Issue 1070

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09/04/2025

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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eUpdate Table of Contents | 09/04/2025 | Issue 1070

1. Too cool too soon? Finishing up grain sorghum before the first freeze

With the cooler-than-average temperatures, questions have come up regarding growing degree units (GDU) and how far behind their accumulation might be for later-maturing crops like grain sorghum. Grain sorghum is much like corn and cotton, which need to hit growing degree unit thresholds to move through growth stages and to finish grain (Table 1). Most sorghum hybrids grown in Kansas require around 1400 to 2000 GDUs to reach mid-bloom. One key difference in GDUs for sorghum compared to corn is that the maximum temperature used in accumulating growing degree days is 100°F in sorghum compared to 86°F in corn.

It's important to note that the main differences in heat units (and thus time) for the progression of a short-season compared to a full-season sorghum hybrid are in the vegetative stages. Short-season hybrids generally produce fewer leaves before reaching boot. After the boot stage, the number of GDU's needed for progression to physiological maturity is similar for short and full-season hybrids.

Table 1. The cumulative GDUs required to reach key growth stages in grain sorghum and the remaining GDUs required to reach black layer.

Cumulative GDUs		Growth Stage	GDUs to Black Layer	
Med Early	Med Late		Med Early	Med Late
99	198	Emergence	2457	2808
252	360	Third Leaf	2304	2646
396	594	Fifth leaf	2160	2412
702	1152	GPD	1854	1854
954	1404	Flag Leaf	1602	1602
1206	1647	Boot	1350	1359
1440	1908	Mid Bloom	1116	1098
1746	2196	Soft Dough	810	810
2196	2646	Hard Dough	360	360
2556	3006	Black Layer	0	0

Cumulative sorghum GDUs are generally greatest in south central and southeast Kansas and least in northwest Kansas, regardless of planting date, because of a combination of latitude and altitude differences. As of August 31:

- For sorghum planted on **May 20**, GDU accumulation ranged from 2200 to 2900, but declined rapidly with later planting dates (Figure 1).
- For sorghum planted on **June 1**, cumulative GDUs ranged from 2100 to 2700.
- For sorghum planted on **June 10**, cumulative GDUs ranged from 2000 to 2500.
- For sorghum planted on **June 20**, cumulative GDUs ranged from 1700 to 2200.

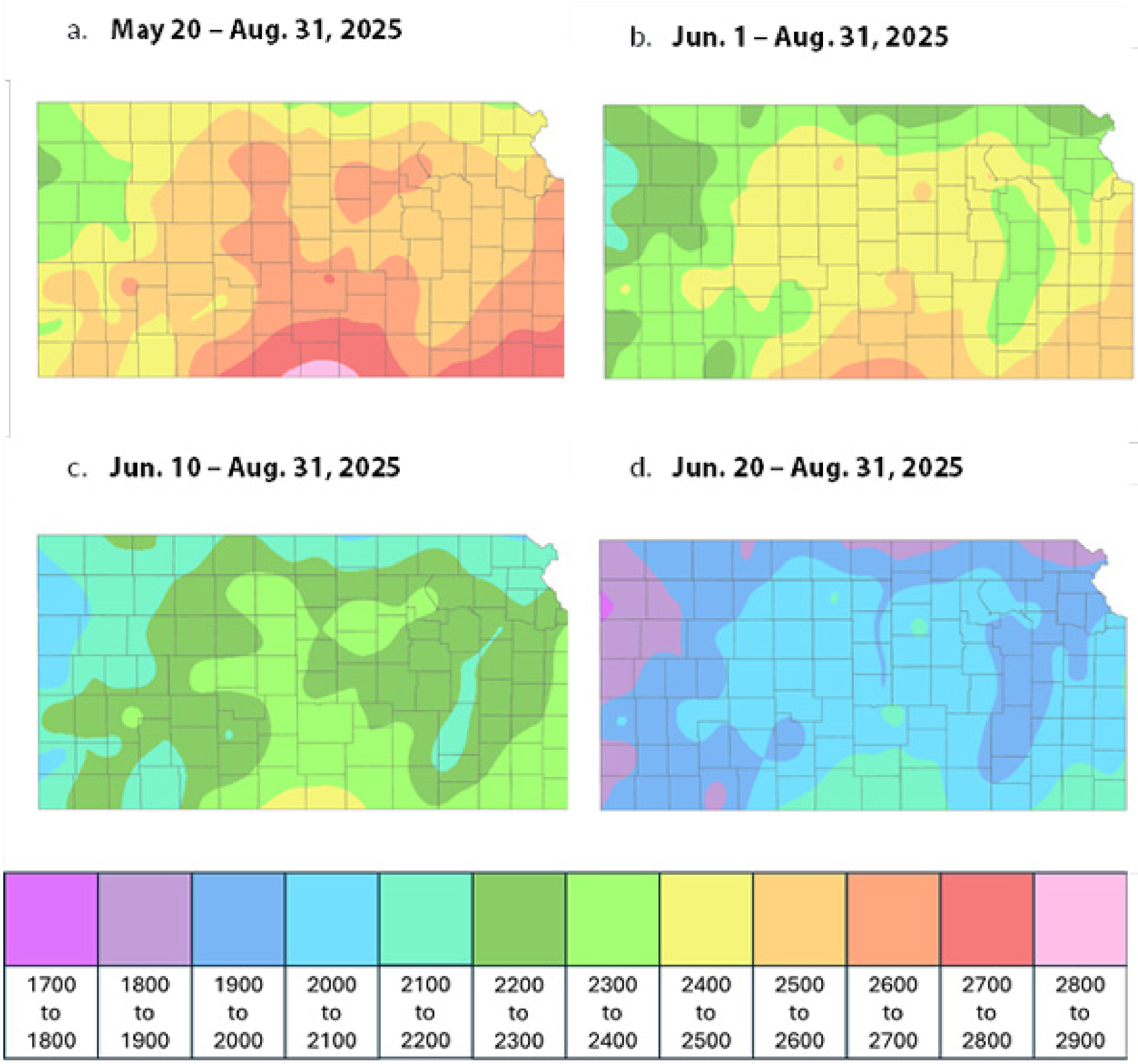

Figure 1. Contour plot of accumulated growing degree days for sorghum (GDDs) across Kansas during four different planting dates (May 20, June 1, June 10, and June 20).

Using long-term weather data, Figure 2 shows the probabilities for a medium maturity sorghum hybrid reaching maturity before the typical first fall freeze. This graphic is from the K-State Sorghum Production Handbook, https://bookstore.ksre.ksu.edu/pubs/grain-sorghum-production-handbook_C687.pdf.

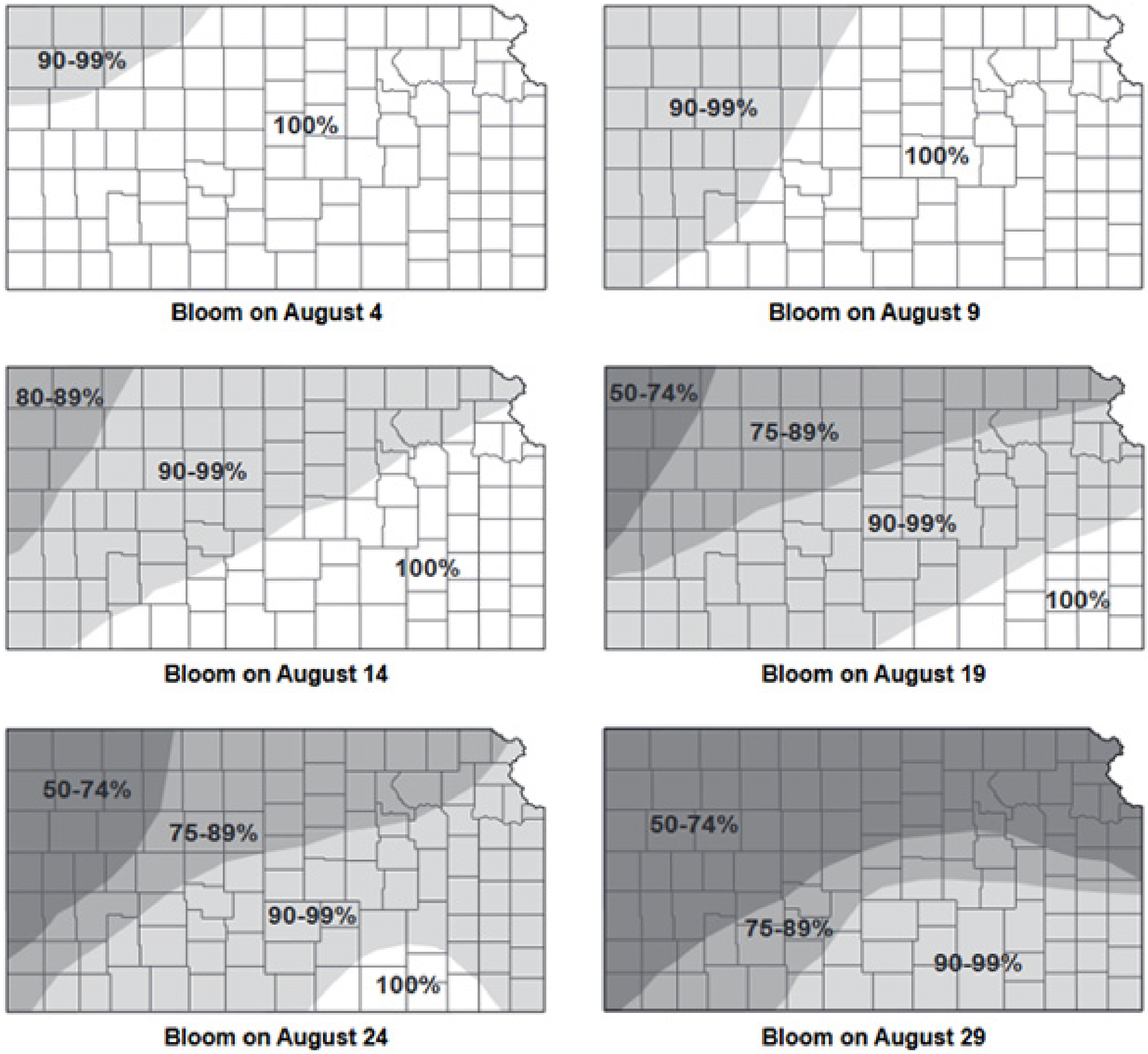

Figure 2. Probability of sorghum maturing before freeze for flowering dates from August 4 through August 29. From K-State C687, Sorghum Production Handbook.

When looking at these sets of maps together, for the June 20 planting date, areas of the western ¼ of the state and northern Kansas have accumulated 1700 to 2000 GDU's, meaning most sorghum hybrids planted on June 20 would be mid-bloom to soft dough at the end of the month, assuming normal progression of the plant. Incorporating the information from Figure 2, there is certainly some risk that medium and full season hybrids planted at the end of the planting window may not fully mature.

It's important to note that a key characteristic of sorghum it's its ability to "shut down" and delay phenological development when under severe drought stress. The estimated GDUs for each growth stage assume normal progression of the plant. If the plant slows and stops development due to drought and then revives after late season precipitation, then obviously it will take more heat units than estimated to reach maturity.

At the fringes of the season, small differences in bloom date can make large differences in the probability of success. For example, a bloom date of August 24 compared to August 29 drastically shifts the probabilities of success for much of western Kansas.

Kansas during four different time periods.

The average first fall freeze date in Kansas ranges from September 30 – October 4 in northwest Kansas to October 28 to November 1 in south central and southeast Kansas. The expected number of GDDs for sorghum from September 1 through the average date of first freeze is shown in Figure 3.

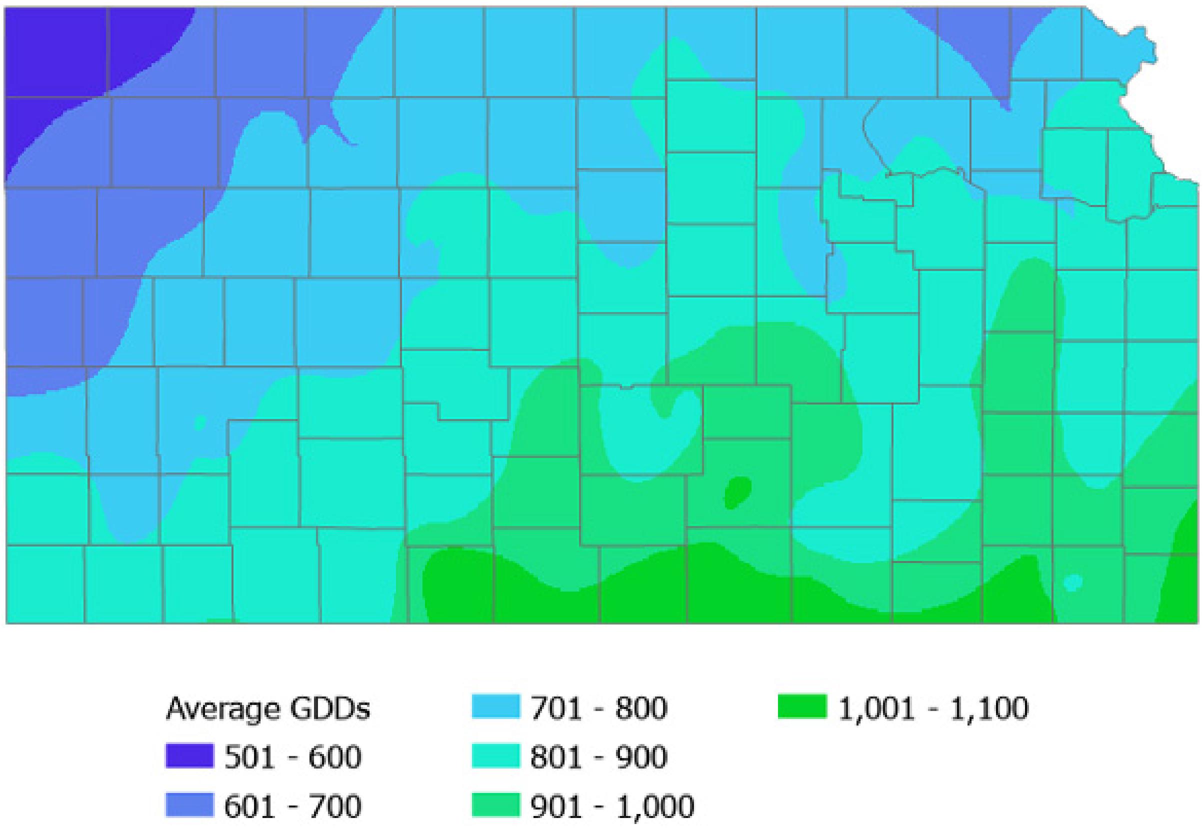

Figure 3. Expected average of accumulated GDUs for sorghum from Sept. 1 until the average date of first freeze for Kansas. Map generated by Matthew Sittel/K-State Weather Data Library.

Will sorghum reach maturity before the first freeze?

The answer is, "it depends." We will continue to monitor sorghum growth and development throughout the remainder of the growing season. If the sorghum is killed by a freeze before maturity, producers should first analyze the crop for the test weight and yield potential before making any decisions about grazing or harvesting the crop for silage.

For more information on this, see "Harvesting Grain from Freeze-damaged Sorghum," K-State publication MF-1081: http://www.ksre.ksu.edu/bookstore/pubs/mf1081.pdf.

Lucas Haag, Agronomist-in-charge at Tribune
lhaag@ksu.edu

Logan Simon, Southwest Area Agronomist
lsimon@ksu.edu

Tina Sullivan, Northeast Area Agronomist
tsullivan@ksu.edu

Matthew Sittel, Assistant State Climatologist
msittel@ksu.edu

2. Wheat planting: Be cautious of planting too early

The general target date for planting wheat for optimum grain yields in Kansas is within a week of the best pest management planting date, or BPMP (formerly known as the "Hessian fly-free") date (Figure 1). Planting after these dates not only benefits grain yield, but may help reduce the risk of serious pests and diseases that can damage the wheat crop in Kansas. If forage production is the primary goal, earlier planting (mid-September) can increase forage yield. However, if grain yield is the primary goal, then waiting until the BPMP date to start planting is the best approach (Figure 3). Planting in mid-September is ideal for dual-purpose wheat systems where forage yields need to be maximized while reducing the effects of early planting on reduced grain yields.

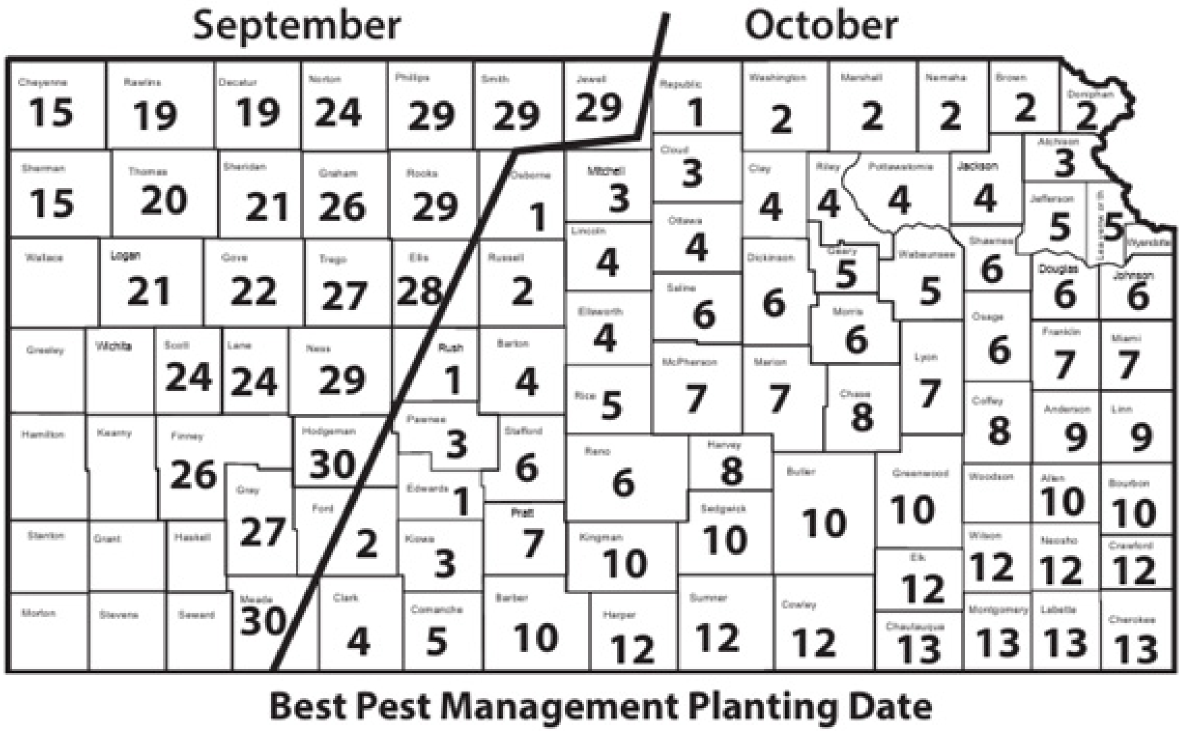

Figure 1. These dates were established several years ago. Although fields may still be infested with Hessian fly when planted after these dates if the weather is mild, later planting dates generally reduce problems from Hessian fly, aphids, wheat curl mites, and many diseases. Map from https://bookstore.ksre.ksu.edu/pubs/wheat-insect-pest-management-2025_MF745.pdf**.**

Optimum wheat planting dates in Kansas depend on location within the state (Figure 2).

Zone 1: September 10-30

Zone 2: September 15 – October 20

Zone 3: September 25 – October 20

Zone 4: October 5 – 25

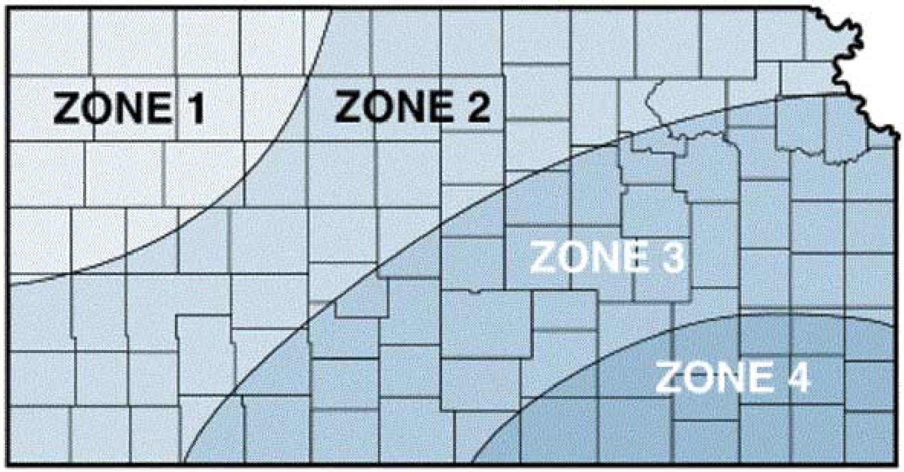

Figure 2. Optimum wheat planting dates by zone in Kansas.

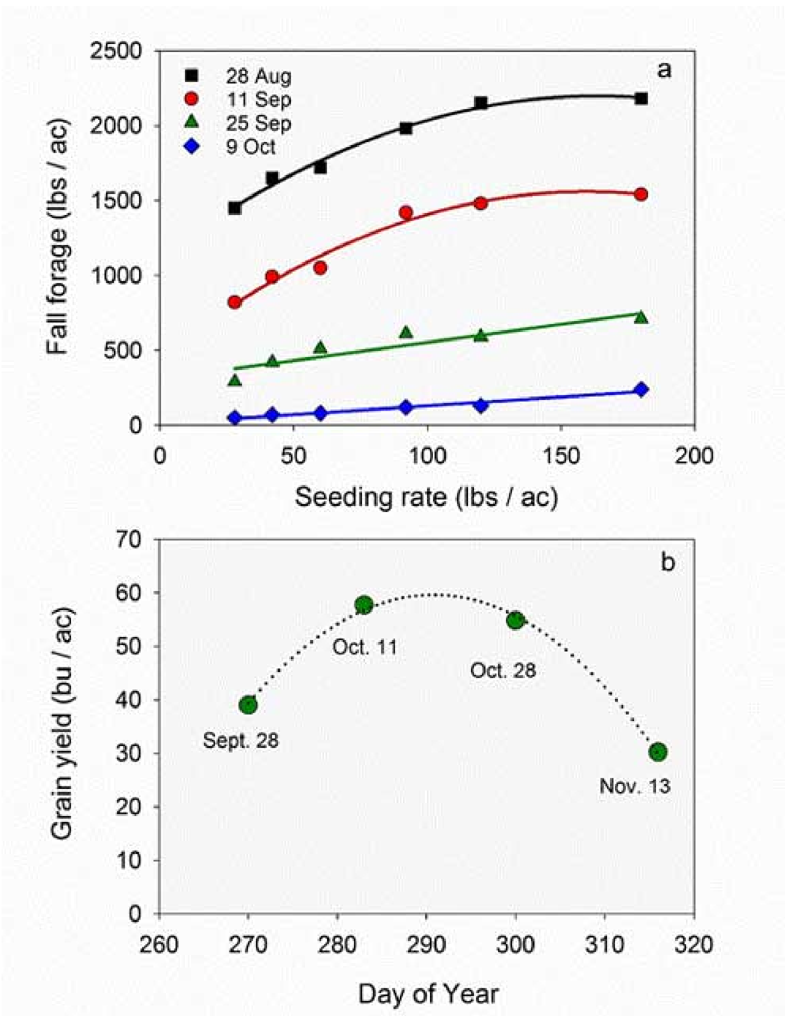

Figure 3. Effect of planting date and seeding rate on wheat fall forage yield in Lahoma, north-central Oklahoma (a) and effect of planting date on wheat grain yield near Hutchinson, south-central Kansas (b). Figure adapted from KSRE numbered publication MF3375.

While planting date effects on wheat yield shown in Figure 3 are generally consistent, they depend heavily on environmental conditions and disease pressure during the growing season. In some years, earlier planting performs best; in others, later planting has the advantage, usually related to weather in the fall and spring. For instance, early-planted fields with a warm fall might produce excessive biomass that will use substantial water during the fall. If the following spring is dry, the soil water deficit during grain filling can reduce grain yield. Conversely, a warm fall would favor tillering of a later-planted wheat crop, helping to compensate for this delay. The opposite is also true: when cold temperatures arrive early, an earlier-planted crop might perform better than a later-planted crop due to its ability to produce enough fall tillers to still maximize grain yield.

Research conducted by Merle Witt with late-sown wheat in Garden City from 1985 through 1991 is summarized in Figure 4. Averaged across all these years, delaying wheat sowing from October 1 to November 1 delayed the heading date by 6 days and decreased wheat yields by 23%. The grain-filling period was progressively shortened by about 1.7 days and occurred under hotter temperatures (about 1.5°F) for every month of delay in sowing date.

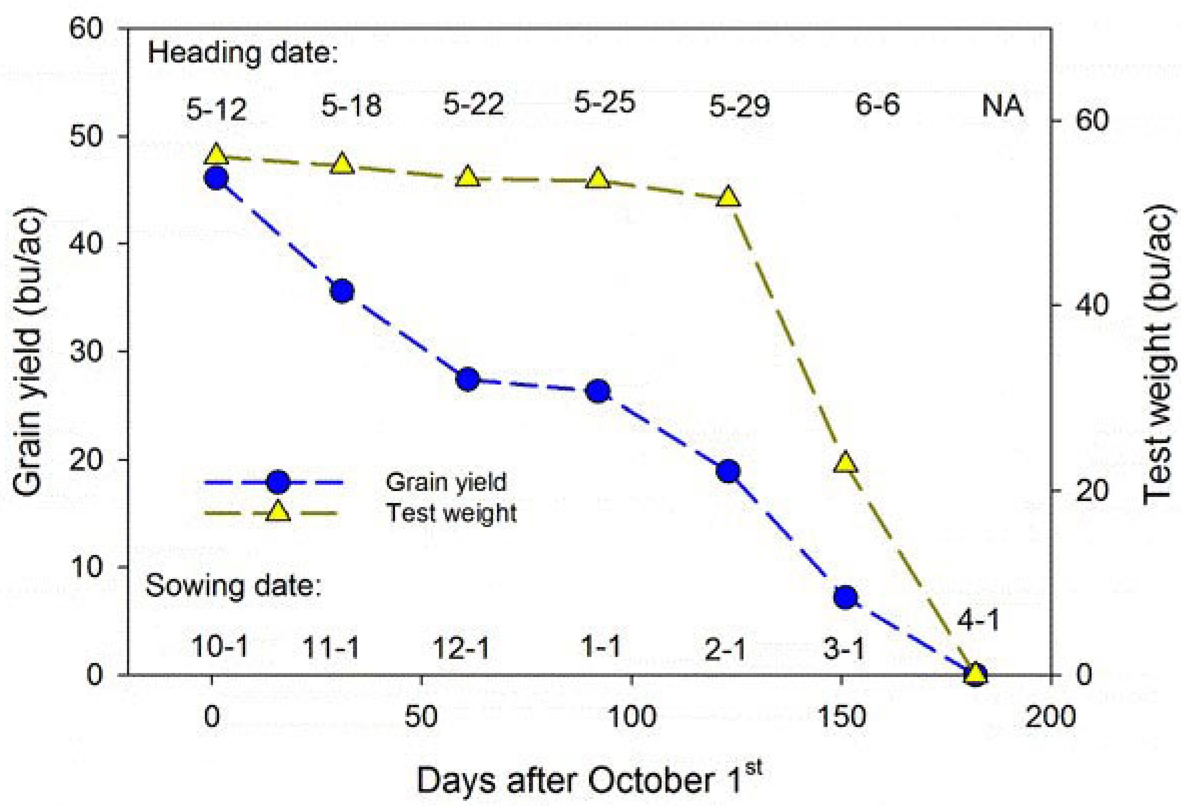

Figure 4. Wheat grain yield, test weight, and heading date responses to sowing date between 1985 to 1991. [Data adapted from Kansas Agric. Exp. St. SRL 107](#).

In dry years, wheat may emerge unevenly, with poor crown root development and fall tillering. Conversely, if fields remain too wet past mid-October, planting is often delayed well beyond the optimum date. After such unusual years, producers may be tempted to plant earlier than recommended when soils are favorable, but early planting increases the risk of diseases, insect pests, weeds, and excessive fall growth.

Potential risks of planting wheat early

Increased risk of **wheat streak mosaic complex**. Wheat curl mites that spread these viruses survive the summer on volunteer wheat and certain other grasses. As those plants die off, the wheat curl mites leave in search of new plants to feed on. Early-planted wheat is likely to become infested and, thus, become infected with wheat streak mosaic virus, high plains wheat mosaic virus, and Triticum mosaic virus. The wheat curl mites are moved by wind and can be carried a mile or more before dying, so if wheat is planted early, make sure all volunteer wheat within a mile is completely dead prior to planting. This year, we are recommending avoiding planting wheat during regional "**wheat-free windows"** to lower the risk of mite-transmitted viruses (Figure 5).

For growers considering planting early, a good management consideration would be to select wheat varieties with resistance to the wheat streak mosaic virus and/or with tolerance to the wheat curl mite, especially in the western portions of the state. Updated disease and insect ratings for wheat varieties can be found here:
(https://bookstore.ksre.ksu.edu/item/kansas-wheat-variety-guide-2025_MF991).

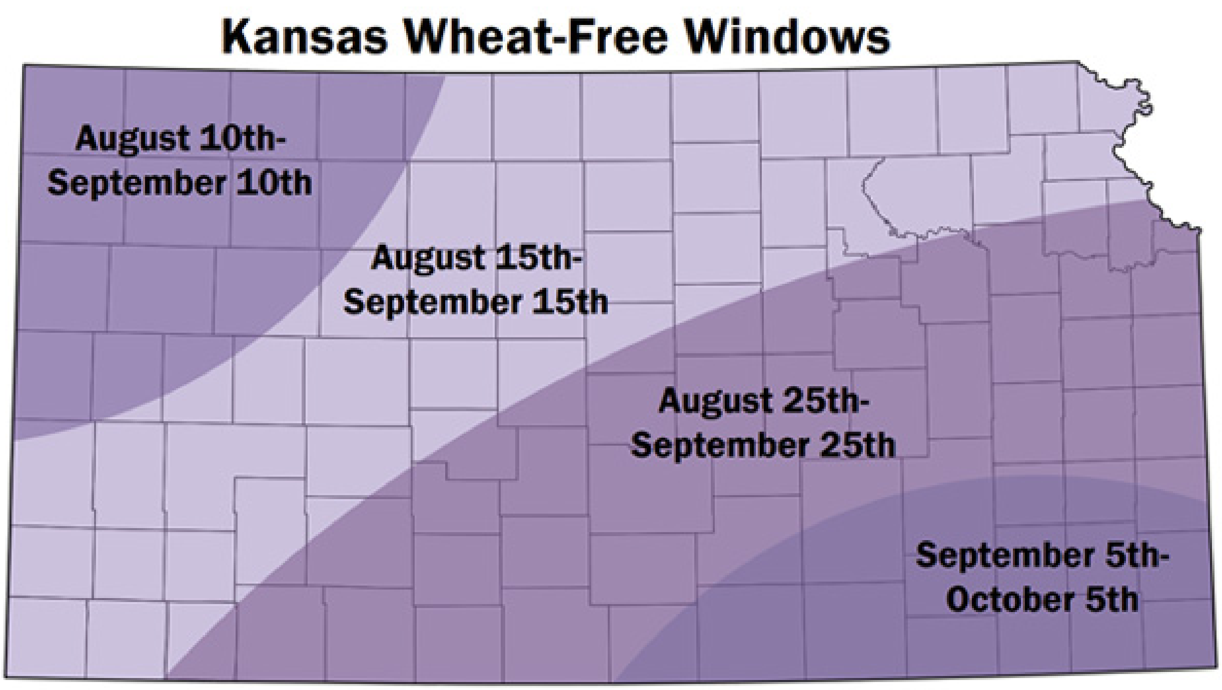

Figure 5. Proposed wheat-free windows in different regions of Kansas to reduce the likelihood of a wheat streak mosaic complex outbreak during the subsequent season. Wheat-free windows are defined as the 30-day period prior to the start of the optimal winter wheat planting date for the region. Graphic by Kelsey Andersen Onofre, K-State Research and Extension.

Increased risk of **Hessian fly**. Over the summer, Hessian fly pupae live in the old crowns of wheat residue. After the first good soaking rain in late summer or early fall, these pupae (or "flaxseed") will hatch out as adult Hessian flies and start looking for live wheat plants to lay eggs on. They are most likely to find either volunteer or early-planted wheat. After the BPMP date, many of the adult Hessian flies in a given area will have laid their eggs, so there is generally less risk of Hessian fly infestation for wheat planted after that date. Hessian fly adult activity has been noted through November or early December in Kansas. If planting early, consider varieties with improved tolerance to Hessian fly.

Armyworms and other lepidopteran larvae may also still pose a serious problem to early planted wheat. They may feed on the green wheat plants until the first cold front comes through (temperatures in the mid-20-degree F range for a couple of hours). Insecticide seed treatments do not work well against lepidoptera larvae.

Grasshopper populations typically decline in late summer and early fall, as females lay eggs in August and September and then die. By this time of year, many surviving grasshoppers are parasitized, sick, or otherwise less interested in feeding compared to earlier in the season. If treatment is needed, foliar applications can often be limited to field edges where grasshoppers are moving in, rather than applied broadly. In contrast, seed treatments are applied before planting, well before infestations can be assessed, and are rarely justified in Kansas.

Most wheat insect and mite pests can be effectively managed in the fall by planting as late as agronomically feasible in your area and destroying all volunteer wheat at least two weeks before planting.

Fall Armyworm/Armyworm Considerations in Volunteer Wheat

Because of the large armyworm and fall armyworm populations this year and in years past, some producers are considering adding insecticide to volunteer wheat herbicide applications to save on costs. However, this is not recommended. First, destroying volunteer wheat will starve larvae, push them into pupation, or expose them to predators. Second, insecticides should only be used when pests are at a vulnerable stage and above treatment thresholds. Finally, any insecticide applied now will lose activity long before planted wheat emerges. Control the volunteer wheat, but resist the urge to tank-mix insecticide.

Increased risk of **barley yellow dwarf**. There are over 20 species of aphids that use wheat as a host. Many types of aphids can spread barley yellow dwarf. In Kansas, greenbugs and bird cherry-oat aphids are the primary vectors of this viral disease. These insects are more likely to infest wheat during warm weather early in the fall than during cooler weather. Planting wheat after the BPMD reduces the risk of problems with aphids and barley yellow dwarf. If planting early, consider varieties with improved tolerance to Barley Yellow Dwarf virus, especially in central and eastern Kansas, or consider using seed treatments with imidacloprid (such as Gaucho XT or Rancona Crest). If using insecticide seed treatments for wheat pests, please remember: They are most effective for the first 30 days after planting, and they are not effective on mites or lepidopteran larvae, i.e., armyworms or army cutworms, etc.

Increased risk of **excessive fall growth and fall tillering**. For optimum grain yield and winter survival, wheat should enter winter with established crown roots and 3-5 tillers. Early-planted wheat can grow much more than this, especially if moisture, temperature, and nitrogen levels are not limited. Excessive fall biomass can deplete soil moisture through unproductive vegetative growth, increasing drought stress in spring and susceptibility to winter injury (Figure 6). The wheat on the left (showing white discoloration of the leaves) was planted in mid-September for dual-purpose use and had excessive fall growth, nearly 3,000 pounds of dry matter/acre. The wheat on the right was planted early to mid-October for grain-only and had much more limited fall biomass. The white discoloration of the high-biomass plots occurred after a late-winter/early-spring freeze that was more damaging to the dual-purpose crop. Notice the darker green plots in the upper left corner amid discolored plots: while these were planted early, their growth was cut back by simulated grazing.

Figure 6. Aerial photo of side-by-side wheat trials near Hutchinson, KS, during the 2021-22 growing season. Photo taken in March 2022 by Jorge Romero Soler.

Increased risk of **take-all, dryland foot rot, and common root rot**. Take-all is usually worse in early-planted wheat than in later-planted wheat. In addition, one of the ways to avoid dryland foot rot (*Fusarium graminearum* and other *Fusarium* species) is to avoid early seeding. This practice promotes large plants that more often become water-stressed in the fall, predisposing them to invasion by the fungi. Early wheat planting also favors common root rot because this gives the root rot fungi more time to invade and colonize root and crown tissue in the fall. Fungicide seed treatments are an option for early-season seedling diseases, although they only provide suppression for later infections. More information on seed treatments: https://bookstore.ksre.ksu.edu/pubs/MF2955.pdf

Grassy weed infestations become more expensive to control. If cheatgrass, downy brome, Japanese brome, or annual rye come up before the wheat is planted, they can be controlled with glyphosate or tillage. If wheat is planted early and these grassy weeds emerge after the wheat, producers will have to use an appropriate grass herbicide to control them. If a field has a history of grassy weed problems, consider planting a Clearfield or CoAxium wheat variety.

Germination problems due to high soil temperatures. Early-planted wheat is sown in hotter soils, which may become problematic because some wheat varieties are sensitive to high temperatures during germination. In fact, some varieties will not germinate when soil temperatures are greater than 85°F. Additionally, some varieties can have their coleoptile length reduced by as much as 40% in hot compared to cool soils. If planting early, it is important to select varieties that do not have high-temperature germination sensitivity or sow sensitive varieties later in the fall when soil temperatures have cooled down.

Emergence problems due to shortened coleoptile length. Hotter soils tend to decrease the coleoptile length of the germinating wheat. Therefore, deeply planted wheat may not have long enough coleoptiles to break through the soil surface, resulting in decreased emergence and poor stand establishment. When soil temperatures are hot, it is often better to plant wheat at a shallower depth (3/4 to 1 inch deep), even if moisture is absent in the top layers of soil. Planting wheat deep (>2 inches) increases the risk of poor emergence and unacceptable stands.

Take-home message

Early planting of wheat can increase risks that affect stand establishment and yield:

- **Disease risk:** Greater chance of insect- or mite-transmitted viral diseases.
- **Emergence challenges:** High temperatures can reduce germination and shorten coleoptile length in some varieties.
- **Optimal planting:** Aim for the recommended planting window whenever possible.
- **Variety selection:** If planting early (due to moisture or dual-purpose systems), choose varieties tolerant to major regional yield-limiting factors.
- **Seed treatments:** Strongly consider fungicide and insecticide seed treatments when planting early in Kansas.

Romulo Lollato, Extension Wheat and Forages Specialist
lollato@ksu.edu

John Holman, Cropping Systems Agronomist, Southwest Research-Extension Center
jholman@ksu.edu

Kelsey Andersen Onofre, Extension Wheat Pathologist
andersenk@ksu.edu

Erick DeWolf, Wheat Pathologist
dewolf1@ksu.edu

Jeff Whitworth, Extension Entomologist
jwhitwor@ksu.edu

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

3. Herbicides for cool-season hayfields and pastures damaged by fall armyworms

There were a large number of fall armyworm infestations in July and August in hayfields and pastures throughout parts of eastern Kansas. In most fields harvested in mid-to-late July, cool-season smooth brome and tall fescue are starting to regrow slowly due to hotter temperatures. Some of these fields were sprayed with insecticide already, but there is potential for a second generation of fall armyworms to cause additional damage while the grasses use their reserves for regrowth. As a result, some damaged fields may need to be replanted. Fields with localized patches of damaged forage are likely to have weed encroachment, likely from late summer and winter annuals (Figure 1).

Figure 1. Broadleaf weed horsenettle encroaching into a fall armyworm-damaged smooth brome hayfield in Jackson County. Photo by Tina Sullivan, K-State Research and Extension.

For the dead fields, growers could reseed or overseed in the fall or spring, but weeds should be controlled to limit competition and additional weed seed in the seed bank. Controlling emerged weeds will be critical for successfully establishing a new stand. Light tillage or a non-selective herbicide can be used to control any emerged winter annual weeds prior to seeding. Herbicide options are limited during establishment (Table 1). Mowing is a non-chemical option that could be considered to reduce weed competition and prevent weed seed production during grass establishment. If a herbicide application is needed prior to seeding, be sure to observe plant-back intervals that may interfere with establishment.

On the other hand, in some of the damaged fields, growers can wait to see if the desired grass will come back. In this case, more herbicide options are available; however, several will suppress forage growth (Table 1).

Table 1. Herbicides labeled for post-emergence weed control in cool-season forage grasses (SB=smooth brome; TF=tall fescue). Consult the label for the appropriate rate and adjuvant selection.

Herbicide	Active ingredient	Desired grass species	Weeds controlled	Used in establishment	Plant-back interval	Smooth brome sup pression
2,4-D	2,4-D	SB, TF	Broadleaf	After 6 leaf stage	30 days	Unlikely
Amber	Triasulfuron	SB	Broadleaf	60 days after emergence	4 months	Unlikey
Chaparral	Metsulfuron + aminopyralid	SB, TF	Broadleaf	No	1 year	Likely
Cimarron Plus	Metsulfuron + chlorsulfuron	SB, TF	Broadleaf	6 months – SB 24 months - TF	2 months	Likely
Clarity, others	Dicamba	SB, TF	Broadleaf	No	45 days per 16 fl oz/A	May be injured with > 16 fl oz/A
Crossbow	2,4-D + triclopyr	SB, TF	Broadleaf	No	3 weeks	Possible
DuraCor	Aminopyralid + florpyrauxifen	SB, TF	Broadleaf	No -SB 3 leaves - TF	45 days – SB 15 days - TF	Likely
Escort, others	Metsulfuron	SB, TF	Broadleaf	6 months – SB 24 months - TF	2 to 4 months – SB 18 months - TF	Likely
Facet, others	Quinclorac	SB, TF	Grass/broadleaf	No	10 months	Unlikely
Grazon P+D	Picloram + 2,4-D	SB, TF	Broadleaf	No	60 days – SB 21 days - TF	Likely
GrazonNext HL	Aminopyralid + 2,4-D	SB, TF	Broadleaf	No	Grasses may be reseeded in the fall	Likely

					following an application in spring or early summer	
Huskie FX	Pyrasulfotole, bromoxynil, fluroxypyr	TF	Broadleaf	> 2 leaves	1 month	Not labeled for use in SB
Milestone	aminopyralid	SB	Broadleaf	No	1 year	Likely
PastureGard HL	Triclopyr + fluroxypyr	SB, TF	Broadleaf	After tillering	3 weeks	Possible
Plateau, others	Imazapic	SB	Grass/broadleaf	No	26-36 months	Likely
Range Star	2,4-D + dicamba	SB, TF	Broadleaf	> 6 leaves	3 weeks per quart	Possible
Rave	Triasulfuron + dicamba	SB	Broadleaf	60 days after emergence	4 months	Possible
Remedy Ultra, others	Triclopyr	SB, TF	Broadleaf	No	3 weeks	Possible
Tordon 22K	Picloram	SB, TF	Broadleaf	After tillering	Grasses may be reseeded in the fall following an application in spring or early summer	Likely at rates > 1 qt/A
Yukon	Dicamba + halosulfuron	SB, TF	Broadleaf	No	2 months	Possible

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.

Sarah Lancaster, Weed Management Specialist
slancaster@ksu.edu

Tina Sullivan, Northeast Area Agronomist
tsullivan@ksu.edu

4. Annual weedy brome control in hayfields and pastures

Fall is a good time to control weedy annual brome species such as downy brome, Japanese brome, and cheat. These weeds are not a new problem, but an increasing number of producers are reporting an increase in these undesirable grasses emerging in thinning stands. In pastures or hayfields, young or immature annual bromes can make suitable forage, but when the plants mature, they become less palatable, as stiffened awns become a livestock hazard, and crude protein drops to less than 3%. This article will discuss some identifying characteristics for each, as well as control measures.

Identification

Three weedy brome species are prevalent in Kansas. All are winter annual species, and their seedling leaves all have a clockwise twist. Key identifying features are shown in Table 1.

- **Cheatgrass (downy brome;** Bromus tectorum**)** is covered with soft hairs on both leaf surfaces, and the closed sheath is also covered with soft hairs. Mature plants can reach up to 2 feet tall with leaves up to 5 inches long.
- **Japanese brome (**Bromus japonicus**)** seedlings are difficult to distinguish from cheatgrass, but mature plants typically grow taller than cheatgrass and have awns that are slightly bent.
- **Cheat (**Bromus secalinus**)** seedlings lack the hairy leaves and have shorter awns.

Given the challenge of distinguishing the three species, it is fortunate that most management recommendations will be similar for all three.

Figure 1. Cheatgrass (pictured) and Japanese brome have dense hairs on the upper and lower leaf surfaces as well as on the leaf sheath. Cheat has fewer hairs on the leaf, and the leaf sheath

is usually hairless. Photo by Sarah Lancaster, K-State Research and Extension.

Table 1. Identifying features that distinguish among downy brome, Japanese brome, and cheat.

	Cheatgrass (Downy Brome)	Japanese Brome	Cheat
Leaf surface	Soft, short hairs on both surfaces	Soft hairs on both surfaces	Occasional hairs
Sheath	Hairy	Hairy	Hairless to occasional hairs
Ligule	Fringed membrane	Fringed membrane, slightly pointed	Fringed membrane
Spikelet	Long awns (0.75 inches)	Awns slightly bent	Short awns (0.4 inches)

Herbicide options

As with most weeds in perennial grass pastures or hayfields, the best management is a dense stand of the desirable forage. This means that soil fertility should be closely monitored, as well as grazing management and haying practices. In general, herbicides for weedy brome control should be applied sparingly, as they are likely to cause significant crop injury, especially in smooth bromegrass. It is also important to keep in mind that most of the products listed below are Group 2 (ALS-inhibiting) herbicides, and ALS-resistance has been confirmed in Japanese brome populations in Kansas. Weedy brome seeds remain viable approximately three years in the soil, suggesting that a few years of intensive herbicide applications, followed by forage management, can be successful.

Preemergence applications

One herbicide option is imazapic (Plateau, others; Group 2). It can be applied at 4 to 12 fl oz/A in established smooth bromegrass (not tall fescue). It must be applied in the fall before the annual brome germinates. Smooth bromegrass growth will be suppressed by applications of imazapic.

Aminopyralid (Milestone; Group 4) can be applied at 7 to 14 fl oz per acre prior to germination for suppression or control of weedy brome species. Other Group 4 herbicides, such as picloram (Tordon) and dicamba (several), may also suppress weedy brome species. Smooth bromegrass suppression is likely with these applications.

A preemergence herbicide option that is safe on smooth bromegrass or tall fescue is pendimethalin (Prowl H2O, others; Group 3). However, this product only provides weed suppression and requires about 1 inch of rainfall for activation. Pendimethalin should be applied before weeds emerge at 4 pts/A.

Postemergence applications

Propoxycarbazone (Lambient; Group 2) can be applied postemergence at 1.2 oz/A when weedy brome species are at the 2-leaf to 2-tiller growth stage. Smooth bromegrass suppression is likely to occur.

Experiments conducted in Montana suggest that picloram (Tordon 22K, others) applied at 26 fl oz/A before boot stage to Japanese brome or aminopyralid (Milestone) applied at 4 fl oz/A before heading to cheatgrass and Japanese brome will reduce seed production. Such applications may be useful for managing emerged broadleaf weeds or brush while preventing the addition of weeds to the seedbank.

Management challenges

One challenge that may arise when making herbicide applications to control weedy brome species in pastures or hayfields is the presence of a dense thatch layer. Mowing or burning prior to herbicide applications can help remove plant residue that may prevent herbicide deposition. Increasing spray volume and droplet size can also help penetrate a plant canopy or thatch layer. In addition, carefully-timed mowing can be used as a method to reduce weed seed production. Unfortunately, burning pastures in the absence of an herbicide application is likely to increase the density of weedy bromes, as burning removes barriers to germination and emergence.

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

Tina Sullivan, Northeast Area Agronomist
tsullivan@ksu.edu

5. Meet the new K-State Range Management Extension Specialist

Molly Reichenborn joined the Department of Agronomy at Kansas State University in August as the new Range Management Extension Specialist based in Manhattan. Molly grew up near Wichita with her older brother and parents in Goddard, where she loved being outdoors and caring for animals. These interests led her to initially pursue a career at Sedgwick County Zoo, where she worked with both exotic species and heritage livestock breeds while pursuing her undergraduate degree in biology. It wasn't until she took plant ecology and land management classes that rangelands came onto her radar. Once they did, she pivoted to a career focused on the grasslands that surrounded her, but she had never fully appreciated growing up.

Dr. Molly Reichenborn, Range Management Extension Specialist

Molly completed both her undergraduate and master's degrees at Wichita State University. As a master's student, she studied the recovery of a tallgrass prairie following herbicide management of Sericea (*Lespedeza cuneata*). She also worked with her master's advisor, Dr. Greg Houseman, and the Tallgrass Legacy Alliance to test the utility of MapitFast and SprayLogger to track and treat Sericea populations on ranches in eastern Kansas. She then worked as project manager for a study led by

Drs. Bill Jensen (Emporia State University), Greg Houseman (WSU), and Mary Liz Jameson (WSU) examining the response of plant, bird, and insect communities to cattle grazing on Conservation Reserve Program lands in Kansas. Molly recently moved back to Kansas for her new role after finishing her PhD at New Mexico State University, studying the impact and effective management of Honey mesquite (*Neltuma glandulosa*) shrub encroachment into arid rangelands.

Molly is excited to join the long history of excellent extension and research at K-State and work with stakeholders across the state to address current and emerging issues on rangelands. Her research focuses on improving land management practices for effective invasive species, woody plant encroachment, and grazing management. In her free time, Molly enjoys knitting, hiking, making sourdough, and long walks with her husband and pup. She can be reached via email at mreichenborn@ksu.edu.

6. TAPS Twilight Tour delivers insights and action - Sept. 8 in Colby

The Kansas State University Testing Ag Performance Solutions (TAPS) program is inviting farmers, agribusiness professionals, students, and community members to join us for an evening of research, competition, and connection at the 2025 TAPS Twilight Tour in Colby on Sept. 8.

Attendees will walk the plots featuring 29 corn hybrids from nine leading seed brands, comparing how each responds to different plant populations and management strategies. The tours demonstrate how variety selection and seeding rate, two of the most influential yield factors, work in real-world conditions, supported by precision irrigation, soil moisture monitoring, and other technologies that improve water-use efficiency.

“Field days like the Twilight Tours let you see in real time how different strategies play out in the field,” said Renee Tuttle, K-State associate director of TAPS. “It’s powerful to compare the same hybrid under varying management approaches, all within the Q-Stable benchmark, and immediately see how those choices influence crop performance and water use.”

Forage sorghum has been added to the TAPS competition in Colby this year as the first-ever forage component, giving producers a firsthand look at an alternative crop that offers both high feed value and improved drought resilience. Competitors must decide how to split their 10 inches of available water between corn and forage acres, then manage it strategically throughout the season, showing how forage sorghum’s lower water needs can make it a viable option for livestock producers and irrigators facing reduced allocations.

By comparing management strategies side by side, participants can see how this crop performs under local growing conditions, expanding the conversation about profitable, water-smart cropping systems in the High Plains.

On Sept. 8 in Colby, the Twilight Tour will feature the TAPS High Roller, a lively evening blending grain marketing insight, games, giveaways, and a community meal. Attendees will tour the plots, explore the new forage sorghum trials, and see how TAPS competitors are combining genetics, plant population strategies, and technology to improve water-use efficiency and profitability.

This event is free to attend, with dinner provided. Registration is encouraged for meal planning purposes. For more information or to register, visit www.k-state.edu/taps.

7. K-State Hosts Limited Irrigation Field Day - Sept. 10

Farmers, producers, and agronomy professionals are invited to attend an upcoming **Limited Irrigation Field Day** hosted by the K-State Northwest Research-Extension Center in Colby and the K-State Southwest Research-Extension Center at Tribune, along with the support of several sponsors. This event will showcase the latest research and demonstrations on limited irrigation strategies, helping producers make informed decisions for water-efficient crop production.

September 10, 2025 – Scott County
Time: 4:30 PM (CT)
Directions: South of Scott City on US 83 to W Rd 20, 1 mi west to S Kansas Rd., then ¼ mi north.
Supper to follow at Fairgrounds
Plot Cooperator: Buehler Grain and Forage
& Cheney Farms

Agenda Highlights

- Limited Irrigation Strategies
- Residue, Infiltration, and Sprinkler Design
- Hybrid Showcase with Seed Company Representatives

Registration

Attendance is free and open to the public. An RSVP is appreciated but not required. For more details and registration, visit www.northwest.ksu.edu/agronomy or call 785-462-6281.