, cotton, and wheat.

Kochia control in fields going to corn

Kochia starts emerging from early February to early March and continues into summer (Figure. 1). It is critical to start the growing season with clean fields. Therefore, any effective kochia control plan for fields going to corn should include early spring application of a burndown herbicide with an effective soil-residual herbicide for controlling early flushes. For example, an application of dicamba alone can control susceptible kochia; however, a combination of 1 to 2 pints of atrazine and 8 to 16 oz. dicamba will control existing broadleaf and grass weeds and provide extended residual activity, often into late spring. This combination will address dicamba-resistant biotypes, but other options are needed for triazine-resistant biotypes.



Figure 1. A young kochia seedling in wheat residue. Photo by Sarah Lancaster, K-State Research and Extension.

A study published in 2019 by weed scientists from across the Great Plains reported excellent control (99%) of glyphosate-resistant kochia can be attained in corn with Degree Xtra followed by Impact, Verdict followed by Status, or Balance Flexx followed by Laudis + atrazine. These data support the recommendation to add atrazine to group 27 herbicides like Balance Flexx or Laudis and are likely the result of greater uptake of the group 27 herbicide. Data from Hays, KS, are shown in Figure 2. All

treatments evaluated provided acceptable control, except for Acuron applied pre-emergence followed by Liberty + Status + atrazine. Corn yields ranged from 88 to 111 bushels/acre, with the greatest yields obtained in corn treated with Verdict + atrazine pre-emergence followed by Liberty + atrazine, Roundup + Armezon Pro + atrazine, Liberty + Status + atrazine, or Roundup + Status + atrazine; Resicore + atrazine applied pre-emergence followed by Durango + atrazine; and Acuron applied pre-emergence followed by Roundup + atrazine. Pre-emergence programs based on Verdict plus atrazine could also be considered for fields going to grain sorghum. Regardless of the herbicide program, frequent scouting is essential to ensure postemergence herbicides are applied when kochia is small.

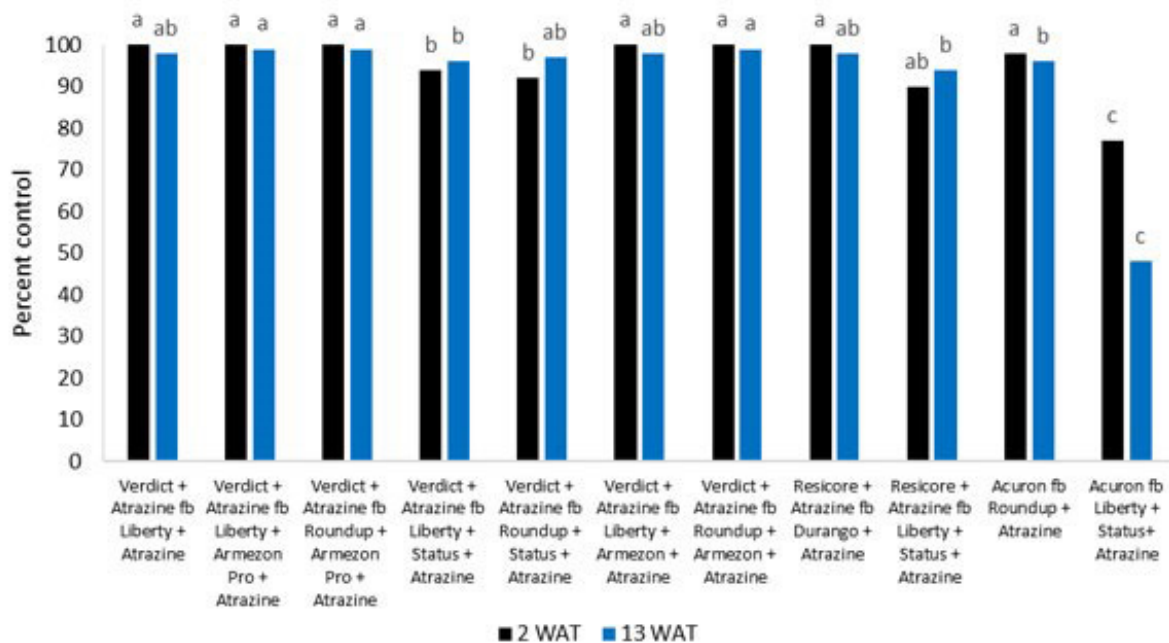


Figure 2. Kochia control in field studies conducted at Hays, KS. PRE, EPOST, and LPOST treatments were applied on April 23, June 11, and June 23, respectively. Similar letters indicate similar weed control.

Kochia control in fields going to sorghum

As sorghum planting in western Kansas generally begins in mid-May, conserving soil moisture by controlling kochia and other weeds before sorghum planting is of utmost importance. Like corn, kochia control in fields going to sorghum can be achieved with tank-mix application of dicamba (8 to 16 oz/a) with atrazine (1 to 2 pints/a) in early spring. If fields are infested with glyphosate-, triazine, and/or dicamba-resistant kochia, Sharpen (2 oz/a) or Gramoxone (2 to 4 pints/a) can also be used to control resistant kochia biotypes. Application of pre-emergence herbicides such as Degree Xtra (64 to 96 oz/a), Lexar (96 oz/a), or Verdict (5 to 10 oz/a) at planting is essential to help control kochia in sorghum. This is especially important as post-emergence control options are more limited in sorghum than in corn.

Reference: Sbatella et al. 2019

Sarah Lancaster, Weed Management Specialist
slancaster@ksu.edu

Jeremie Kouame, Weed Scientist – Agricultural Research Center, Hays
jkouame@ksu.edu

Patrick Geier, Weed Scientist – Southwest Research & Extension Center, Garden City
pgeier@ksu.edu

2. Native grasses: Factors for successful stand establishment

Establishment is the most important phase to ensure system longevity when planning the long-term use of a seeded native grass stand. Native species are slow to establish and do not compete well with other plants, such as undesired weeds and forage mixes. For this reason, native grass pastures can take up to four years to become fully established. Use known cultivars because they have been selected for better establishment and forage production characteristics. Species and cultivar selection, site preparation, seed quality, seed source, and seeding date must be considered to ensure the successful establishment of a native grass pasture. Planning is the key to achieving a successful stand (Figure 1).



Figure 1. A well-established native prairie. Photo by B. Pedreira, K-State Research and Extension.

Before seeding

Before seeding, it is important to assess resources, including soil type, fertility, current and past cropping uses, and how these resources affect the establishment of new native pastures. Producers must understand the potential challenges (existing weed problems, seed bank, and potential

cropland herbicide carry-over), necessary changes in the farming operation, available equipment, seed sources, the intended use of the seeded area, costs and returns anticipated, and suitability for wildlife habitat. This information contributes to the preparation for seeding.

Soil characteristics

The first step in knowing the potential yield for haying or grazing is understanding more about the soil. Soil texture can be identified by a lab test or by searching NRCS soil survey maps available through the NRCS Web Soil Survey (websoilsurvey.nrcs.usda.gov).

Additionally, soil chemical properties need to be determined. Previous cropping history, particularly herbicide use, is necessary to prevent seedling damage from herbicide carryover. Seedling damage can result from long-residual herbicides, particularly those used for grass control. Short-residual herbicides are less likely to injure seedlings. Herbicides with rotation restrictions for corn or grain sorghum are an indication of potential seedling damage. Check labels for plant-back intervals and expected suppression.

The species and cultivar selected should be adapted to the field's soil. If several different soils occur in a field, splitting the field should be considered, and changes in seedbed preparation may be required.

Seedbed preparation

A firm, weed-free seedbed is recommended. Seedbed preparation depends on climate, soils, and intended use. In most cases, clean-tilled seedbeds are preferred to establish pastures, especially where precipitation is greater than 32 inches on average annually. The seedbed is tilled as needed to destroy all weeds and leave a firm, friable seedbed. Weed control is a significant requirement for a successful stand. Using a cultipacker or similar equipment before and/or after seeding can greatly improve the stand of grass, especially during seasons of low rainfall. This approach stores soil moisture but requires precipitation after seeding to ensure a successful stand.

More information on no-till seedbeds can be found at bookstore.ksre.ksu.edu/pubs/MF2291.pdf.

Seeding method

Proper seeding depth is important to obtain adequate establishment of native grasses. Most seeds cannot emerge from deeper than 1/2 to 1 inch. Grass drills will handle the fluffy seed of most native grass species and ensure accurate placement, delivering the seed at a uniform rate.

Origin and quality of seed and its effects on seeding rate

Companies selling certified seed are required by law to inform buyers of seed quality. This allows buyers to determine the amount of seed to plant. Native grass seed quality is measured on a pure-live-seed (PLS) basis, which is calculated based on germination and purity.

Seeding rates vary by soil, precipitation, and intended use of the seeding. For help selecting seeding rates and mixtures, consult the county Natural Resource Conservation Service Office, local K-State Research and Extension office, wildlife agencies, or seed dealers.

The example from MF2291 is shown in Figure 2. The full explanation of this table is found in MF2291.

Table 1. Calculating bulk seeding rate in native warm-season grasses.

----- Seed analysis -----						
Seed type	Germination	Hard seed	Purity	% PLS	Seeding rate (PLS lbs)	Bulk pounds
Switchgrass	92	5	98	95.1	3.0	3.16
Big bluestem	85	0	60	51.0	6.0	11.76

Table 2. Typical mixture of native warm-season grasses for loamy soils in central and eastern Kansas.

Species	Pure Live Seed (PLS) lbs/acre	Inclusion % Allow- able	Example Mix %	Pounds PLS/acre to plant
Big bluestem	6.0	10-35	30	1.8
Little bluestem	4.0	10-30	25	1.0
Indiangrass	6.0	0-25	20	1.2
Switchgrass	3.0	5-20	15	0.45
Sideoats grama	6.0	0-20	10	0.6
Total				5.05

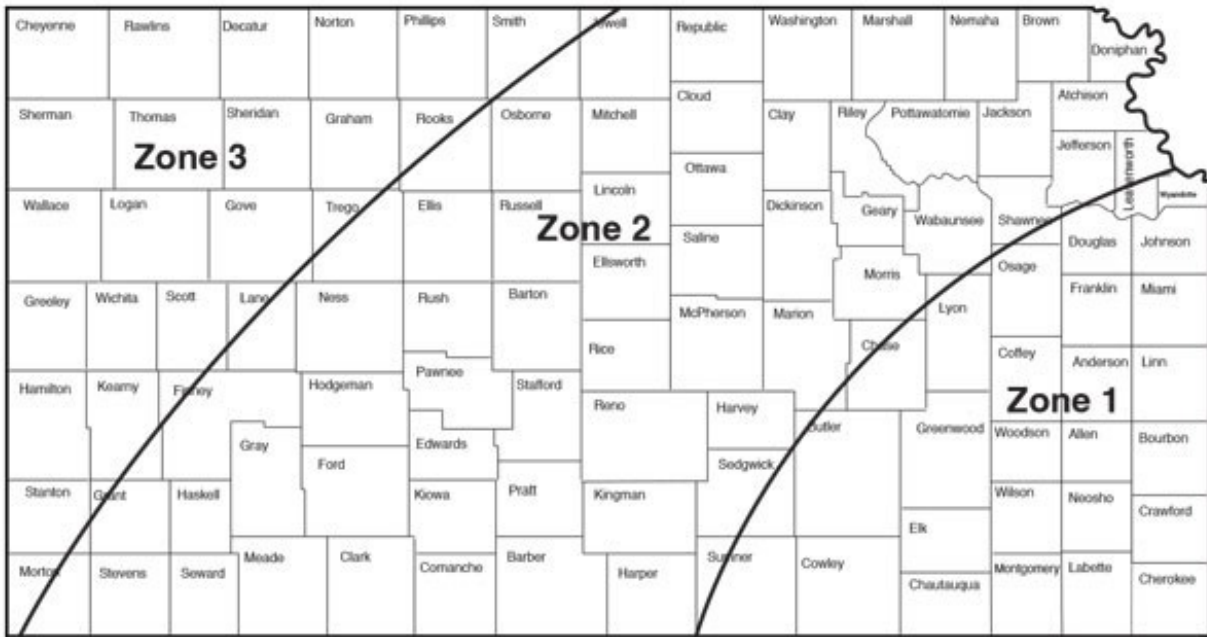
Figure 1. Information on bulk seeding rates for native warm-season grasses. Tables taken from KSRE publication MF2291.

Seeding dates

Recommended planting dates are based on research, but they may be adjusted for your region based on local knowledge. The optimum seeding date for warm-season grasses is about 2 weeks before the average last frost date and at least 6 weeks before hot, dry summer weather (Figure 2). If that is not possible, 1 month before to 3 weeks after the average last frost date may be an acceptable period for seeding. This allows the seedling 6 to 8 weeks to establish the permanent root system before hot, dry summer weather.

Fertilization

In the drier climates of Kansas, fertilizer and lime are not normally required for native species when seeding. Lime is suggested if the pH is below 6.0. Taking soil samples contributes to successful seeding. Consult NRCS or local K-State Research and Extension personnel for local needs. Fertilizing may stimulate weed competition during the establishment phase.



Zone	Optimum	Acceptable
1	March 25–April 10	Feb. 15–May 1
2	April 1–April 20	March 1–May 15
3	April 10–April 30	March 1–May 15

Figure 3. Optimum and acceptable seeding dates for native grass species.

This article originated from the recently released KSRE publication *Establishing Native Grasses (MF2291)* and can be viewed online at bookstore.ksre.ksu.edu/pubs/MF2291.pdf.

More information on factors to consider during and after stand establishment can be found in the aforementioned publication and in a companion article to be published in the next eUpdate.

Tina Sullivan, Northeast Area Agronomist
tsullivan@ksu.edu

Bruno Pedreira, former Southeast Area Agronomist

Walt Fick, Professor Emeritus

3. Proposed listing of the monarch butterfly as a threatened species

The U.S. Fish and Wildlife Service (FWS) is proposing to list the monarch butterfly as a threatened species under the Endangered Species Act (ESA) in the 48 contiguous states. A threatened listing under the ESA can modify or exempt certain species protections to balance conservation efforts with economic impacts. It allows flexibility to incentivize positive conservation actions. Details about prohibitions and exceptions are available on the [FWS website](#).

Public comment period is open

We have an opportunity to help the FWS understand how production agriculture and monarch conservation efforts can coexist by offering insights and suggestions during the public comment period. Comments can be submitted by going to the proposed rule, <https://www.regulations.gov/document/FWS-R3-ES-2024-0137-0001>, and clicking on the blue “comment” box on the left side of the screen. The public comment period is open until **March 12, 2025**.

The FWS is looking for comments related to your personal experience with monarch populations and milkweed habitats. The FWS is particularly seeking comments in 10 areas listed in the proposed rule document. Your feedback should include how the proposed rule might affect your farming practices and suggest solutions to these issues. They are also looking for suggestions on how the rule could balance farming operations and habitat protections. Tips for submitting effective comments can be found [here](#).



Figure 1. Monarch butterfly on a Kansas sunflower. Photo by DeAnn Presley, K-State Research and Extension.

Frannie Miller, Pesticide Safety and IPM Coordinator
fmiller@ksu.edu

Sarah Lancaster, Extension Weed Science Specialist
slancaster@ksu.edu

4. K-State announces 2025 TAPS competitions in Colby and Garden City

Kansas State University's TAPS (Testing Agricultural Performance Solutions) program will expand in 2025 with competitions in Colby and Garden City, Kansas. These programs allow farmers to test innovative farming strategies and collaborate on sustainable solutions for managing water and nutrients.

The 2025 TAPS competitions will challenge farmers, industry professionals, and researchers to refine their decision-making in a risk-free, real-world environment. Participants will manage a farm, making strategic calls on irrigation, fertility, seeding rates, and marketing while navigating unpredictable weather and market conditions. The competition focuses on profitability, input efficiency, and sustainability, providing a platform for testing new technologies and management strategies.

"TAPS provides farmers with the opportunity to test strategies and learn from each other, all while working with real-world data," said 2024 TAPS participant and winner of the Most Economically Profitable at Q-Stable award Russ Martin. "The competition blends hands-on experience with innovative technology, helping us to conserve water and improve farm profitability."

This season introduces fresh challenges alongside proven contests, pushing participants to experiment with precision ag tools and resource management. As competition kicks off, anticipation builds for another year of friendly rivalry, valuable insights, and practical advancements in agricultural decision-making.

"By creating a space for collaboration and innovation, TAPS ensures that farmers can continue to thrive in an increasingly challenging agricultural environment," said Renee Tuttle, KSRE extension associate.

The 2025 TAPS competitions will feature three exciting contests tailored to regional production challenges. In Colby, participants can compete in the *Corn/Forage Sorghum Water Allocation* and/or a *Grain Sorghum Competition*. Garden City will host the *Corn Water Utilization Competition*.

Competition spots are limited and will be assigned on a first-come, first-served basis. To qualify, at least one team member must be an active agricultural producer. Don't miss the chance to compete, learn, and innovate in the 2025 TAPS season!

For more information and to participate, visit <https://www.k-state.edu/taps/>.

Contact:

Renee Tuttle
rstuttle@ksu.edu
620-805-9045

THINK YOU CAN GROW IT BETTER?

LET'S SETTLE IT IN THE FIELD.

JOIN THE
COMPETITION
TODAY!

K-STATE.EDU/TAPS

2025 KSU-TAPS COMPETITIONS

COLBY, KS

- Corn / Forage Sorghum Water Allocation
- Grain Sorghum

GARDEN CITY, KS

- Corn Water Utilization

KSUTAPS
TESTING AG PERFORMANCE SOLUTIONS

Kansas State University Department of Agronomy

2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506

www.agronomy.ksu.edu | www.facebook.com/KState.Agron | www.twitter.com/KStateAgron

5. Wheat Rx seminar on February 12 in Salina

A prescription for producing high-yielding and high-quality wheat is just what the doctor ordered for Kansas wheat producers. [Kansas Wheat Rx](#) combines suggested management practices for the economical and sustainable production of high-quality winter wheat in Kansas.

Mark the calendar now for an upcoming seminar on February 12 at the Great Plains Corporate Office in Salina, KS. Speakers will discuss variety selection, weed control, disease management, soil fertility, and more. Attendees will also learn more about Great Plains Ag, tour its Salina facility, and about a new project between K-State and the Kansas Wheat Commission to help growers benefit from ongoing government and private conservation programs.

Program agenda:

8:30 AM – Coffee and registration
8:50 – Welcome by Aaron Harries, Kansas Wheat Commission
9:00 – Dr. Allan Fritz, K-State wheat breeder
9:45 – Dr. Sarah Lancaster, K-State weed science specialist
10:30 – Break
10:45 – Dr. Kelsey Andersen Onofre, K-State wheat pathologist
11:30 – Dr. Dorivar Ruiz Diaz, K-State soil fertility specialist
12:15 – Lunch
1:00 – Dr. Romulo Lollato, K-State wheat and forage specialist
1:45 – Great Plains facility tour

This event is free for members of the Kansas Association of Wheat Growers (KAWG). It costs \$110 for non-members; however, the event fee includes KAWG membership.

Online registration is open at kswheat.com/wheatrx

These programs are part of Wheat Rx, a partnership between Kansas Wheat and K-State Research and Extension, to disseminate the latest research recommendations for high-yielding and high-quality wheat to Kansas wheat farmers. This effort includes a series of extension publications at kswheat.com/wheatrx and educational outreach like the upcoming seminars.

FREE FOR KAWG MEMBERS
\$110 FOR NON KAWG MEMBERS
(PRICE INCLUDES KAWG MEMBERSHIP AND FREE EVENT ATTENDANCE)

KANSAS WHEAT Rx

A combination of suggested management practices
for economical and sustainable production
of high-quality winter wheat in Kansas



FEBRUARY 12, 2025

8:30AM - 3PM

LUNCH AND FACILITY TOUR INCLUDED

SALINA

Great Plains Manufacturing
(1525 E. North St. - Salina, KS)

REGISTER: kswheat.com/wheatrx

Romulo Lollato, Wheat and Forages Specialist
lolato@ksu.edu

Kansas State University Department of Agronomy
2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506
www.agronomy.ksu.edu | www.facebook.com/KState.Agron | www.twitter.com/KStateAgron

6. K-State Crop Talk webinar series kicks off on February 11

The popular K-State Crop Talk online webinar series is back and set to start on February 11, 2025. The Crop Talk series will highlight several topics important to crop producers in north central and northwest Kansas. Topics include weed management, maximizing irrigation applications, leveraging precision ag tools, dryland tillage and rotations, and corn stunt. 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 on Tuesday, February 11.

Upon registration, participants will receive an email with instructions on how to attend via Zoom or YouTube. These virtual webinars are open to all, and there is no cost. Register online at <https://www.northwest.k-state.edu/events> or call your local extension office.

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

February 11 – Weed Management in the Age of New Technology

Sarah Lancaster, K-State Weed Science Specialist

February 18 – Getting the Most out of Your Irrigation Water

Jonathan Aguilar, K-State Irrigation Engineer

February 25 – Leveraging Precision Ag Tools

Deepak Joshi, K-State Precision Ag Specialist

March 4 – Dryland Tillage and Rotations

Lucas Haag, K-State Northwest Area Agronomist

March 11 – A New Corn Disease: Corn Stunt

Anthony Zukoff, K-State Entomologist and Rodrigo Onofre, K-State Plant Pathologist

Broadcast Live
12:00pm - 1:00pm CST via ZOOM and YouTube



CROPtalk
Webinar Series



Focused on crop production in Northwest and North Central Kansas

February

11 **Weed Management in the Age of New Technology**

Sarah Lancaster,
K-State Extension Weed Scientist

18 **Getting the Most Out of Your Irrigation Water**

Jonathan Aguilar,
K-State Irrigation Engineer

25 **Leveraging Precision Ag Tools**

Deepak Joshi,
K-State Extension Precision Ag Specialist

Dryland Tillage and Rotations

Lucas Haag,
K-State NW Area Agronomist

A New Corn Disease: Corn Stunt

Anthony Zukoff,
K-State Entomologist
Rodrigo Onofre,
K-State Plant Pathologist

Certified Crop Advisor (CCA)
Credits will be offered

March

For more information, contact Sandra L. Wick
Post Rock Extension District Crop Production Agent

register to attend at
www.northwest.ksu.edu/events

Links for joining will be sent after registration



swick@ksu.edu 785-282-6823 postrock.ksu.edu

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7. Weed Management Schools for northwest and north central Kansas

A series of weed management schools will take place in northwest and north central Kansas during the month of February and are hosted by local K-State Research & Extension county and district offices.

Controlling difficult weeds continues to be a significant challenge for producers. To address the topic of weed control, K-State Research and Extension has scheduled five regional weed control programs in February. This program has been designed to help producers and agri-business retailers improve weed control with challenging species and weather conditions.

The dates and locations are:

February 12 in St. Francis, KS – 5:30 p.m. to 8:30 p.m.
Cheyenne Co. 4-H Building

February 13 in Phillipsburg, KS– 9:30 a.m. to 12:30 p.m.
Phillips Co. Fair Building

February 13 in Ness City, KS – 5:30 p.m. to 8:30 p.m.
Ness County 4-H Building

February 17 in Mankato, KS – 3:00 p.m. to 6:00 p.m.
Mankato Community Center 214 N. High Street

February 18 in Holyrood, KS - 9:30 a.m. to 12:30 p.m.
St. Peter Lutheran Church Parish Hall 209 S County Rd

Presenters at the schools include Sarah Lancaster, K-State extension weed science specialist, Jeremie Kouame, K-State weed scientist, and local KSRE extension agents. Topics will include:

- A systems approach to weed management
- Pre-emergent herbicides and climate
- Strategic and occasional tillage for weed management
- Know your K-State Chemical Weed Control book

Three credit hours for 1A certification and CCA credits have been applied for.

There is no cost for the schools. However, pre-registration is requested by Wednesday, February 5, for all meetings. You can register online at www.northwest.ksu.edu/events or by calling your local Extension Office.

2025 K-State NW Weed Management Schools

Topics

- A systems approach to weed management
- Pre-emergent herbicides and climate
- Sorghum pre-emergent and weed size for post applications
- Strategic and Occasional Tillage

Speakers

- Sarah Lancaster, K-State Extension Weed Specialist
- Jeremie Kouame, K-State Weed Scientist

There is no cost to attend. See specific location information at www.northwest.ksu.edu/events



Wednesday	Thursday	Thursday	Monday	Tuesday
February 12, 2025	February 13, 2025	February 13, 2025	February 17, 2025	February 18, 2025
5:30pm - 8:30pm	9:30am - 12:30pm	5:30pm - 8:30pm	3:00pm - 6:00pm	9:30am - 12:30pm
Cheyenne Co. 4-H Building North College St. St. Francis, KS	Phillips County Fair Building 1481 HWY 183 Phillipsburg, KS	Ness County 4-H Building 302 W. Nevada Ness City, KS	Mankato Community Center 214 N. High Street Mankato, KS	St. Peter Lutheran Church Parish Hall 209 S County Rd Holyrood, KS
Sunflower District 785-462-6281	Phillips-Rooks District 785-543-6845	Walnut Creek District 785-798-3921	Post Rock District 785-282-6823	Midway District 785-472-4442 Cottonwood District 785-628-9430



REGISTER NOW >



Please register by **Feb 10th**
www.northwest.ksu.edu/events

Kansas State University is committed to making its services, activities and programs accessible to all participants. If you have special requirements due to physical, vision or hearing disability, contact Jeanne Falk-Jones, K-State Agronomist for 785-462-6281.

8. Weed Management Schools for southwest and south central Kansas

A series of weed management schools will occur in southwest and south central Kansas hosted by local K-State Research & Extension county and district offices.

Controlling difficult weeds continues to be a significant challenge for producers. To address the topic of weed control, K-State Research and Extension has scheduled four regional weed control programs in February and March. This program has been designed to help producers and agri-business retailers improve weed control with challenging species and weather conditions.

The dates and locations are:

February 11 in Liberal, KS – 9:00 AM (CT)
Seward County Activity Center, 810 Stadium Ave, Liberal, KS 67901
RSVP by calling 620-544-4359

February 12 in Syracuse, KS – 8:00 AM (MT)
Hamilton County Fair Building, 806 S Main St, Syracuse, KS 67878
RSVP to Lora Horton at ljhorton@ksu.edu or 620-384-5225

March 11 in Kiowa, KS – 9:00 AM (CT)
Kiowa Community Center, 119 S 5th St., Kiowa, KS 67070
RSVP to Matt Rhodes at amrhodes@ksu.edu or 620-886-3971

March 11 in Lewis, KS – 4:00 PM (CT)
Mankato Community Center 214 N. High Street
RSVP to Baley Doggett at baley@ksu.edu or 620-659-3004

Presenters at the schools include Pat Geier, K-State extension weed scientist, Jeremie Kouame, K-State weed scientist, and Deepak Joshi, K-State precision ag extension specialist. Topics will include:

- Weed identification
- Weather influences and herbicides
- Perennial grass control in cropland
- Robots/precision technologies for weed management

CCA credits have been applied for.

There is no cost for the schools and a meal is provided at each school. However, pre-registration is requested for all meetings. You can register online at www.northwest.ksu.edu/events or by calling your local Extension Office.