Issue 700

K-STATE Research and Extension

Extension Agronomy

eUpdate

07/02/2018

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, Agronomy e-Update 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 Curtis Thompson, Extension Agronomy State Leader and Weed Management Specialist 785-532-3444 cthompso@ksu.edu.

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eUpdate Table of Contents | 07/02/2018 | Issue 700

1. Pre-harvest weed control in wheat - Sharpen update

Recent rains in western and north central Kansas have delayed wheat harvest and allowed late season weeds to become an increasing harvest problem. We had an article a couple of weeks ago on pre-harvest weed control options in wheat, but have had several questions since that time regarding the use of Sharpen herbicide as a pre-harvest treatment. Sharpen has been labelled and approved as a pre-harvest treatment in wheat in the U.S. for several years, but still doesn't have all the export approvals, particularly China. We made the decision in conjunction with BASF a couple of years ago to not include Sharpen in our recommendations as a pre-harvest treatment as a number of major wheat buyers indicated they would not purchase wheat that had been treated with Sharpen. However, some additional markets have been approved since that time, and thus, if you want to use Sharpen as a pre-harvest treatment, it is important to visit with your grain buyer about whether they will accept wheat that has been treated with Sharpen. Below is an updated table on pre-harvest treatments for wheat that includes Sharpen.

Product and rate/ac	**Advantages**	**Disadvantages**	**Comments**
Aim EC (1 to 2 oz)	Acts quickly, usually within 3 days. Short waiting interval before harvest – 3 days.	Controls only broadleaf weeds. Regrowth of weeds may occur after 2-3 weeks or more, depending on the rate used.	Apply after wheat is mature. Always apply with 1% v/v crop oil concentrate in a minimum spray volume of 5 gal/acre for aerial application and 10 gal/acre for ground applications. Do not apply more than 2 oz of Aim during the growing season.
Dicamba (0.5 pt)	Controls many broadleaf weeds.	A waiting period of 7 days is required before harvest. Acts slowly to kill the weeds. Controls only broadleaf weeds. High potential for spray drift to susceptible crops.	Apply when the wheat is in the hard dough stage and green color is gone from the nodes of the stem. Do not use treated wheat for seed unless a germination test results in 95% or greater seed germination.
Glyphosate (1 qt of 3 lb ae/gal product, or 22 fl oz of Roundup PowerMax or WeatherMax)	Provides control of both grasses and susceptible broadleaf weeds.	Acts slowly. May take up to 2 weeks to completely kill weeds and grasses. Cannot harvest grain	Apply when wheat is in the hard dough stage (30% or less grain moisture). Consult label for recommended adjuvants.

		until 7 days after application. Kochia, pigweeds, and marestail may be resistant.	Not recommended for wheat being harvested for use as seed.
Metsulfuron (0.1 oz)	Provides control of susceptible broadleaf weeds.	Acts slowly. Cannot harvest grain until 10 days after application. Controls only susceptible broadleaf weeds. Kochia, pigweeds, and marestail may be resistant.	Apply when wheat is in the dough stage. Always apply with a nonionic surfactant at 0.25 to 0.5% v/v. Generally recommended in combination with glyphosate or 2,4-D. Do not use on soils with a pH greater than 7.9. Weeds growing under limited moisture may not be controlled. Do not use treated straw for livestock feed.
Sharpen (1 to 2 fl oz)	Quick acting, usually within 3 days. Short waiting interval before harvest – 3 days.	Primarily effective on susceptible broadleaf weeds.	Apply when wheat is in the hard dough stage and grain contains less than 30% moisture. Apply with MSO and an ammonium-based adjuvant in a minimum spray volume of 10 gpa by ground or 5 gpa with aerial application. Consult grain buyer to see if they will accept Sharpen treated wheat because of export restrictions. Treated straw may be grazed or fed to livestock.
2,4-D LVE (1 pt of 4lb/gal product or 2/3 pt 6 lb/gal product)	Provides control of susceptible broadleaf weeds.	Acts slowly. Weak on kochia and wild buckwheat. Cannot harvest grain until 14 days after application.	Apply when wheat is in the hard dough stage to control large, actively growing broadleaf weeds. Weeds under drought stress may not be controlled. Do not use treated straw for livestock feed.

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2. Post-harvest weed control in wheat stubble

Post-harvest weed control in wheat stubble is very important to conserve soil moisture and prevent weeds from going to seed and adding to the weed seedbank. Thin wheat and recent rains will likely require earlier and more intensive weed management efforts this year than in some years.

The standard treatment for many years to control weeds and volunteer wheat in wheat stubble was glyphosate plus 2,4-D LVE. If kochia was present, we may have added some dicamba, but it generally wasn't added in the eastern areas of Kansas because of drift concerns to soybeans. Glyphosate plus 2,4-D and/or dicamba remain a primary option for weed control in stubble, but with the development of glyphosate-resistant weeds, these options certainly don't work as well or quickly as they used to.

Glyphosate used to be fairly foolproof, even on big weeds, but that is no longer the case. Dicamba and 2,4-D probably weren't contributing as much to the weed control in those tank mixes as we may have thought, so now we are struggling to achieve acceptable control. Timing and weed size is much more critical with almost all other herbicides than it was with glyphosate. Consequently, it is very important to try and apply those treatments before the weeds exceed 4 to 6 inches tall, but that often doesn't happen. In addition, treatment before weeds exceed 4 inches tall may require a number of applications to manage multiple flushes of weeds, which adds significantly to the cost of control.

Higher rates of the 2,4-D and dicamba may improve control, but in most cases we probably don't want to exceed 1 qt/acre of 2,4-D or a pint/acre of dicamba. Sharpen is another herbicide tank-mix partner that may help with control of the pigweeds and provide some residual control. Sharpen works best with the addition of methylated seed oil and can provide some pretty good burndown on smaller weeds, but if the weeds are very big, it tends to burn the tops and plants eventually resume growth. Sharpen requires complete coverage so using 15 to 20 gallons/acre spray solution is important.

One herbicide alternative to glyphosate that can work well to control emerged pigweed and kochia is paraquat. Paraquat is a contact herbicide, so spray coverage is critical. Spray volumes of 20 gallons/acre or higher are preferred, especially on larger and thicker weeds. Paraquat also needs to be applied with a nonioinic surfactant or oil concentrate to enhance surface coverage of the plant foliage. A tank mix with atrazine will enhance control and provide some residual weed control if planning to plant corn or sorghum next spring. Likewise, metribuzin can be tank-mixed with paraquat if rotating to soybean to enhance control and provide some residual. If planting wheat this fall, a tank mix with Sharpen is an option to provide some residual control. Recent work at K-State suggests that making the paraquat application as soon as possible following wheat harvest allows for better coverage and more effective control especially of the pigweeds.

Another herbicide that can be added to the burndown treatments for residual broadleaf weed control in wheat stubble is flumioxazin (Valor and others). Flumioxazin has been used as a preplant/preemergence treatment in soybeans for years, but it hasn't been used much in wheat stubble because of the cost. However, with the recent reduction in flumioxazin prices, it may be worth considering as part of our stubble management treatments for residual weed control, especially the pigweeds. Wheat can be planted 30 days after 2 oz/ac, or 60 days after 3 oz/ac Valor application, if at least one inch of rain occurs between application and planting. Corn, sorghum,

cotton, sunflowers, or soybeans can be planted the following spring following flumioxazin treatment. Residual weed control with flumioxazin will depend on rainfall for activation, just as with preplant treatment in soybeans.

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3. Curtis R. Thompson, Professor and Extension Specialist for Weed Science, to retire after 25 years at K-State

Curtis Thompson, Professor and Extension Specialist for Weed Science and Agronomy Extension State Leader, will conclude his tenure in the Department of Agronomy on July 18, 2018. He has 25 years of professional service to Kansas State University, The College of Agriculture, and Kansas State Research and Extension, with 40 years total in the work force.

Curtis grew up on a diversified farm in north central North Dakota. After earning a bachelor's degree from North Dakota State University in 1978, he was employed as a research technician in weed science at NDSU while working on and attaining a master's degree in 1983. He served as a research

agronomist from 1982 to 1989 at the NDSU North Central Research and Extension Center in Minot, ND. Thompson moved on to graduate school in August 1989 and worked as a technician in weed science at the University of Idaho while working on and attaining a Ph.D. in Plant Science in 1993.

Thompson began his tenure with K-State on July 18th, 1993 at the Southwest Research Extension Center, Garden City as Assistant Professor and the Crops and Soils Extension Specialist responsible for Agronomic programing in Southwest Kansas. Curtis thoroughly enjoyed working directly with Ag Agents and Farmers conducting applied research and doing extension work. He moved through the ranks attaining Associate and Full Professor and served in this position for almost 15 years.

In 2008 Curtis moved to the Manhattan campus to assume the duties of Professor and Extension and Research Specialist in Weed Science in the Department of Agronomy. He focused on weed management in grain sorghum and corn as well as focusing on herbicide-resistant weed management, especially kochia and Palmer amaranth. Over the years, Thompson's efforts have led to the registration of several herbicides in corn, sorghum, and sunflower. Thompson and colleagues developed strategies for controlling glyphosate resistant kochia in western Kansas. Thompson discovered the first HPPD-resistant Palmer amaranth in the U.S. and has worked with Dr. Mithila Jugulam, weed physiologist in Agronomy, to unravel the resistance mysteries.

Thompson has served as the State Extension Leader for Agronomy since July 2012. Thompson has been recognized by his peers, receiving the Fellow award from the American Society of Agronomy and the North Central Weed Science Society.

During the early part of Thompson's career, Curtis married his wife, Meri and they have 3 children: Keilah (spouse Anna), Krista (spouse Joshua), and Ryan (spouse Dawn) and 9 grandchildren.

A retirement coffee is planned for July 18, Wednesday afternoon from 3:00 to 4:00 pm in Room 2002, Throckmorton Hall, at Kansas State University.

An informal gathering for food, beverage, and conversation will be held on July 18 at 6:30 p.m. at the Thompson residence, 5811 Edgewater Rd, Wamego, KS. All are welcome to attend while supplies last

4. June Soil of the Month for Kansas: Harney

For June's installment of the soil of the month series, we chose the Harney soil series, which is the official state soil of Kansas. It became the state soil on April 12, 1990. Every state has selected a state soil and 20 of them have been established through an act of legislation, like the Harney. Official state soils have the same level of distinction as state flowers and birds. For any non-native Kansan readers, you can learn about your state soil here: https://bit.ly/2qFYjMq

Harney: The State Soil of Kansas

The Harney soil series is quintessential Kansas; formed under prairie vegetation, now commonly used for wheat production. Four million acres of Harney are mapped in west-central Kansas (Figure 1). As were the Colby and Ulysses series, Harney is derived from silty wind-deposited sediments called *loess* which was once dust in the wind (see below). The name "Harney" is derived from the word "harahey", a Wichita Indian term for the Pawnee people.

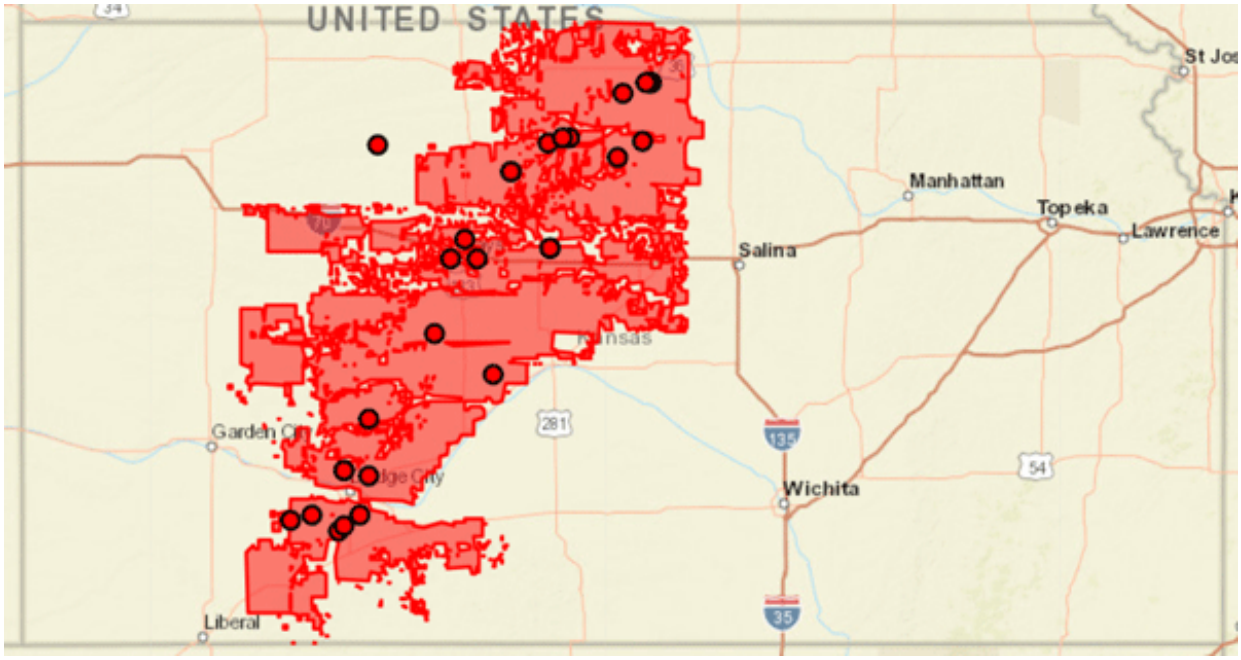

Figure 1. Soil series extent map in Kansas for the Harney soil series. Map created using USDA-NRCS Official Soil Series Description website.

Kansas: Classic rock, classic soil

Either they were soil scientists, or by eerie coincidence, the band Kansas released an album in 1979 called Monolith and according to Wikipedia, "The album generated a Top 40 single in "People of the South Wind", whose title refers to the meaning of the 'Kanza' (Kaw) Native American people, after whom the state and the band are named." Speaking of a south wind, "The most unwelcome winds of the state are the so-called 'furnace winds' that occur in prolonged heated periods. Usually from the south, and with shade temperatures from 100 to 116 degrees F or higher, these winds often have high velocities and cause great injury to growing crops" (Kansas Agricultural Experiment Station,

1942) and can wilt extension specialists.

A mollisol like no other

The Harney series has exceptional soil properties for growing crops, mainly wheat and grain sorghum. Like the Colby series featured in our first article this year, it's a mollisol, meaning that it has several inches of dark topsoil formed through the accumulation of organic matter from the decay of prairie vegetation over several thousand years' (Figures 2 and 3). All this organic matter makes the Harney a very fertile soil. Soil scientists can tell that the Harney soil is thousands of years old because of a clay bulge that is present in the B horizon, where clay has moved from the topsoil and accumulated in the subsoil. This also explains why the typical Harney soil has silt loam textures near the surface, silty clay loam textures in the B horizon (subsoil), and then silt loam texture again in the bottom of the soil profile. Having high organic matter content and silty textures are the best soil properties for storing water, and it does so at a tension that's just right for plants to access—plus, these properties are also ideal for capturing precipitation when it does come. So often our precipitation is accompanied by high winds and when soil is left unprotected, the particles are easily lost as dust in the wind, of course.

Figure 2. Soil monolith of the Harney soil series. Photo by Kathy Gehl, K-State Research and Extension.

Figure 3. Photo of Harney silt loam, 1 to 3 % slopes, in Hodgeman County. Photo courtesy of the MLRA office in Hays, KS.

Stay tuned for more!

This mini-project to inform our readers of the many unique soils in our great state is in full swing. We have highlighted 6 soil series: Colby, Ulysses, Dwight, Pawnee, Quinlan, and now Harney. There are more Kansas soils left to discuss! See you in a few weeks!

Harney Official Series Description: https://soilseries.sc.egov.usda.gov/OSD_Docs/H/HARNEY.html
Kansas Historical Society: https://www.kshs.org/kansapedia/harney-silt-loam/17238
KAES pub, 1942: https://www.ksre.k-state.edu/historicpublications/pubs/SB302.PDF

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5. Fungicide management of gray leaf spot - Don't miss treatment window

It may seem odd for late June/early July, but some fields in northeast Kansas are already at the brown silk stage and most of them are at VT to early R1. Some fields in far southeast Kansas are already well beyond the optimum time for fungicide application. A recent scouting trip through northeast Kansas indicated a wide range of disease pressure from zero, to some fields in the western Kansas River Valley with gray leaf spot on the ear leaf minus three, which is a threshold level where fungicide application should be considered, especially with susceptible to moderately susceptible hybrids. Over the next few weeks, corn in the rest of the state will be at the critical juncture for making fungicide application decisions for gray leaf spot management. On a scouting trip made on June 21 and 22 to western Kansas, very little gray leaf spot could be found, but there was plenty of corn bacterial streak. Remember, to untrained eyes, these two diseases can look similar. See the section further below in this article for identification methods.

Factors in corn yield response to fungicide applications

Years of fungicide application research clearly demonstrates that the single best time to apply a fungicide to corn for gray leaf spot control is from VT to R1. A single application at V7 – V8 will not hold up against late-season pressure. Those who choose to put a fungicide down with their last herbicide treatment will most likely have to apply second cover at VT – R1 if there is any gray leaf spot pressure at all. A VT – R1 application may also provide some suppression of southern rust, should it arrive early enough to cause yield loss.

University fungicide trials also reveal that final disease severity plays a critical role in the magnitude and consistency of yield response to a foliar fungicide application. The tricky part is being able to predict before the VT to R1 stages what the disease pressure will be several weeks later. To make such a prediction, you need to consider “disease risk factors” and to scout for disease.

Disease risk factors include:

Susceptibility level of corn hybrid. Seed companies typically provide information on the susceptibility of their hybrids to gray leaf spot in their catalogs. In general, hybrids that are more susceptible to fungal foliar diseases will have a greater response to a foliar fungicide (if disease pressure is high enough).

Previous crop. Because gray leaf spot survives in corn residue, the risk of disease increases when corn is planted back into a field that was in corn the previous year.

Weather. Rainy and/or humid weather generally is most favorable to gray leaf spot. In growing seasons when these conditions prevail, the risk for disease development increases.

Field history. Some field locations may have a history of high foliar disease severity. Fields in river bottoms or low areas or surrounded by trees may be more prone to having gray leaf spot.

Begin scouting for gray leaf spot in corn about two weeks before expected tassel emergence. Gray leaf spot is characterized by rectangular lesions that are 1-2 inches in length and cover the entire area between the leaf veins. Early lesions are small, necrotic spots with yellow halos that gradually expand to full-sized lesions. Lesions are usually tan in color but may turn gray during foggy or rainy conditions. The key diagnostic feature is that the lesions are usually very rectangular in shape.

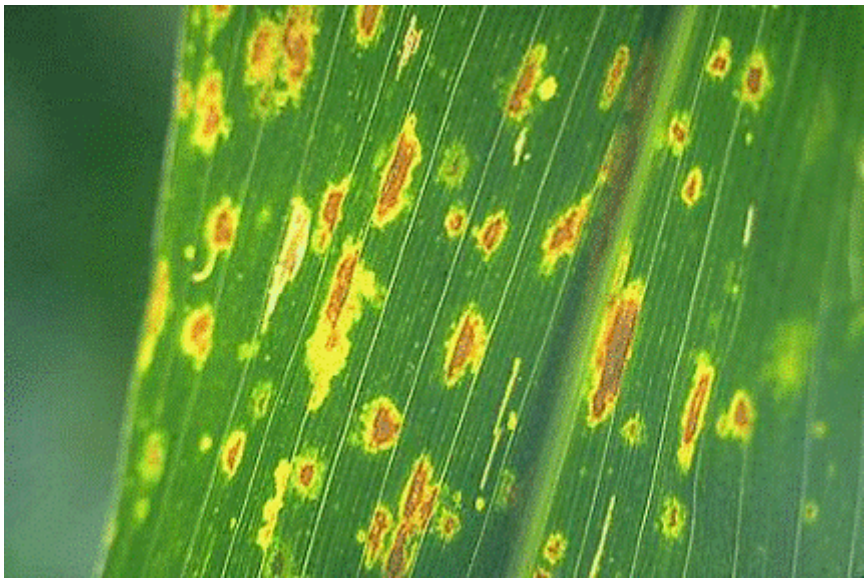

Figure 1. Early development of gray leaf spot lesions showing a distinct yellow halo. Photo courtesy of Doug Jardine, K-State Research and Extension.

Current disease management guidelines suggest the following criteria for considering an application of foliar fungicide:

- For susceptible hybrids (those with the lowest rating within a company's lineup): Fungicide applications should be considered if disease symptoms are present on the third leaf below the ear or higher on 50 percent of the plants examined.
- For intermediate hybrids (those with an average rating within a company's lineup): Fungicide applications should be considered if disease symptoms are present on the third leaf below the ear or higher on 50 percent of the plants examined, if the field is in an area with a history of foliar disease problems, if the previous crop was corn, if there is 35 percent or more surface residue, and if the weather is warm and humid.
- For resistant hybrids (those with the best rating within a company's lineup): Fungicide applications generally are not recommended.

According to the data from Illinois corn fungicide trials, if at least 5 percent of the ear leaf area is affected by disease at the end of the season, a foliar fungicide applied between VT and R1 would likely have been beneficial. Using the disease risk factors and scouting observations collected just before tassel emergence will help you predict how severe disease may be several weeks after the VT to R1 stages, and help you decide whether to apply a foliar fungicide.

If no disease is present or pressure is low, I recommend holding off on the R1 application since efficacy will begin to wane in three to four weeks, just as late season pressure may begin to develop.

Data exists that would suggest that if pressure begins to develop later, an R2 application can be economical and will provide protection later into the grain fill period. This later application could also protect against any late-season southern rust pressure.

Distinguishing between gray leaf spot and bacterial streak

Bacterial streak, identified as a new corn disease in the U.S. in 2016, is now active in most of western Kansas. While yield loss potential for this disease remains unknown, we do know that it can be misidentified as gray leaf spot, resulting in unwarranted fungicide applications. Keep in mind that gray leaf spot typically has very sharp edges defined by the leaf veins, whereas bacterial streak will have a wavy edge that can cross the leaf vein (Figure 2). Also, when backlit with light, gray leaf spot lesions will have an opaque appearance while bacterial streak lesions are more translucent (Figure 3).

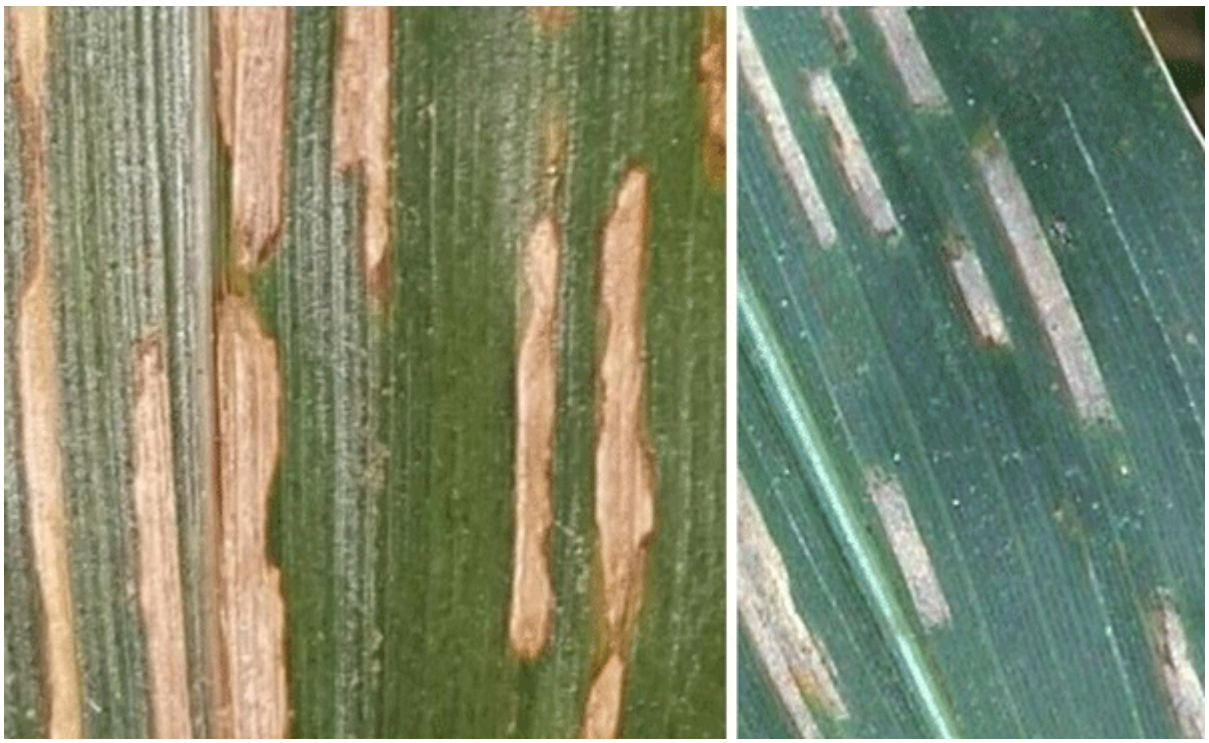

Figure 2. Comparison of sharp-edged gray leaf spot lesions (right) with wavy-edged bacterial streak lesions (left). Photo courtesy of the University of Nebraska.

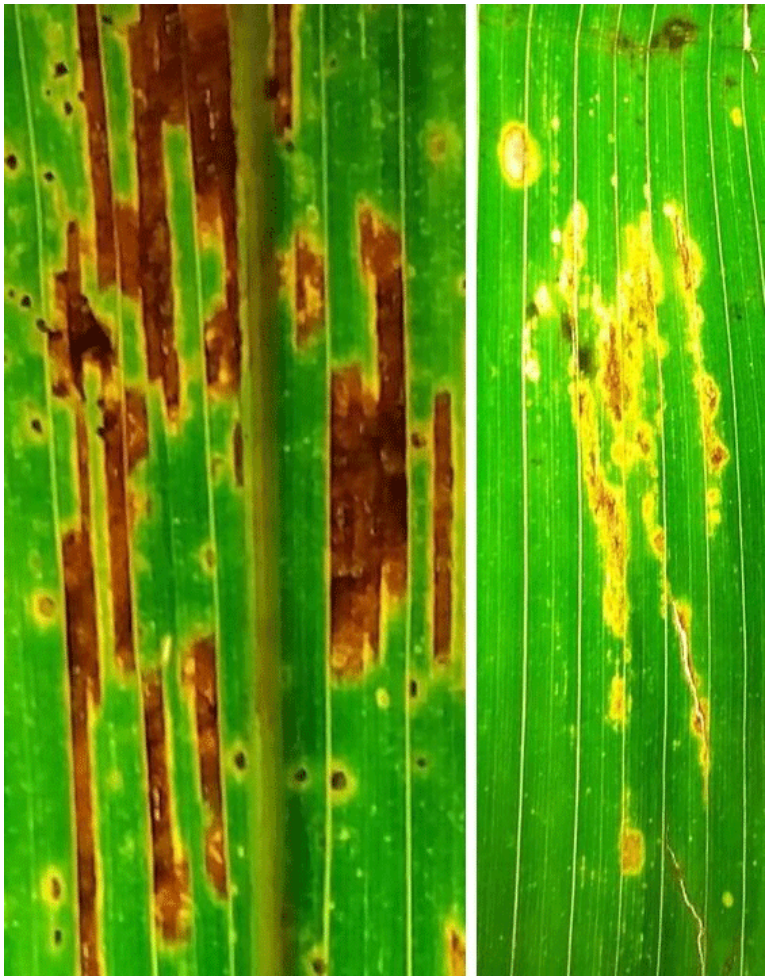

Figure 3. Gray leaf spot lesions (left) have an opaque appearance whereas as bacterial streak allows light to more easily pass through giving it a translucent appearance (right). Photo by Doug Jardine, K-State Research and Extension.

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6. Start scouting soon for sugarcane aphids

The sugarcane aphid (SCA) has not been found as of yet on sorghum in Kansas. There have been a few confirmed reports of the sugarcane aphid in Oklahoma and Texas, which means the aphid is slowly making its way north (Figure 1). Activity is generally light so far, but the situation on the ground can change quickly with this aphid.

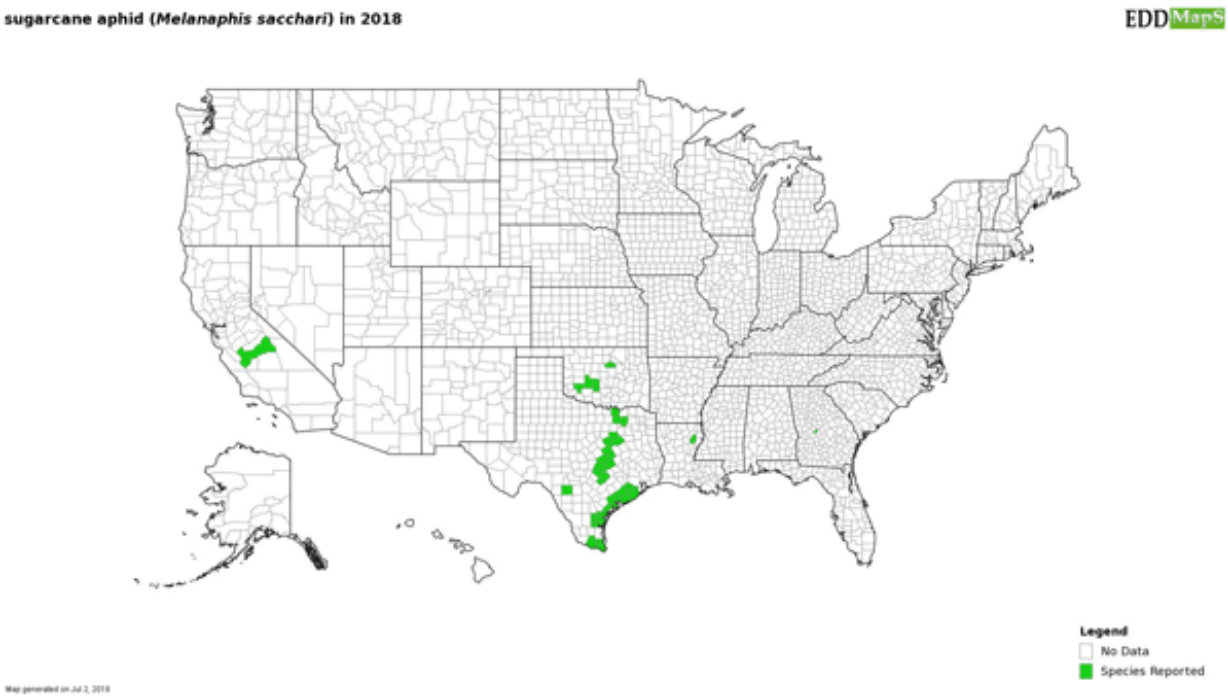


Figure 1. Current status of the SCA. The map indicates only the counties in which the SCA has been found, and does not indicate how many or how few aphids were found in that county. Source: https://www.myfields.info/pests/sugarcane-aphid

What can we expect this season? It's impossible to know for sure at this time. Infestations in Kansas in 2017 were sporadic, and most issues were late season (Figure 2). But in 2016, sugarcane aphids were a significant problem on grain sorghum in Kansas, Texas, Oklahoma, and most southern states, and fields were justifiably sprayed to protect yields.

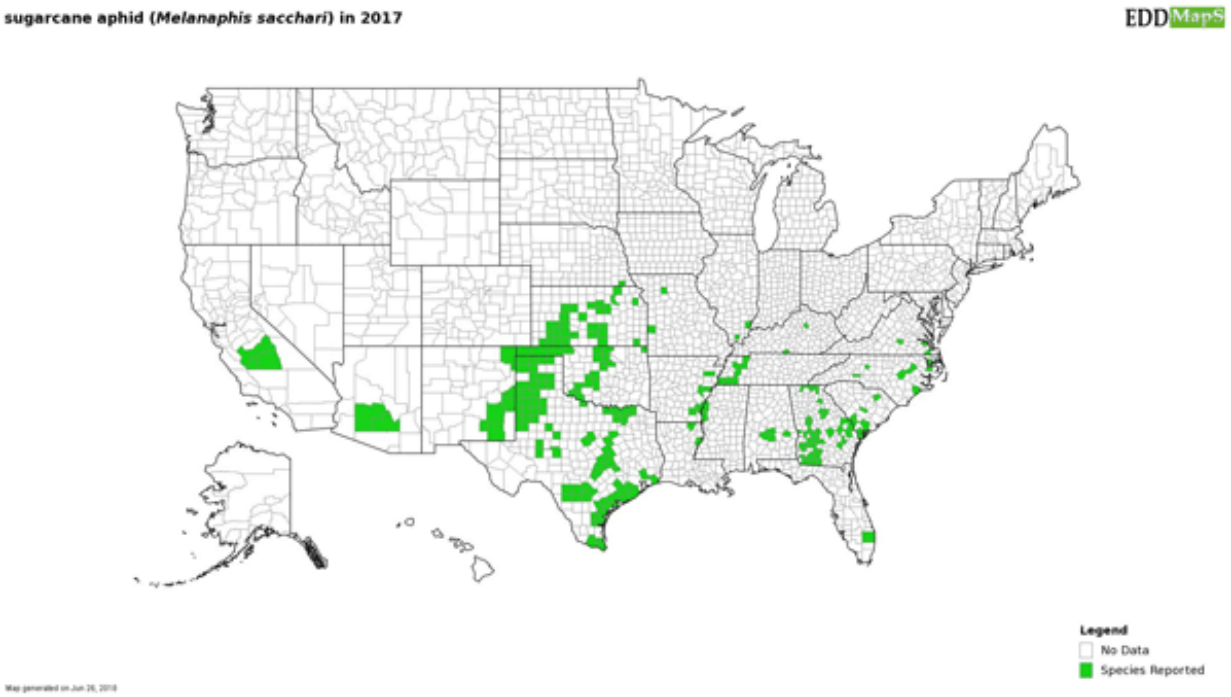
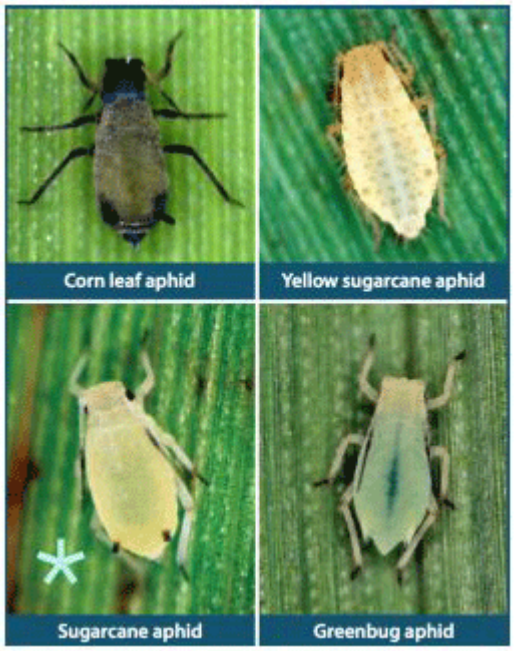


Figure 2. The distribution of SCA in 2017.

Since aphids have been found in Oklahoma, it is advisable to begin scouting while sorghum is still in the pre-boot stage. Early detection is key to the management of this pest, but treatments should be based on established thresholds. One, heavily infested plant does not equal a yield loss. Applying insecticides too soon can result in repeated applications, which occurred during the 2015 season. See scouting and treatment recommendations below.



Scouting time

Plants are vulnerable to infestation by SCA at any growth stage, but Kansas sorghum is most at risk from boot stage onward. The ability of sugarcane aphid to overwinter on Johnsongrass and re-sprouting sorghum stubble represents challenges to the management of this pest in more southerly regions.

In 2017, the SCA overwintered as asexual females on Johnsongrass rhizomes in south central Texas and northern Mexico. Infestations begin when swarms of winged aphids settle in a field and begin to establish colonies, which usually occurs after a large storm front pushes aphids from south to north. Once winged adults deposit nymphs, these immature aphids can mature in less than a week, lack wings, and have a much higher reproductive rate than their winged mothers. Established colonies of wingless aphids quickly become large and crowded, which causes winged forms to develop, until the final generation is exclusively winged once again. Thus, the trend will be for Kansas to receive SCA only after infestations to the south mature and produce winged migrants. Growers are advised to plant sorghum as early as agronomically feasible to maximize plant growth and maturity before aphids arrive. In 2017, large flights of winged sugarcane aphid arrived in Kansas somewhat later than in 2016 and a smaller area of the state was affected, despite cold wet spring weather in the south that delayed the aphids initially. It remains to be seen how the 2018 season will develop, but given the slow march across Texas and Oklahoma, we expect to see something similar to last year.

Sampling method

- Once a week, walk 25 feet into the field and examine plants along 50 feet of row:
- If honeydew is present, look for SCA on the underside of a leaf above the honeydew.
- Inspect the underside of leaves from the upper and lower canopy from 15–20 plants per location.
- Sample each side of the field as well as sites near Johnsongrass and tall mutant plants.
- Check at least 4 locations per field for a total 4 locations per field for a total of 60-80 plants.

If no SCA are present, or only a few wingless/winged aphids are on upper leaves, repeat this sampling method once a week thereafter.

If SCA are found on lower or mid-canopy leaves, begin twice-a-week scouting. Use the same sampling method, but be sure to include % plants with honeydew. Estimate the % of infested plants with large amounts of SCA honeydew (shiny, sticky substance on leaf surface) to help time foliar insecticides for SCA control on sorghum (Table 1).

Table 1. SCA thresholds

Growth Stage	Threshold
Pre-Boot	20% plants infested with localized area of heavy honeydew and established aphid colonies
Boot	20% plants infested with localized area of heavy honeydew and established aphid colonies
Soft dough	30% plants infested with localized area of heavy honeydew and established aphid colonies
Dough	30% plants infested with localized area of heavy honeydew and established aphid colonies

Black Layer	Heavy honeydew and established aphid colonies in head *only treat to prevent harvest problems **observe preharvest intervals

The myFields web site: Keeping updated on SCA in Kansas and reporting findings

For ongoing current information on SCA in Kansas, check out the myFields web site often in the coming weeks and months: https://www.myfields.info/pests/sugarcane-aphid

It would be helpful if producers would report findings of SCA in their fields on the myFields web site as soon as the insects are found. Reports of findings are used in developing the maps seen in Figures 1 and 2.

The reports used to develop each map are, in part, those submitted through the myFields web site from account holders that also have special permissions as "Verified Samplers." Only reports submitted by these verified samplers get mapped so that we can account for data quality. However, we do encourage any account holder to report their observations on the SCA. Web site administrators can see these reports and can contact the submitter for a confirmation, a great way to get an early detection in new areas. Web site visitors will need to: 1) sign up for an account, 2) log in, 3) to get access to the '*Scout a Field*' feature to make reports. The *Scout a Field* tool is easy, you just map the observation location and select yes or no for SCA presence.

Here is the sign up page: https://www.myfields.info/user/register

Also, if sorghum producers are interested in receiving alerts, which are triggered by new reports submitted by verified samplers, they just need to sign up for a free myFields.info account using the link above. Signing up for an account automatically signs them up for SCA alerts, but they can also opt out of them in their user preferences. The alerts include a statewide email notice when SCA is first detected in the state, and then are localized by county as SCA moves into the state. The notices will also contain latest recommendations and contact info for local Extension experts.

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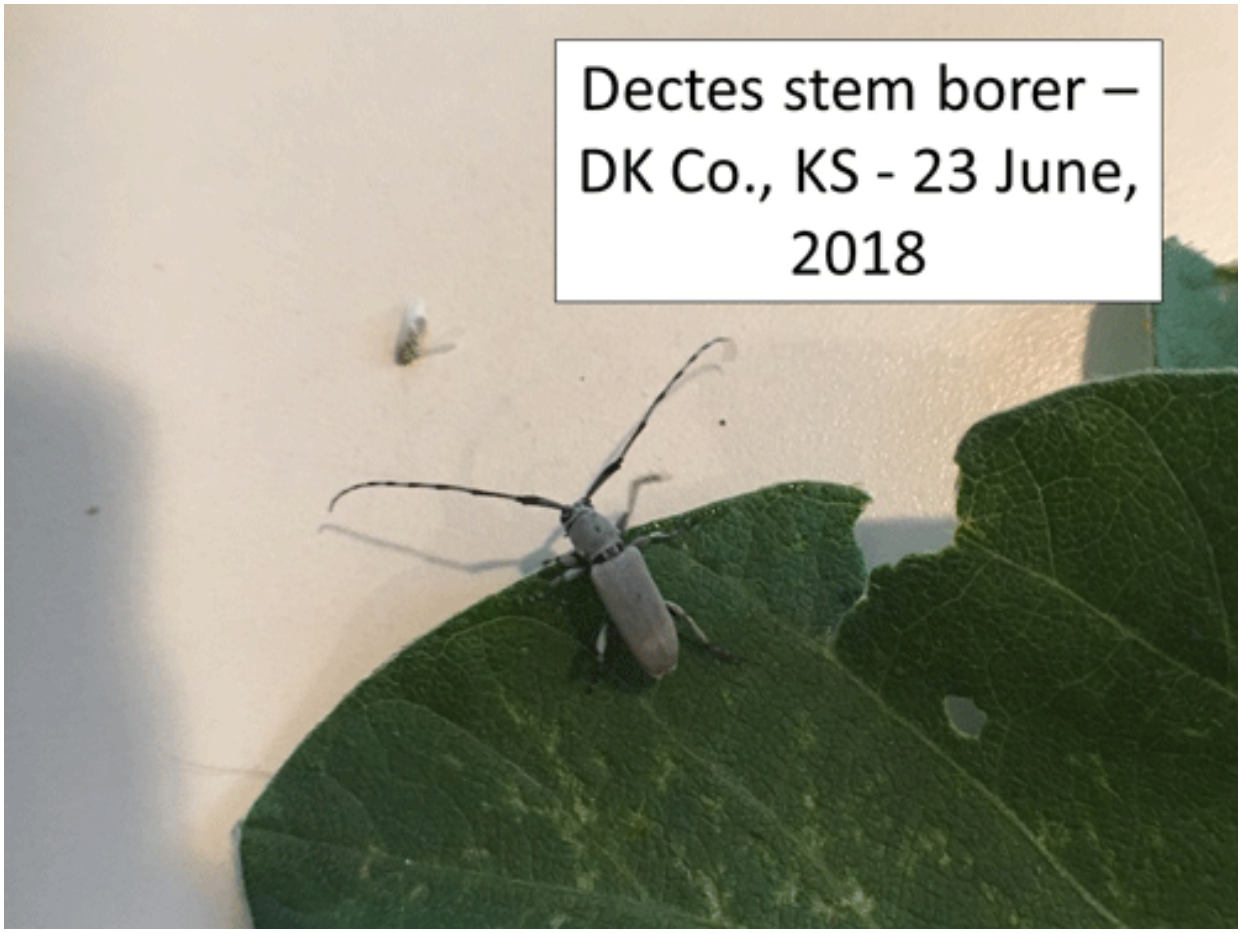
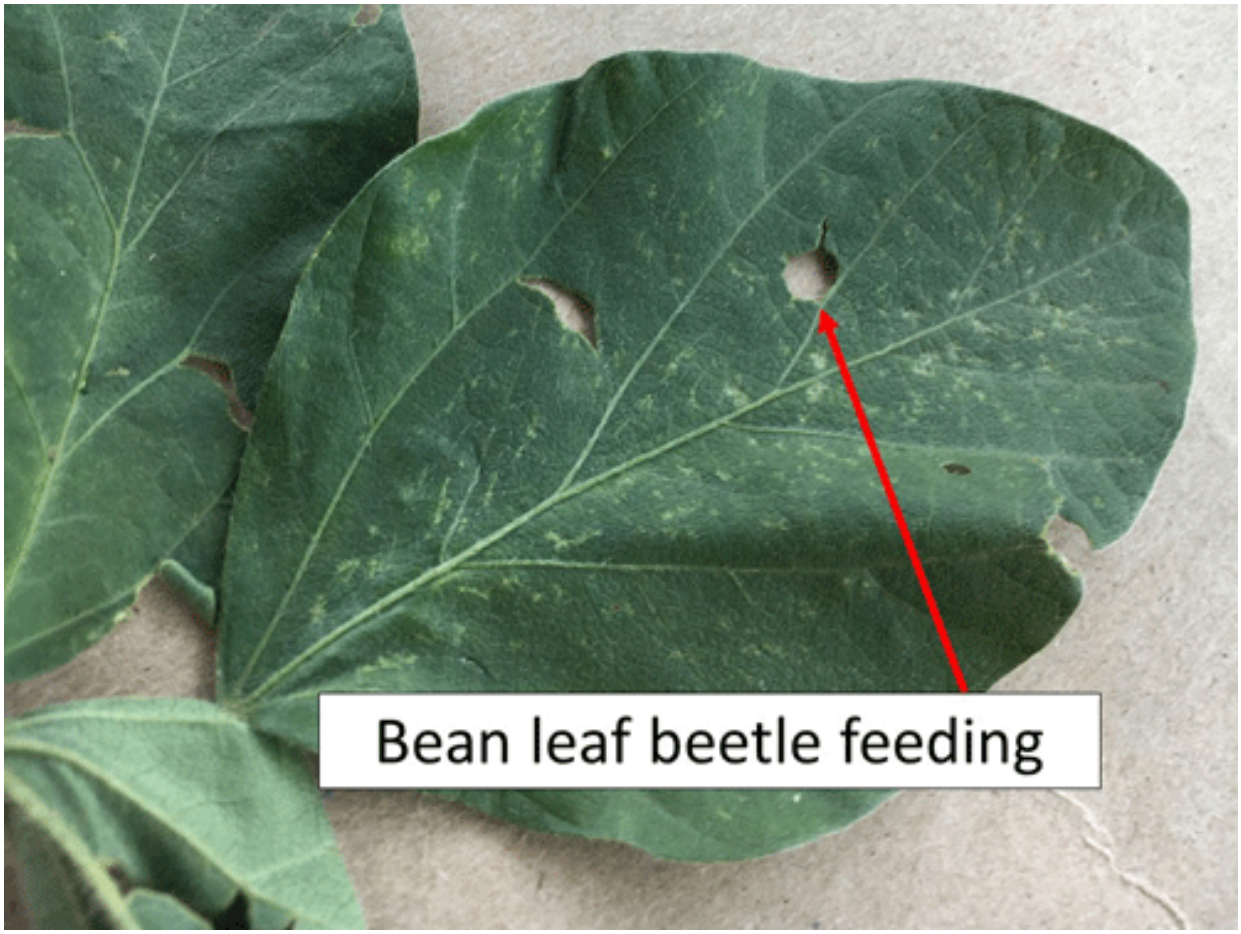
Soybean Update

The first adult Dectes stem borer was detected on 23 June, from north central Kansas (specifically, DK Co.). These beetles traditionally spend approximately 7-14 days congregating or aggregating around the borders of stubble fields near where they overwintered. Then, they disperse throughout soybean and sunflower fields and begin depositing eggs in plants of either crop. Several more have been collected since the 23rd.



Bean leaf beetle adults have been and will continue chewing characteristic round or oblong holes in soybean leaves. However, at least around north central Kansas, populations seem reduced from recent years.



So far, other than a few small grasshopper nymphs, there seem to be less defoliators than usual in either alfalfa or soybeans. However, there is still time left for significant populations to develop. A few garden webworms and yellow-striped armyworms were collected from a couple of fields and many of the soybeans are still very small, in the 3-5 trifoliate stage.

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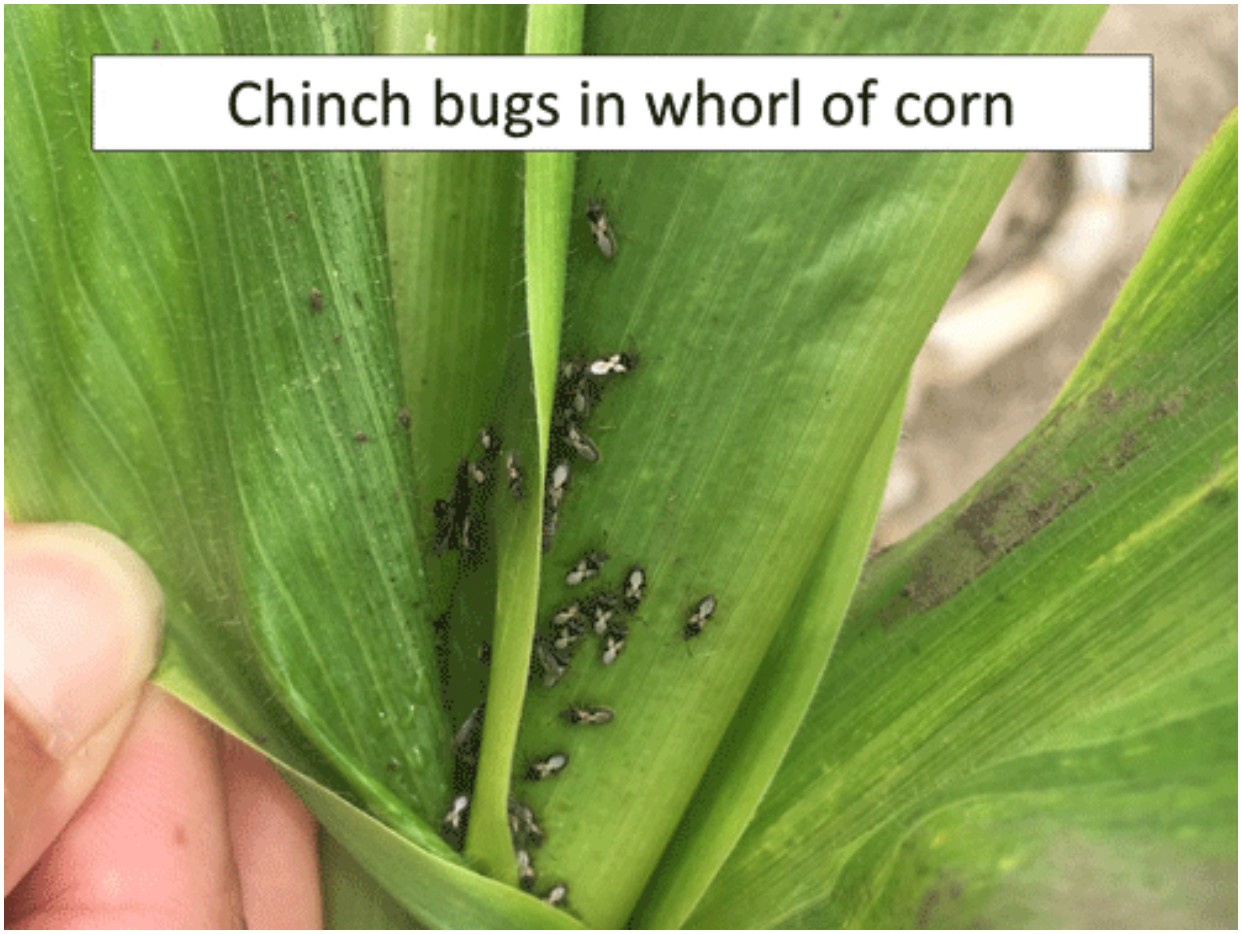
Corn and Sorghum Update

Chinch bug populations continue to increase at a very disconcerting rate. Most corn throughout north central Kansas is far enough along in its development to tolerate large numbers of chinch bugs. Smaller sorghum can still be seriously stressed by growing populations of chinch bugs, especially as the hot and dry conditions return. For more information of chinch bug management in sorghum, please see the KSU 2018 Sorghum Insect Management Guide: https://www.bookstore.ksre.ksu.edu/pubs/mf742.pdf

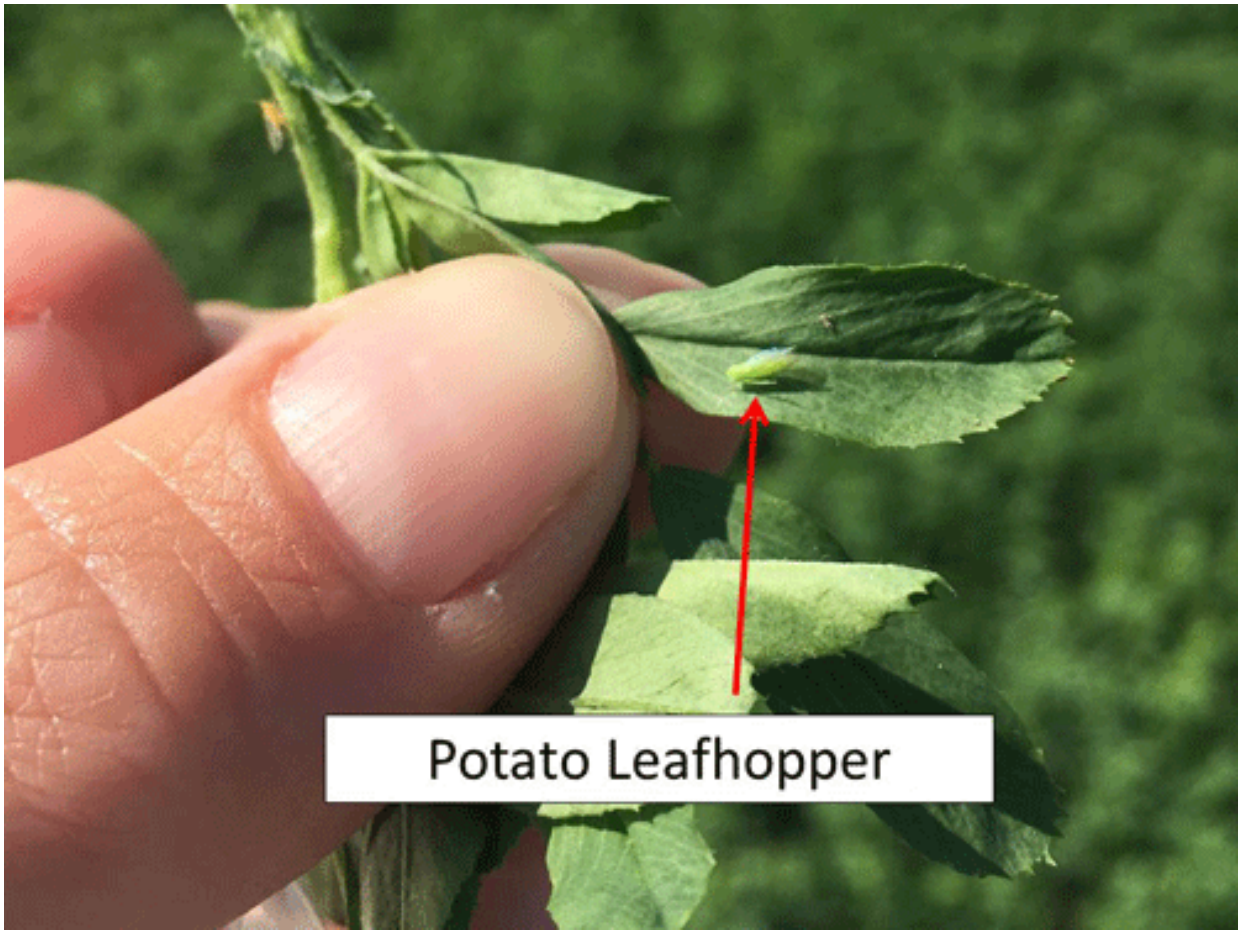


One relatively mature fall armyworm larva was also detected. Thus, in approximately 2-3 weeks there will be a new generation of fall armyworm larva ready to start feeding, most likely, on sorghum.

Alfalfa Update

Several alfalfa fields were sampled in north central Kansas this past week. The alfalfa canopy remains an excellent habitat for many insects, especially those fields not treated for alfalfa weevils this year. Many of these insects are beneficial.

Very few pests, or potential pests, were detected although there were a few potato leafhoppers present. These small, lime green, herky-jerky, moving pests are apparently just beginning to migrate into KS, as we didn't find any earlier in the week, and now are only finding a couple of adults. For more information relative to potato leafhopper management, please refer to the KSU 2018 Alfalfa Insect Management Guide: https://www.bookstore.ksre.ksu.edu/pubs/mf809.pdf



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8. Exciting news for 2018 - Kansas Corn Yield Contest

Corn harvest in Kansas will be here before you know it. Corn producers in the state are encouraged to keep in mind the Kansas Corn Yield Contest before they fire up the combines this year.

Kansas Corn, in conjunction with K-State Research and Extension, will conduct a 2018 Kansas Corn Yield Contest. All Kansas corn producers are eligible to enter the contest, but they must be active members of the Kansas Corn Growers Association.

The contest is a fun way for producers to showcase their high yielding and high quality corn with other growers in the state, and provide motivation to producers to increase yields. The contest also serves as a vehicle to improve farming operations and increase awareness of best management practices (BMPs) to improve and sustain corn yields.

In addition to grower recognition, cash awards will be presented to the 1st ($300), 2nd ($200), and 3rd ($100) place winners for the 10 districts across Kansas. The districts align with crop reporting districts, plus a NNE district was created to include Doniphan and parts of Brown and Atchison. The overall highest yields in the dryland and irrigated categories each will receive an additional $500. All farmers entering the contest and completing the harvest form will receive a shirt from Kansas Corn. Contest winners will be recognized at the Kansas Corn Symposium in late January 2019.

The contest is free of charge to members of the Kansas Corn Growers Association. Pre-registration must be complete by **August 30, 2018 or prior to harvest.** All entries must be postmarked by December 1, 2018. The contest is divided into “dryland” and “irrigated” categories in all 9 Kansas crop reporting districts plus a 10th district in NNE Kansas (Figure 1).

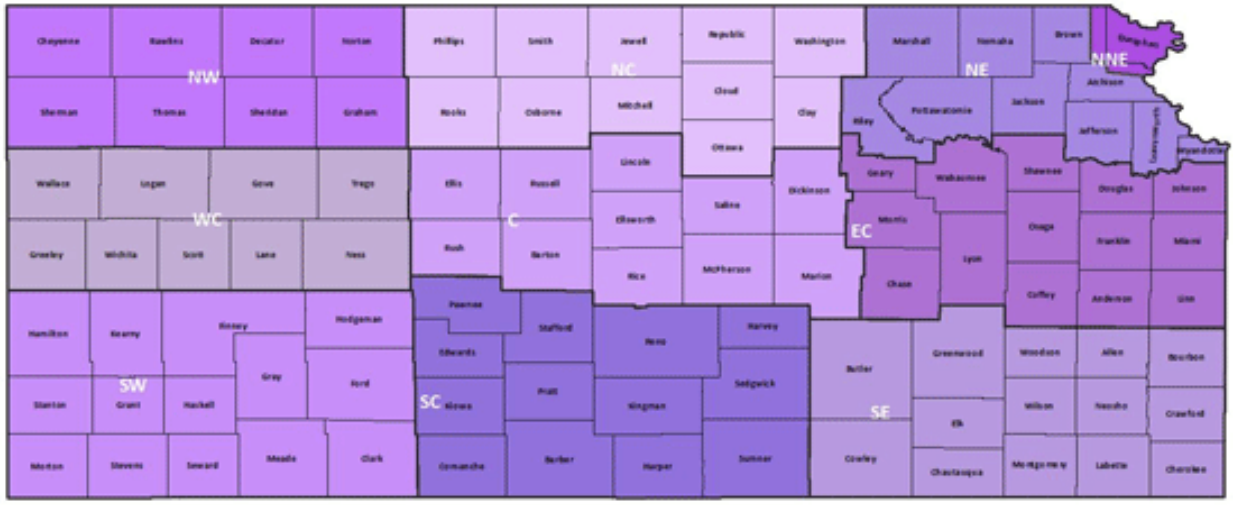

Figure 1. Dryland and irrigated contest districts. Note: NNE includes only those fields north and/or east of KS Hwy 73 in Brown, Doniphan, and Atchison counties.

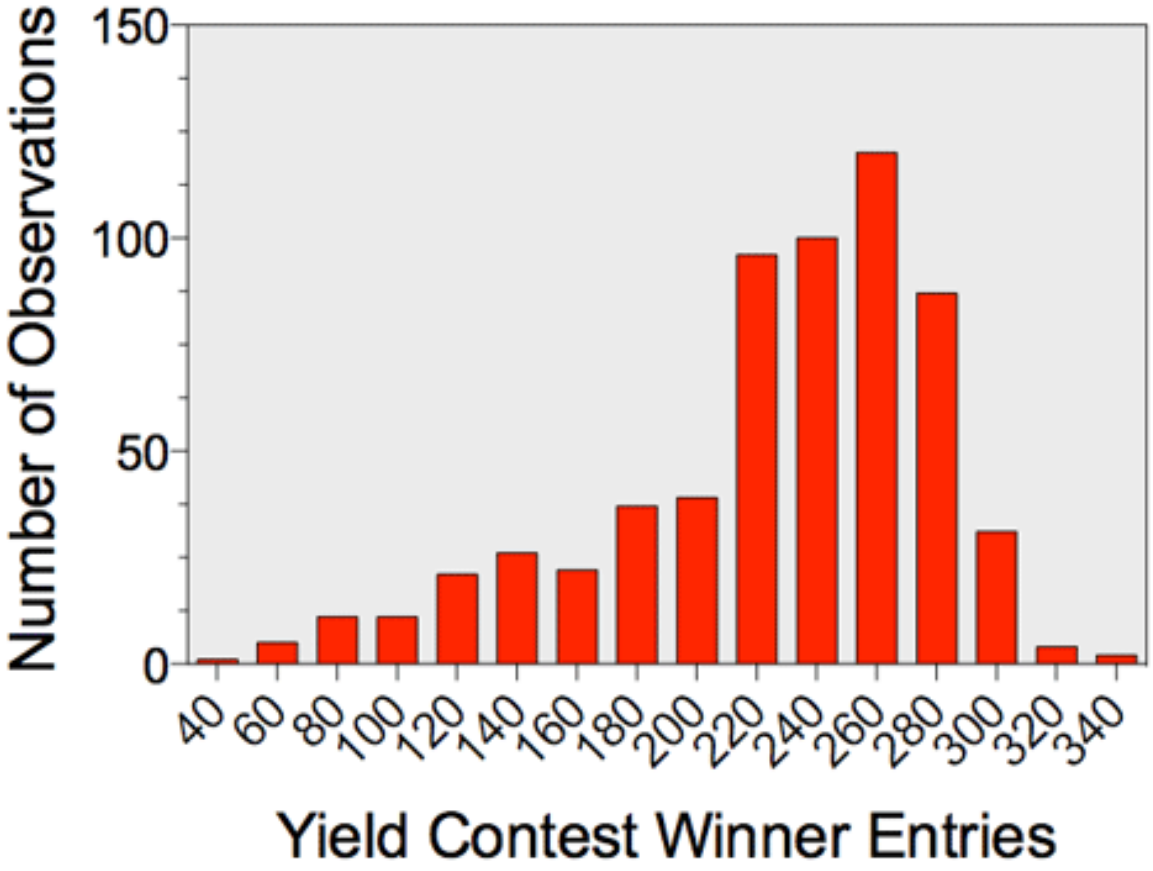

Figure 2. Kansas contest winner entries to the National Corn Contest from 2011-2106. Yield values along the x-axis are in bushels per acre. Graph produced by Ignacio Ciampitti, K-State

Research and Extension.

All contest rules and required entry forms can be found online at **https://kscorn.com/yield/**

If a producer has interest in submitting an entry in the Kansas Corn Yield Contest, they need:

1. A minimum of field size of 10 acres with only 1 entry per field allowed
2. A KSRE Extension Agent, FFA Advisor, lender, farm manager, or other impartial person to witness the harvest
3. The entry/harvest form postmarked by December 1, 2018

The entry forms should be sent to:

Kansas Corn Yield Contest
Kansas Corn Growers Association
1310A Westloop Pl #285
Manhattan, KS 66502

Download here the entry form:

https://kscorn.com/wp-content/uploads/2018/06/Kansas-Corn-Yield-Contest-Harvest-Entry-Form.pdf

For any questions concerning the contest, please contact the individuals listed below.

Dale Fjell, Director of Research and Stewardship, Kansas Corn
dfjell@ksgrains.com, 785-410-5285

Ignacio A. Ciampitti, Crop Production and Cropping Systems Specialist, K-State Department of Agronomy
ciampitti@ksu.edu, 785-532-6940

9. Soil health summer tour - July 27, 2018

K-State Research and Extension and the Department of Agronomy, in conjunction with the Kansas Corn Growers Association and the Soil Health Partnership, is hosting a Soil Health Summer Tour on Friday, July 27th.

The tour will consist of a field day at two locations on July 27:

- **Glen Elder – 10:00 a.m. to noon**
  - Palen Family Farms, 1031 180 Road, Glen Elder, KS 67446

- **Spring Hill – 5:00 p.m. to 7:00 p.m.**
  - Guetterman Brothers Family Farms, 14633 West 239th Street, Spring Hill, KS 66083

The program will include a discussion of management practices to improve overall productivity and soil health to benefit farmers. Presenters on the tour include:

- Dr. Charles Rice, Soil Microbiologist
- Dr. Ignacio Ciampitti, Crop Production and Cropping Systems Specialist
- Dr. Dorivar Ruiz Diaz, Soil Fertility Specialist

A meal will be provided at each location courtesy of the sponsors. Please RSVP by July 20 for the location you plan to attend. You can send the RSVP to Troy Lynn Eckart at sprite@ksu.edu or 785-532-0400, or the individuals listed below.

Glen Elder, KS – Sandra Wick, Crop Production Extension Agent, Post Rock District, swick@ksu.edu, 785-282-6823

Spring Hill, KS – Katelyn Barthol, Agriculture and Natural Resources Agent, Marais des Cygnes District, kbarth25@ksu.edu, 913-294-4306.

KANSAS STATE UNIVERSITY
Department of Agronomy

K-STATE Research and Extension

KANSAS CORN GROWERS ASSOCIATION

SOIL HEALTH PARTNERSHIP

SOIL HEALTH SUMMER TOUR – Field Day

Friday, July 27th

Glen Elder, KS – 10 am to 12pm

1031 180 Rd, KS 67446

Palen Family Farms

Spring Hill, KS – 5 pm to 7pm

14633 West 239th St, KS 66083

Guetterman Brothers Family Farms

We will be discussing management practices to improve overall productivity and soil health to benefit farmers.

PRESENTERS

Dr. Charles Rice
Soil Microbiology

Dr. Ignacio Ciampitti
Crop Production

Dr. Dorivar Ruiz Diaz
Soil Fertility

* Lunch and dinner provided by sponsors