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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. Low levels of Tar Spot have been confirmed in Kansas

Tar spot of corn, a disease caused by the fungus *Phyllachora maydis*, was confirmed in several fields in Doniphan County, Kansas, on May 27, 2024, and Atchison County on June 4, 2024. (Figure 1). These are the first documented reports of Tar Spot in the US for this growing season. This report is about a month earlier than the 2023 season for Kansas. Now is the time to intensify scouting efforts. If you wait until there is significant disease pressure in the upper canopy, a fungicide application may be too late. The early disease onset we're observing this year raises concerns about yield loss. Generally, early observations of tar spot have corresponded with high yield loss. Fields scouted this week were between the V3 to V10 growth stages, which increases the risk for disease spread and development. The recent rains likely helped to promote tar spot development.

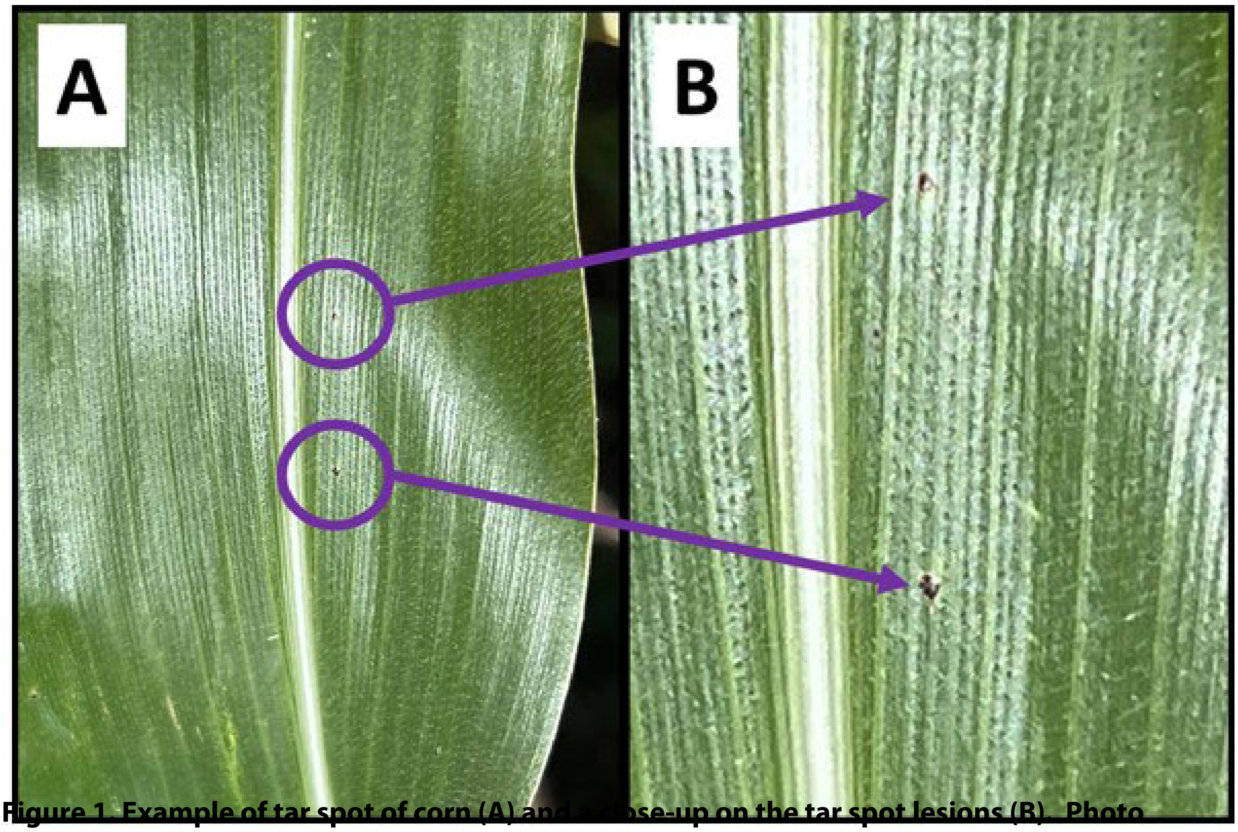

Figure 1. Example of tar spot of corn (A) and a close-up on the tar spot lesions (B). Photo courtesy of Rodrigo Onofre, K-State Research and Extension

Frequently Asked Questions about Tar Spot

How do I scout for Tar Spot?

Tar spot develops as small, black, raised spots (circular or oval) that develop on infected plants and may appear on one or both sides of the leaves, leaf sheaths, and husks. Spots may be found on healthy (green) and dying (brown) tissue. Tar spot can be easily confused with insect poop, which can appear as black spots on the surface of the leaf. If you would like assistance in confirming tar spot, you can contact Dr. Rodrigo Onofre at 785-477-0171, your local county extension office, or the K-

State Plant Disease Diagnostic Laboratory at https://www.plantpath.k-state.edu/extension/plant-disease-diagnostic-lab/.

Is there a history of Tar Spot in this field or neighboring fields?

Tar spot overwinters on infested corn residue on the soil surface, which serves as a source of inoculum for the subsequent growing season. Spores can be dispersed by wind and rain splash and can move to nearby fields if conditions are favorable.

What counties and when was Tar Spot reported in Kansas during the 2023 corn season?

During the 2023 corn season Tar spot was confirmed in Doniphan (6/26/2023), Atchison (6/30/2023), Jefferson (6/30/2023), Brown (7/05/2023), Nemaha (7/28/2023), Jackson (8/8/2023), Marshal (8/22/2023), Leavenworth (8/28/2023), Pottawatomie (9/8/2023), Wabaunsee (9/8/2023), Washington (9/21/2023), and Douglas (9/21/2023) counties. Overall, during the 2023 season, Tar Spot prevalence and severity were much higher than in the 2022 season, which led to severe yield impact in several field in the northeast part of Kansas.

What growth stage is the field?

Research has shown that making an application just after first detection and at or after VT is effective if lesions are detected early. If you wait until there is significant disease in the upper canopy, then a fungicide application may be too late. A guide for determining the growth stages in corn is available at https://bookstore.ksre.ksu.edu/pubs/MF3305.pdf.

How does moisture influence disease development?

The recent rains likely helped to promote tar spot development. Additionally, irrigated corn may be at particularly high risk for yield or silage loss. Forecasted rainfall and high humidity will favor tar spot development and spread.

Should I apply a fungicide?

Fungicides are an effective tool for controlling tar spot if they are timed properly. Research has shown the best return on investment from a fungicide application on corn occurs when **fungal diseases are active** in the corn canopy. A **well-timed, informed fungicide application** will be important to reduce disease severity when needed, and we recommend holding off until the disease is active in your field and corn is at least V10 growth stage. Scouting will be especially important if wet weather continues. There are several fungicides that are highly effective at controlling tar spot when applied from tassel (VT) to R2 (milk). I would recommend picking a product with multiple modes of action. The National Corn Disease Working Group has put together efficacy ratings for fungicides labeled for the control of tar spot can be found at the Crop Protection Network website at https://cropprotectionnetwork.org/publications/fungicide-efficacy-for-control-of-corn-diseases.

If there is high disease pressure early in the season, a second application may be warranted. Fields should be scouted 14-21 days after the first application to see if the tar spot has become active again. Fungicides will not provide benefits after R5. Always consult fungicide labels for any use restrictions prior to application.

Where has tar spot been reported in the 2024 season?

Tar Spot has only been detected in two counties in Kansas (Doniphan and Atchison), making these reports the first across the US for this growing season (Figure 2).

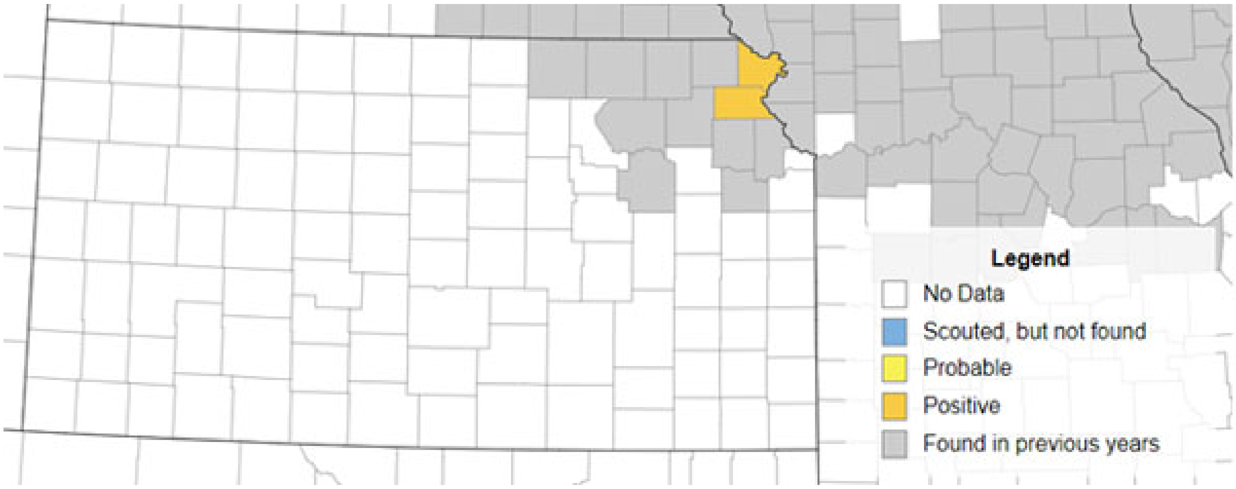

Figure 2. Tar Spot of Corn (Phyllachora maydis) **in Kansas in 2024. Source:** https://corn.ipmpipe.org/tarspot/

Please help us track tar spot!

If you suspect a field has tar spot, contact Rodrigo Onofre directly at 785-477-0171 and/or submit a sample to the K-State Plant Disease Diagnostic Lab at https://www.plantpath.k-state.edu/extension/diagnostic-lab/documents/2021_PP_DiseaseLabChecksheet.pdf.pdf. This will help us monitor the situation in the state.

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2. Management options for control of field bindweed

In last week's eUpdate, we featured an article on field bindweed focusing on its ecology, growth characteristics, and identification methods. This week, the focus is on developing effective long-term control strategies for this troublesome weed that impacts Kansas farmers.

Because field bindweed has long seed viability and tremendous food reserves stored in roots, a long-term management program is required for successful control. A single herbicide application will not eradicate established stands; instead, multiple chemical and/or mechanical control means are needed to control and keep it suppressed. An effective long-term control program should prevent seed production, kill roots and root buds, and prevent infestation by seedlings. A good control program will include cultivation, herbicide use, and competitive crops.

Prevention

Because field bindweed can be spread by seed, root fragments, farm implements, infested soil, and animals, prevention of infestations is critical and requires:

- careful inspection of crop seeds to remove field bindweed seeds.
- confinement or restriction of livestock fed contaminated grain or hay to areas already infested until the bindweed seed passes through the animals.
- spreading of manure contaminated with field bindweed only on bindweed-infested land.
- thoroughly cleaning harvesting, tillage, and other machinery before moving from infested to non-infested fields.
- immediate control of new infestations that start in crop and non-crop areas.
- clean field borders from field bindweed infestation (Figure 1).

Figure 1. Clean field borders are needed to prevent field infestations from lateral roots. Photo by Jeremie Kouame, K-State Research and Extension.

Competitive crops and early canopy closure as a management tool

Field bindweed requires high amounts of light. It cannot tolerate shading from tall competitive crops and is found primarily in crops with lower plant densities or with low leaf area indexes. Its presence and invasiveness are much lower in dense and healthy crops. Planting forage sorghum or sudangrass in narrow rows around mid-June, following intensive tillage, or using a herbicide provides excellent competitors in areas where adequate soil moisture enhances rapid crop growth[1]. Even though grain sorghum is usually less effective than taller forage crops, narrow-row grain sorghum can also be used as a competitive crop.

Chemical control

Several herbicides help manage field bindweed even though a single herbicide application rarely eradicates established stands. Instead, multiple herbicide applications will generally be needed to reduce and suppress dense stands over several years. Because of its deep rooting system and perennial nature, long-term chemical control depends on movement through the root system to kill the roots and root buds.

The systemic herbicides most commonly used are glyphosate (Roundup or equivalent), auxin-type herbicides 2,4-D, dicamba (Banvel/Clarity), picloram (Tordon), and quinclorac, and their mixtures. Research in a winter wheat-fallow rotation with treatments applied in late summer or fall each year for two, three, or four consecutive years at the beginning and end of each fallow period showed that quinclorac + 2,4-D and picloram + 2,4-D consistently performed better when applied during the fallow period[2]. Other studies in a winter wheat-fallow system showed that about one year after application, herbicide mixtures containing picloram provided the best control[3]. Using contact herbicides such as paraquat will only desiccate plant tissue contacted by the herbicide, resulting in short-term control of top growth. Control may be improved by combining herbicide treatments with closely-drilled, vigorously growing crops.

Seedling control

Because seedlings develop a deep taproot and numerous lateral roots about six weeks after emergence and six-week-old seedlings can re-establish under favorable conditions following top growth removal, it is advisable to control seedlings before this stage. Also, seedlings can be:

- easily controlled with timely tillage for the ones emerging between crop rows,
- controlled with applications of 2,4-D or dicamba at 0.25 to 0.5 lb ai/acre in herbicide-tolerant crops, and
- removed by hand when they are growing within rows to prevent their establishment as perennial plants.

Tillage

Tillage is a common way to destroy top growth and is most effective when sweep-type implements are used to cut shoots from the roots approximately 4 inches below the soil surface. In the Great Plains, the standard practice for control is sweep tillage at 3-week intervals combined with one or two annual 2,4-D applications during the 14-month fallow period in a winter wheat-fallow crop rotation[4]. If tillage occurs every 12 to 16 days after bindweed emerges, between harvest and seeding, a relatively good continuous wheat stand can be produced under favorable soil moisture conditions, significantly reducing field bindweed stands. This repeated destruction of the plant every 12 to 16 days weakens the plants by depleting carbohydrate reserves in the roots and stimulating dormant bindweed seeds to germinate.

Chemical control improved when vigorous plants are sprayed but is affected by tillage timing

Field bindweed control 10 months after application of glyphosate (3 lb/acre), 2,4-D (1 lb/acre), dicamba (1 lb/acre), or picloram + 2,4-D (0.25 + 0.5 lb/acre) is affected by the time of sweep tillage (Figure 2).

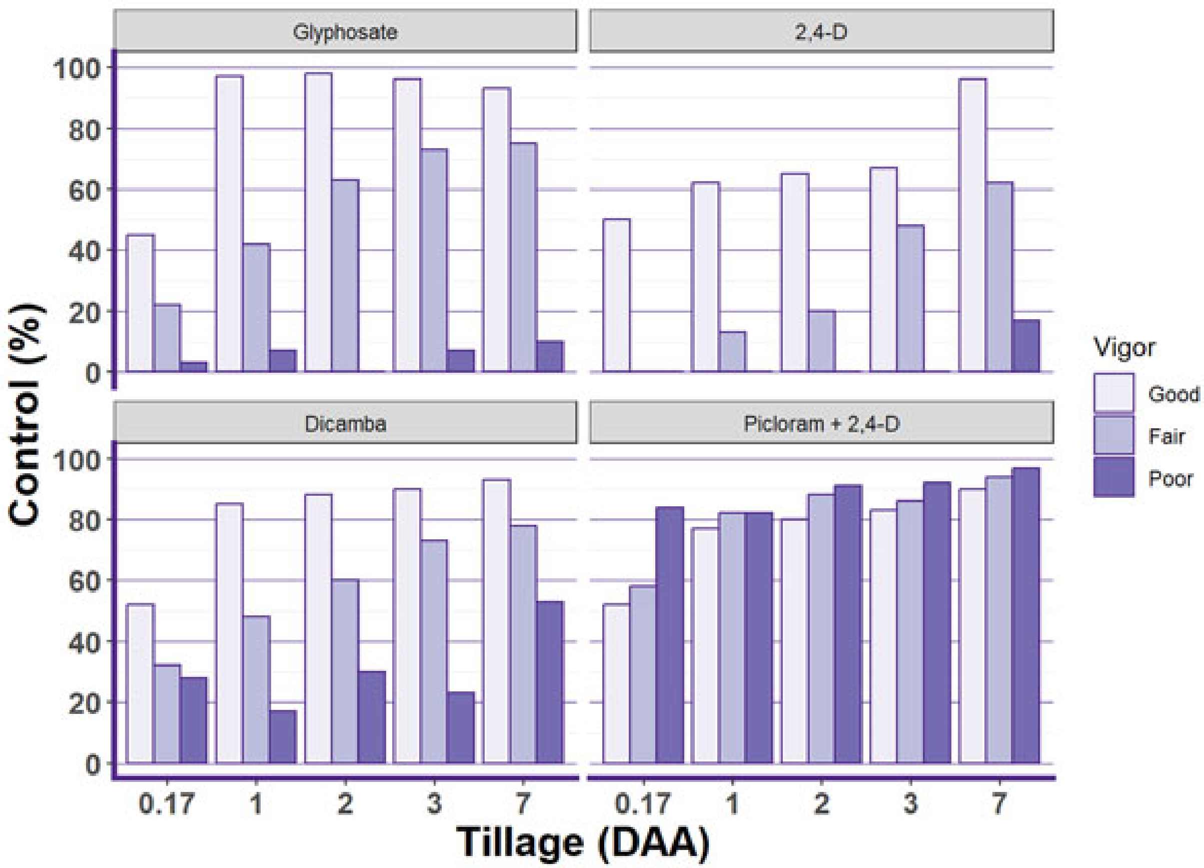

Figure 2. Field bindweed control as affected by sweep tillage at various times [0.17 (or 4 hours), 1, 2, 3, 7 days after herbicide application (DAA)] to plants with good, fair, or poor vigor, respectively (Graph created using data from Wiese et al., 1997)[5].

- **Glyphosate** provided excellent control (93 - 97%) of plants with good vigor if tillage was delayed 1 DAA, but the maximum control achieved for plants with fair vigor was about 75% when sweep tillage was delayed at least 3 DAA. Only minimal control was achieved for plants with poor vigor, regardless of tillage time.

- **2,4-D** provided excellent control (96%) of plants with good vigor when tillage was delayed 7

DAA but the maximum control of plants with fair vigor was 62%, when tillage was delayed 7 DAA. Little or no control of bindweed was achieved when 2,4-D was applied to poor vigor plants, even when tillage was delayed 7 DAA (17%).

- **Dicamba** provided good control (90 - 93%) of plants with good vigor when tillage was implemented 3 DAA but the highest control achieved for plants with fair vigor was 78% when tillage was delayed 7 DAA. Only 23% control was achieved for plants with poor vigor when tillage was delayed 3 DAA and reached 53% when tillage was implemented 7 DAA.

- **Picloram + 2,4-D**. Field bindweed vigor at the time of application had little effect on control. If tillage was delayed for at least 2 days after application, it did not affect control, which was 80 - 97% regardless of plant vigor. This mixture was the only herbicide program that provided control between 82 and 97% of poor vigor-rated plants regardless of tillage timing.

Fallow preceding wheat: tillage or a herbicide application immediately after harvest could reduce seed production, weaken the plant, and increase the effectiveness of follow-up herbicide applications in the fall or spring. picloram + 2,4-D at 0.25 + 0.5 lb/A should be applied at least 60 days prior to seeding winter wheat.

A **preharvest application** of 2,4-D ester can be used in wheat, oats, and barley crops after small grains have reached the soft dough stage.

Postemergence to corn and grain sorghum. Dicamba and 2,4-D may be applied but crop tolerance varies depending on hybrid, environmental conditions and growth stage at the time of application. Always check the relative tolerance of particular hybrids to herbicides prior to use.

References

[1]Peterson and Stahlman, 1989, [2]Enloe et al., 1999, [3]Westra et al., 1992, [4]Wiese et al., 1996, [5]Wiese et al., 1997

For more detailed information, see the "2024 Chemical Weed Control for Field Crops, Pastures, and Noncropland" guide at https://www.bookstore.ksre.ksu.edu/pubs/CHEMWEEDGUIDE.pdf or check with your local K-State Research and Extension office for a paper copy.

The use of trade names is for clarity to readers and does not imply endorsement of a particular product, nor does exclusion imply non-approval. Always consult the herbicide label for the most current use requirements and follow all label instructions.

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3. Herbicide applications: Avoid a tank-mix mishap

Tank-mixing herbicides and other agrichemicals is a necessary practice to increase weed control and use machine hours wisely. Unfortunately, the likelihood of physical incompatibility increases as the number of products added to a tank-mix increases. This article will give a brief overview of the principles of tank-mix order for herbicide applications. Product labels are the ultimate authority on the mixing order, so be sure to check the mixing instructions on products and combinations of products you have not used before. If the label is unclear, a jar test is a great alternative to a 'tank test.' Guidelines for conducting a jar test are included at the end of this article.

Remember, herbicides need to 'get wet' in order to be applied through the spray. Meaning that herbicides must be dissolved or suspended in the carrier water. It might be helpful to think of a spray tank like a swimming pool. A pool can only hold so many kids, and a tank of water can only hold so many molecules that aren't water. Also, the first kids to enter the pool have more room to swim and get wet compared to the last kids to enter the pool. Pesticides are somewhat similar – it's easier to dissolve a product in "clean" water compared to water that has already had herbicides added. This means that the most difficult-to-dissolve herbicides should be added first, and the pesticides that are easiest to dissolve should be added last. Specific chemical reactions can change this order in some mixes, for example, adding the volatility reduction agent first when applying XtendiMax or Engenia – this is why it's important to check labels and do jar tests. But, in general, a "safe" mixing order is listed in Table 1.

Table 1. Generalized mixing order based on type of formulation.

	Type of formulation	Example product
1.	Dry	Status, FirstRate
2.	Liquid flowables	Aatrex 4L
3.	Suspension	Zidua SC, Warrant, Callisto
4.	Emulsifiable concentrate	Dual products, Outlook
5.	Soluble liquids	Roundup PowerMax, Liberty 280 SL, Enlist One
6.	Surfactants, oils	many

One specific product that is often discussed in mixing order discussions is AMS. When AMS is being used as a water conditioner, such as with glyphosate products, it should be added to the tank first. But if AMS is being used as a nitrogen source to increase herbicide uptake, as with Sharpen, it does not have to be added first.

Using label-recommended mixing orders is the best way to avoid a tank-mix mishap, but there are a few other factors that could be adjusted to improve mixing. The simplest would be to wait until one product is thoroughly mixed before adding the next product. Another simple suggestion is to add a larger volume of water before adding products (make the pool bigger to continue the analogy above). In addition, warmer water will usually help products mix more quickly. But that is difficult to control, so the best thing to do is to be aware that longer agitation times between added products might be necessary when water is colder.

If you use a new-to-you combination of products, consider doing a “jar test” before loading the sprayer. The steps for a jar test are:

1. Put one pint of the carrier you will use in a 1-quart jar.
2. Add products in the ratio and order you’ll use in the spray tank.
3. Cap the jar and mix.
4. After 30 minutes, check the jar for components that have separated, settled, or are otherwise undesirable for spraying.

Tank-mixing was discussed in an episode of the War Against Weeds podcast. The recording is available here.

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. Annual Forage Insurance Part 1: Policy Basics

The deadline to purchase Annual Forage Insurance (AFI) is July 15 for any annual forage crop planted from August 2024 to July 2025, which is recognized as the 2025 commodity year. Producers who buy coverage will have premiums billed on Aug. 30, 2025. They are not required to secure AFI coverage for all annual forage acres they plant.

This article covers key AFI policy characteristics. Additionally, refer to this 2023 article, which discusses several AFI policy changes, advantages, and disadvantages.

A companion article in this eUpdate provides additional details on interval selection.

What is Annual Forage insurance?

An insurance product based on a precipitation (rainfall) index, AFI protects policyholders if annual forage crops yield poorly due to insufficient precipitation (this includes annual crops used for grazing, haying, grazing/haying, grain/grazing, green chop, grazing/green chop or silage). When precipitation falls below a set amount, a policy provides a payout.

Precipitation is measured locally in a "grid" roughly covering a 14- by 16-mile area. As such, a policyholder may not receive a payout for an insured field that records low rainfall if the grid has above-average rainfall. Likewise, if all of a policyholder's insured fields have sufficient rainfall but the grid has below-average rainfall, then the policy still could yield a payment. Such variation is less likely during severe droughts when rainfall shortages tend to be widespread.

Like other federal crop insurance products, the government shares the AFI premium cost with policyholders.

Who may want to consider purchasing Annual Forage insurance?

Nearly anyone in Kansas or other select states who produces an annual crop and feeds it to livestock as a grazing forage, grain, silage, or other feedstock can use AFI. Coverage may interest producers who (1) want to manage drought or rainfall risk and/or (2) cannot use regular multi-peril crop insurance or are looking for alternatives.

What major decisions must you make to use Annual Forage insurance?

A producer must make three major choices:

1. *Coverage level:* The coverage level determines the local precipitation necessary to trigger a payout. The higher the coverage level, the higher the premium and the higher the likelihood and size of a payout. You may select a coverage level from 70% to 90%. A 90% coverage level will trigger a payout when precipitation within a grid is less than 90% of the historical average. A policy with a 90% coverage level would trigger a payout if precipitation is 80% of the historical average. If a policy had a 75% coverage level, then it would *not* pay out.
2. *Productivity factor:* A producer must select a productivity factor, which ranges from 60% to 150%. The productivity figures effectively scales AFI premiums and potential indemnities down or up, by decreasing or increasing, the AFI guarantee, or the value of the forage crop

that is insured. The highest productivity factor has the highest premium and the highest potential payout when precipitation is lower than normal. Producers growing a high-value forage crop may want to select a higher productivity factor that will more likely match the value of their crop and vice versa for lower-value forage crops.

3. *Growing season and intervals:* Producers must select what months to use AFI. The "growing season" extends for seven months beginning in the month after the forage crop is planted. For example, a crop planted in June would have a growing season from July through January. Within a growing season, the producer must select four months to six months to be covered by AFI. Known as intervals, the coverage periods can be structured as three 2-month intervals, or for select growing seasons, two 2-month intervals. Read more about interval selection later in this article.

Where is Annual Forage insurance used in Kansas?

In 2024 (commodity year)*, nearly 329,000 acres in Kansas had AFI coverage - up from nearly 323,000 acres in 2023 (commodity year) and nearly 134,000 acres in 2022 (commodity year). The total value of annual forage crop production insured (insurance liabilities or guarantee) exceeded $64 million in 2024 (commodity year). Figures 1 and 2 show relatively high AFI participation in several western and south-central Kansas counties during 2024 and 2023 and limited participation in the eastern third of the state. AFI has only been used in Kansas since 2014.

* *The 2024 commodity year is still in progress. It refers to AFI policies purchased by the July 15, 2023, deadline with growing seasons that began in September 2023 and will extend through August 2024.*

Does it pay?

To date, commodity year 2024 AFI payouts in Kansas total more than $5.7 million compared with about $7.6 million in producer-paid premiums. Payouts in 2024 may be lower than those in the 2022 and 2023 commodity years due to relatively higher rainfall in several parts of the state. However, several counties in southwest Kansas are currently experiencing severe drought. For the first half of the 2025 commodity year, the seasonal [Climate Prediction Center outlook] projects below-normal precipitation for portions of Kansas - particularly toward southwestern Kansas.

In 2023 (commodity year), *$22.7 million in indemnities*, averaging about $70 per insured acre, were paid to Kansas producers using AFI. Kansas producers paid about *$7 million in premiums*. Figure 3 shows 2023 county-level loss ratios, representing the ratio of total indemnities to total premiums, including the government-paid portion. While producer-selected coverage ratios and intervals and other factors affect loss ratios, high loss ratios in 2023 reflect low rainfall and drought in many parts of the state during the last half of 2022 and first half of 2023. Several southwest Kansas counties had loss ratios greater than 2.0, meaning total indemnities were more than double the total producer and government-paid premium. Individual producers' experiences may differ, but total indemnities were higher than total producer-paid premiums in all but two counties.

A producer who consistently uses AFI year over year is likely to receive more in indemnities than what's paid in premiums because the federal government pays at least half of the premium. That said, producers have no guarantee for an indemnity, and several years can pass without indemnities.

What else should be considered?

- For the 2025 commodity year, the **AFI sign-up deadline is July 15, 2024,** and Aug. 30, 2025, is the premium billing date. You may purchase AFI coverage from a local crop or livestock insurance agent. Find one at https://www.rma.usda.gov/informationtools/agentlocator.
- As of commodity year 2024, producers are **not** required to purchase an AFI policy for all annual forage crops they produce.
- Premiums vary based on location, growing season, coverage leverage, and productivity factor. For commodity year 2025, a producer could pay $3 to $65 per acre. On average, the producer-paid premium per acre in commodity year 2024 was about $23. Higher premiums reflect a higher likelihood and value of a payout.
- The acreage reporting deadline — the fifth day of the month following the planting period — is important to note. If the acreage isn't used for annual forage or other conditions are not met, then the policy may not "attach," meaning no payouts are made and the producer doesn't pay a premium. Producers using AFI should discuss acreage reporting deadlines with their insurance agents.
- Small grains used for *both* grazing and grain production have a "dual use option." See the RMA or Texas A&M fact sheets for more information. This option is available for growing seasons 1-3 only, and the county base value is adjusted to be 40% of the full county base value. This lowers the insurance guarantee in terms of the premium and potential payouts. The dual option would be used when grazing a crop through the winter and harvesting it for grain in the summer. The producer would also purchase a separate multi-peril crop insurance policy for grain yield (i.e., a revenue protection policy for wheat).
- Indemnities are based on deviations from normal or average precipitation. If certain months are typically dry, then they would have to be *even drier* to trigger an AFI indemnity.

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5. Annual Forage Insurance Part 2: Interval Selection

This article is the second part of a two-article series on annual forage insurance. The first article is focused on policy basics and can be found in this eUpdate.

The deadline to purchase Annual Forage Insurance (AFI) is July 15 for any annual forage crop planted from August 2024 to July 2025, which is recognized as the 2025 commodity year. Producers who buy coverage will have premiums billed on Aug. 30, 2025. They are not required to secure AFI coverage for all annual forage acres they plant.

How does selecting a growing season work?

The AFI growing season refers to the seven months following the month when the forage crop is planted. Like with other crop insurance programs, an AFI-covered forage crop must be planted between early and final planting dates stipulated by policy. Acreage reporting must take place by the fifth day of a growing season's first month. Take the following scenarios as examples.

- Growing season 1 for commodity year 2025 begins in September 2024 and ends in March 2025. For growing season 1, the earliest planting date is Aug. 1, 2024, and the final planting date is Aug. 31, 2024. Acreage reports are due on Sept. 5, 2024.
- Growing seasons 5 and 6 — those beginning in February and March with planting dates in January and February, respectively — are **not** allowed in Kansas. Any forage crops planted in January or February would be reported in growing season 7, which begins in April.
- The final (12th) growing season for commodity year 2025 begins in August 2025 and ends in February 2026. The earliest planting date for this growing season is July 1, 2025, and the final planting date is July 31, 2025. Acreage reports are due on Aug. 5, 2025.

How does interval selection work?

Interval selection has some rules. Either two or three 2-month intervals must be selected.

- For growing seasons 1-4 and 7-9, three 2-month intervals within the growing season must be selected and assigned weights that add to 100% — for example, 30%, 30% and 40%. These weights scale up or down the protection (both premium and potential indemnities) provided in each interval. No single month can be insured twice within a growing season, so the producer must insure six of a growing season's seven months.
  - For a single interval, the highest weight is 40%, and the lowest is 20%.
  - The most "concentrated" intervals would be 40%, 40% and 20% in any order.
  - The most "spread out" intervals would be 35%, 35% and 30%, in any order.
  - Instead of making interval decisions to maximize protection in specific months, producers may focus on choosing which month to exclude and placing weights on the remaining six months or three intervals.
- For growing seasons 10, 11 and 12, which begin in June, July and August, respectively, two or three intervals are allowed. The highest single interval weight allowed is 50%.
  - The most "concentrated" intervals would be 50%, 50%, in any order.
  - The most "spread out" intervals would be 35%, 35% and 30% in any order.
  - Another perspective is producers could decide whether to exclude one or three months and how to assign weights for the remaining six months (three intervals) or four months (two intervals), respectively.

- **Examples**
  - A producer planted forage sorghum in June 2023 in Hodgeman County (grid 22021) during growing season 11.
    - The producer wanted to ensure good growth early in the growing season and harvest in October, so the producer selected July-August at **50%** and September-October at **50%**.
    - The producer selected a coverage level of **90%** and a productivity factor of **100%**.
    - The producer paid a **$28** premium per acre and received a **$10** indemnity per acre.
      - An indemnity was not triggered in the July-August interval as precipitation was higher than the historical average. A $10 indemnity was triggered for the September-October interval when precipitation was 83.3% of the historical average.
  - The same producer planted forage sorghum acreage early in May 2023 during growing season 10.
    - Regarding assigned weights, the producer selected June-July at **35%**, August-September at **35%** and October-November at **30%**.
    - The producer selected a coverage level of **90%** and a productivity factor of **100%**.
    - The producer paid a **$25** premium per acre and received a **$47** indemnity per acre after their grid received substantially lower-than-average rainfall during the October-November interval (37.6% of the historical average).
  - Estimated using the AFI Decision Support Tool, these examples are for demonstration purposes and use policy rules for commodity year 2024. Outcomes vary widely across counties, years, and policy choices. Only an insurance agent officially can estimate premiums.

From a risk management perspective, intervals would ideally correspond with the periods when forage yields are most sensitive to precipitation shortfalls. Different annual forages have different growth periods. For example, triticale can be grown for six months, spring oats for 90 days, and forage sorghum x sudan for six months. Research conducted in western Kansas on major forage crops shows precipitation in the two months preceding planting, month of planting and first month following planting most highly correlates with forage yield. Under current rules, AFI does *not* allow for insuring the forage crop until the first month after planting and can require insuring months after harvest.

What are some strategies to follow when selecting intervals?

There is no right or wrong way to select intervals. The producer may want to study their production history, review historical precipitation in their fields and grid, consider the months most critical for forage production, and consult with their insurance agents. Most insurance agents have useful decision tools, or producers can go to http://af.agforceusa.com/ri.

Some producers use the following strategies, which are not necessarily mutually exclusive:

1. *Select intervals during the most sensitive growth periods*. This would generally correspond with a growing season's earliest intervals, though this may vary by rainfall zone. Producers can apply the highest possible weights to intervals when crops are sensitive to precipitation and

the lowest weights to less critical periods. AFI only allows for insuring crops during months after planting. For short-season crops, producers may have to insure months or intervals after the crop is harvested but before the required insurance period ends.

2. *Pick intervals during the months most likely to experience rainfall shortages*. This approach could be based on studying historical precipitation; insurance agents may be able to provide additional resources. Producers could also reference the Climate Prediction Center's outlook; however, long-range forecast accuracy is poor.
3. *Spread out intervals as much as possible during the growing season.* This strategy may suit a producer who is uncertain about rainfall patterns or concerned about a grid having different outcomes from those observed in specific fields within the grid. Although more relevant for Pasture, Rangeland, and Forage (PRF) insurance, a larger number of intervals (all else held constant) increases the likelihood that a payout will be made.
4. *Develop a strategy to maximize expected payouts.* This approach focuses less on risk management, and it may lead to higher premiums and greater risk. Some insurance agents have tools that can inform this approach. Research on past PRF outcomes suggests that selecting (1) winter intervals and (2) the highest productivity factor leads to higher payouts in the long run. Although AFI offers less flexibility for interval selection than PRF, both use the same grids and precipitation index, so the findings are still generally relevant.

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6. 2024 Kansas Wheat Plot Tours - Updated Schedule

The Department of Agronomy and K-State Research and Extension will host several winter wheat variety plot tours in different regions of the state starting May 14, 2024. Make plans to attend a plot tour near you to see and learn about the newest available and upcoming wheat varieties, their agronomics, and their disease reactions. Below is an updated list of plot tour dates, times, and plot locations/directions. This list will be continuously added to and updated in the coming weeks. Pay attention to the time zone for the last few plot tours. Times with (MT) indicate the Mountain Time Zone. All other times will be in the Central Time Zone.

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Date	Time	County	Location	Directions	Agent/ Contact
6/11	8:15 AM (MT)		Tribune	At Tribune Station, 1 mile west of Tribune on Hwy 96	Lucas Haag
6/11	5:30 PM (MT)	Sherman		9 miles north of Goodland on Hwy 27 to Road 73, east of the Quonset. Supper to follow at 4-H building	Jeanne Falk Jones
6/12	7:30 AM (MT)	Wallace	Mai Farms	9 mi south of Sharon Springs on Hwy 25 to Field Road, 3 miles east. Breakfast at 7:00 AM (MT). Plot tour at 7:00 AM (MT)	Jeanne Falk Jones
6/12	10:30 AM (MT)	Wallace	E&H Farms	3 mi west of Weskan on Hwy 40 to Road 3, south 5.5 mi to Gooseberry Rd	Jeanne Falk Jones
6/12	5:30 PM	Cheyenne	Hingst Farm	13 miles west of St. Francis on Hwy 36 to Road 1 and 3.5 miles north. Sandwiches in the field after tour.	Jeanne Falk Jones
6/13	9:00 AM	Thomas		Plot located 4.5 miles south of I-70 on Levant-Winona blacktop	Laurel Despain/ Lucas Haag