Issue 669

K-STATE Research and Extension

Extension Agronomy

eUpdate

01/19/2018

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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1. Update on possible impacts of January's cold temperatures to the Kansas wheat crop

The extent of possible winter damage to the developing wheat crop due to low temperatures will depend on several variables including:

- Crop development
- Extent and duration of low temperatures
- Soil temperature
- Soil moisture
- Snow cover

Minimum air temperatures and their duration are the leading factors in any possible winter injury. However, it is important to remember that the crown is protected by the soil during this stage, so factors other than air temperature also need to be considered. For instance, crown insulation by the soil (influenced by seed-to-soil contact at sowing and sowing depth), crown root development, above-ground crop development, soil temperature, soil moisture, snow residue, crop residue, and how well the crop acclimated during the fall, will all influence the crop's response to below-freezing temperatures at this stage.

What level of cold can the wheat crop withstand at this stage?

Wheat needs at least 4-5 leaves and 1-2 tillers prior to winter dormancy for good cold tolerance, but for maximum cold tolerance, 3-5 well developed fall tillers is ideal. In this situation, wheat can withstand air temperatures of -5 to -10 degrees F for a couple hours without significant risk of winterkill (Figure 1) as long as temperatures at the crown level do not reach single digits.

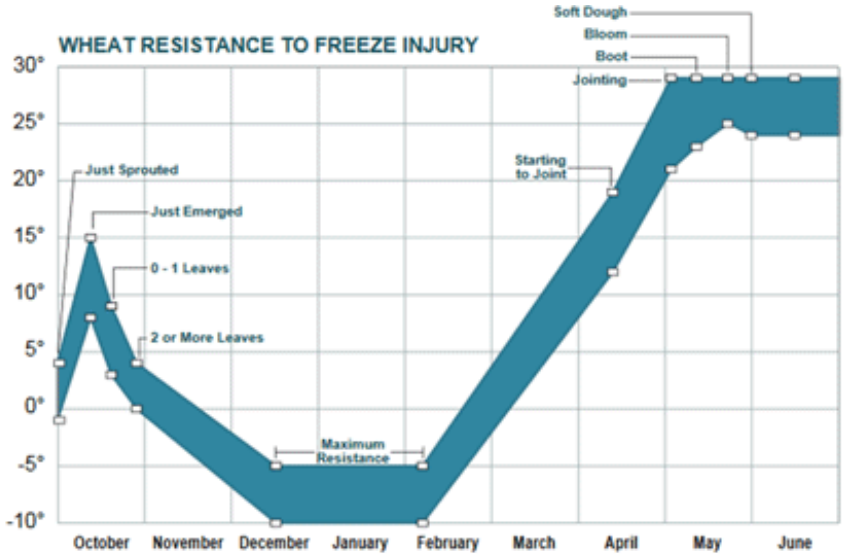


Figure 1. Temperatures that cause freeze injury to winter wheat at different growth stages. Winter wheat rapidly loses hardiness during spring growth and is easily injured by late freezes (graph adapted from A.W. Pauli).

Figure 1. Temperatures that cause freeze injury to winter wheat at different growth stages. Maximum resistance to cold temperatures occur between mid-December and early-February. Adapted from A.W. Pauli.

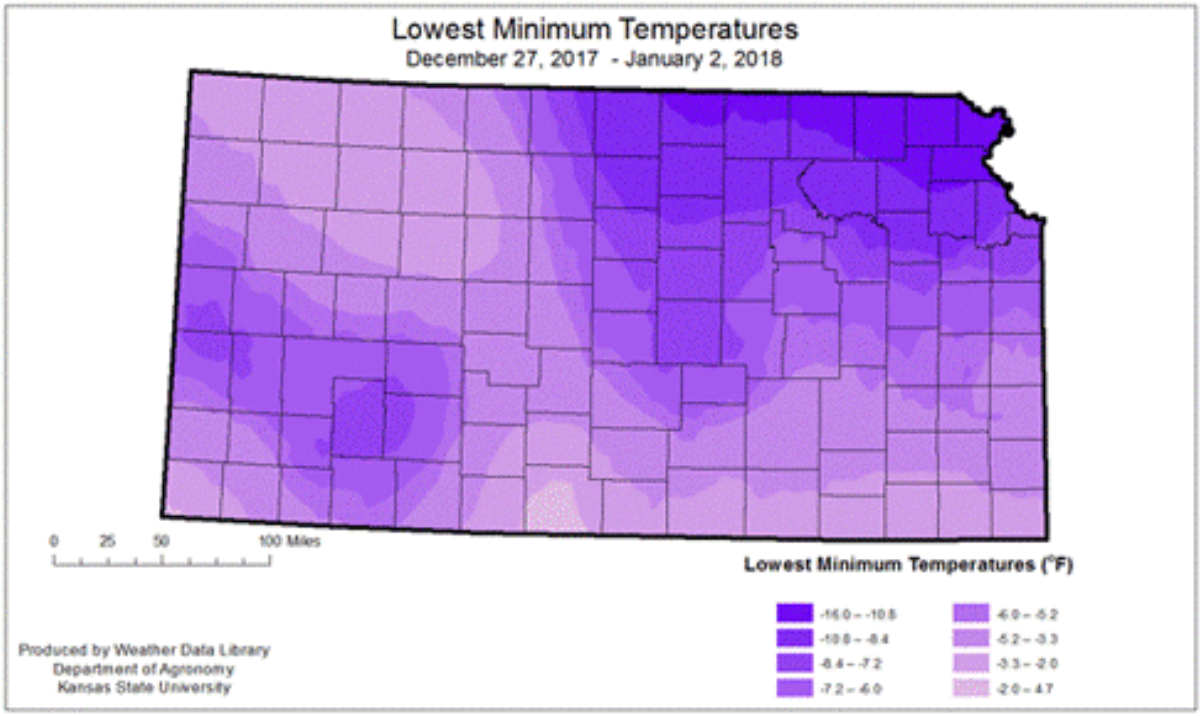
Wheat that has fewer tillers and leaves will be more susceptible to winter kill, which unfortunately is the situation for the majority of the Kansas wheat crop during the 2017-18 season. During the fall of

2017, wheat sowing was delayed for about 60-80% of the Kansas crop due to early October precipitation. Therefore, the crop is behind in development as compared to the historical average. Many fields in north central Kansas had sowing delayed even further as producers had to finish a summer crop harvest prior to sowing wheat. The crop likely did not have enough time to tiller during the fall (Figure 2).

Figure 2. Upper panels reflect early October sown field (left) and plant (right) and lower panels reflect a wheat field (left) and plant (right) sown in the last ten days of October. Photos by Guilherme Bavia, K-State Wheat and Forages Production Group.

How cold did it get?

January has brought two very cold spells, the first on January 1 (for more information, please click here), and the second during January 13 – 16th. Minimum air temperatures reached very low levels on January 1 across Kansas (temperatures as low as negative 16 degrees F recorded in the north central and northeast portions of the state, Figure 3 upper panel), whereas the coldest temperatures during the second cold spell were recorded in northwest and parts of southwest and north central Kansas (minimum temperatures ranging between negative 7 and 10 degrees F, Figure 3 lower panel).



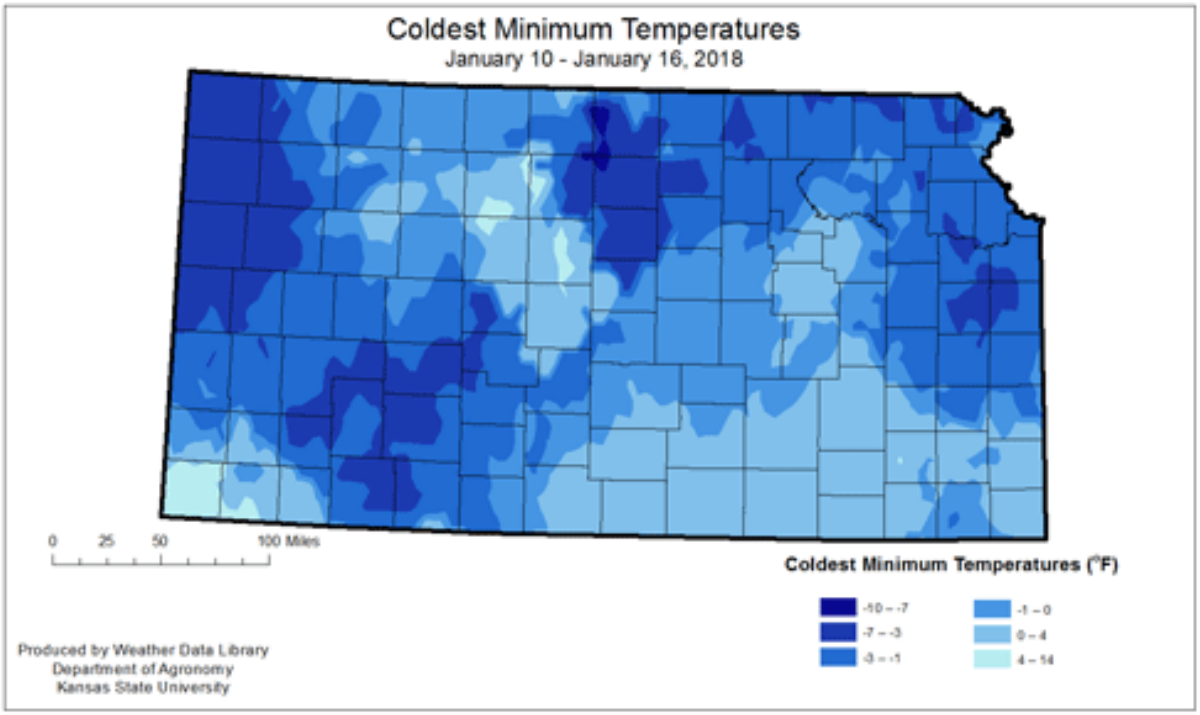
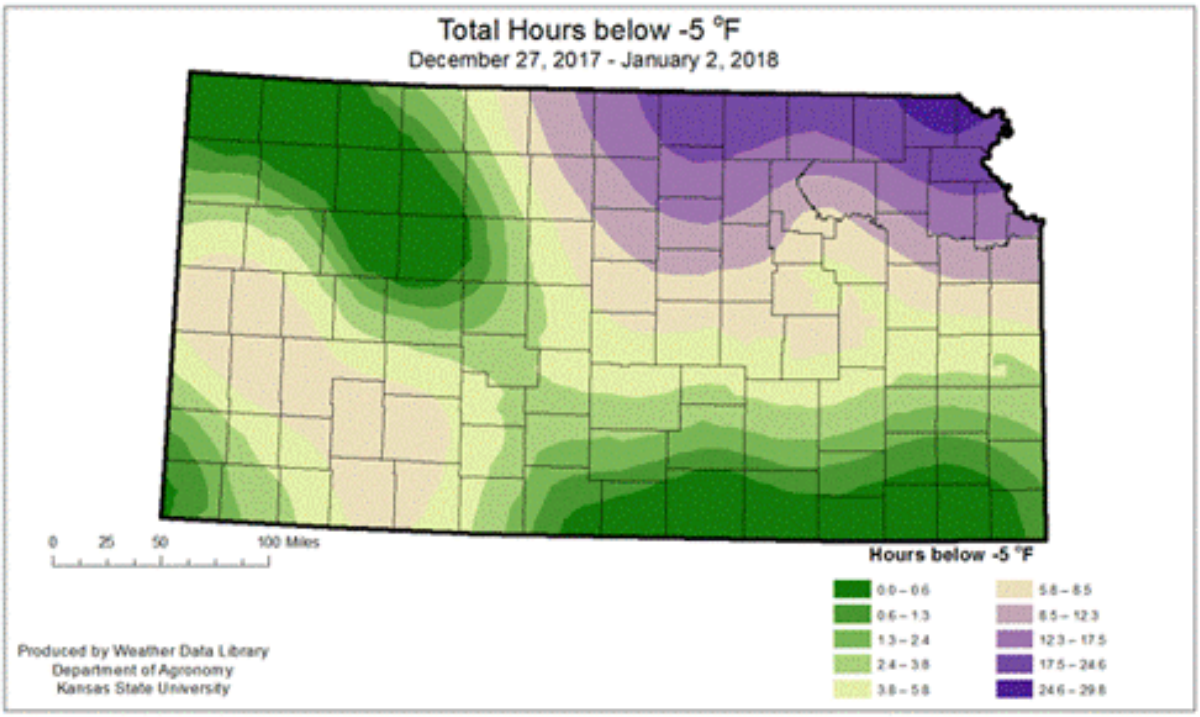


Figure 3. Lowest Minimum Air Temperatures measured during December 27, 2017 and January 2, 2018 (upper panel) and January 10 and 16, 2018 (lower panel).

How long were these cold temperatures sustained?

As mentioned earlier, the risk of freeze damage to wheat is a function of the minimum temperature and duration of time spent potentially damaging temperatures. During the week ending on January 2, 2018, the number of hours below negative 5 degrees F varied according to geographical location within Kansas (Figure 4 upper panel). The majority of the wheat growing region had anywhere between 4 to 24 hours below -5 degrees F, with counties in the north central and northeast portions recording as many as 30 hours below the threshold. For the January 10-16th period, a total of approximately 2 hours below negative 5 degrees F was measured in southwest Kansas, but it was not as widespread as the January 1st event.



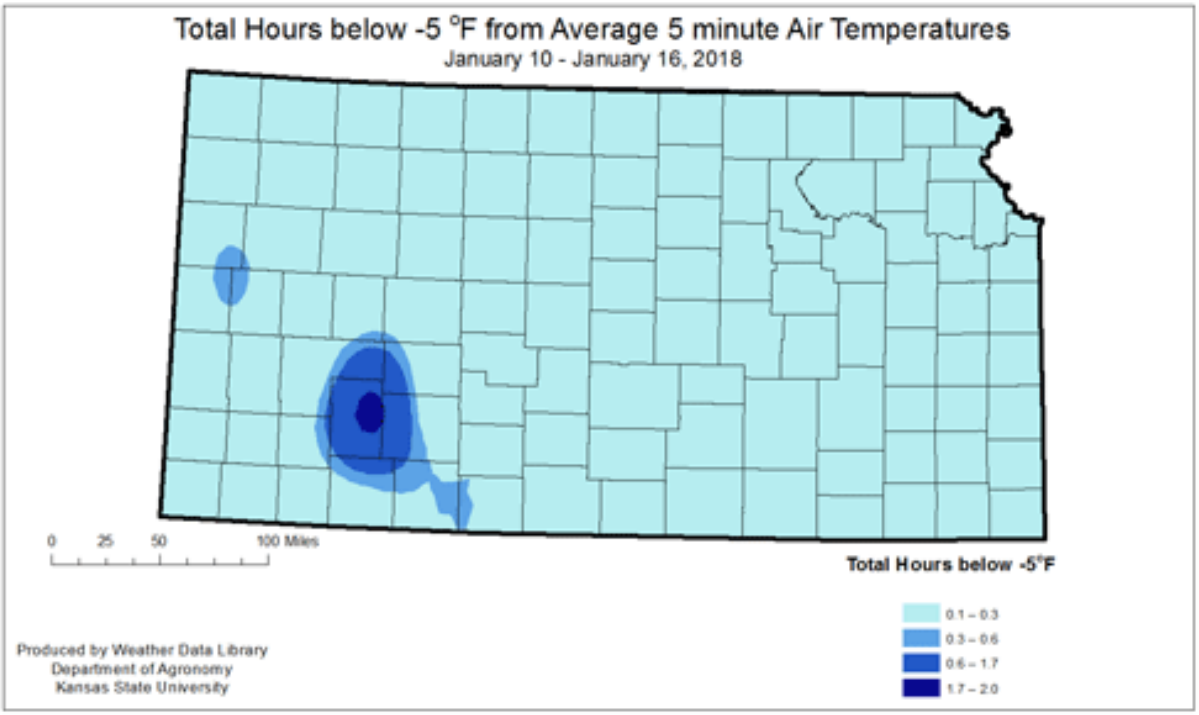


Figure 4. Total number of hours below -5 degrees F for the December 27, 2017 – January 2, 2018 period (upper panel) and January 10 – 16, 2018 period (lower panel).

Soil temperatures

As freeze damage potential is a result of many interacting variables, evaluating only air temperatures

may not completely reflect the conditions experienced by the wheat crop. Air temperatures might induce leaf damage, which might only be cosmetic. The wheat growing point at this developmental stage is located below ground, in the crown. Thus, damages to the crow are actually what might lead to winterkill. In this situation, soil temperatures can help determine the extent of the cold stress at crown level.

Ideally, temperatures at the crown level should be maintained above 10-15 degrees F, as temperatures below these thresholds can lead to damage to the crown. A timeline of air and 2-inch soil temperatures during December 20, 2017 – January 17, 2018 is shown for four selected Kansas locations in Figure 5. Air temperatures reached critical levels for foliar tissue damage and in the three selected locations during both cold spells (threshold being negative 5 degrees F). Meanwhile, soil temperatures at the 2-inch depth were sustained above 20 degrees F Garden City (southwest Kansas) and Hiawatha (northeast Kansas) the entire time period (Figure 5). However, in Scandia (north central Kansas), 2-inch soil temperatures reached single digits during both cold spells, especially the January 1st event. Therefore, for portions of the state where soil temperatures were sustained above single digits, they may have helped buffer the cold air temperatures and thus minimizing possible injury to the wheat crop. However, for north central Kansas, some winterkill might be expected. The effects of cold temperatures are worsened in this region due to this year's late-sowing induced by early-October precipitation and double cropping wheat after soybeans, a typical practice in the region.

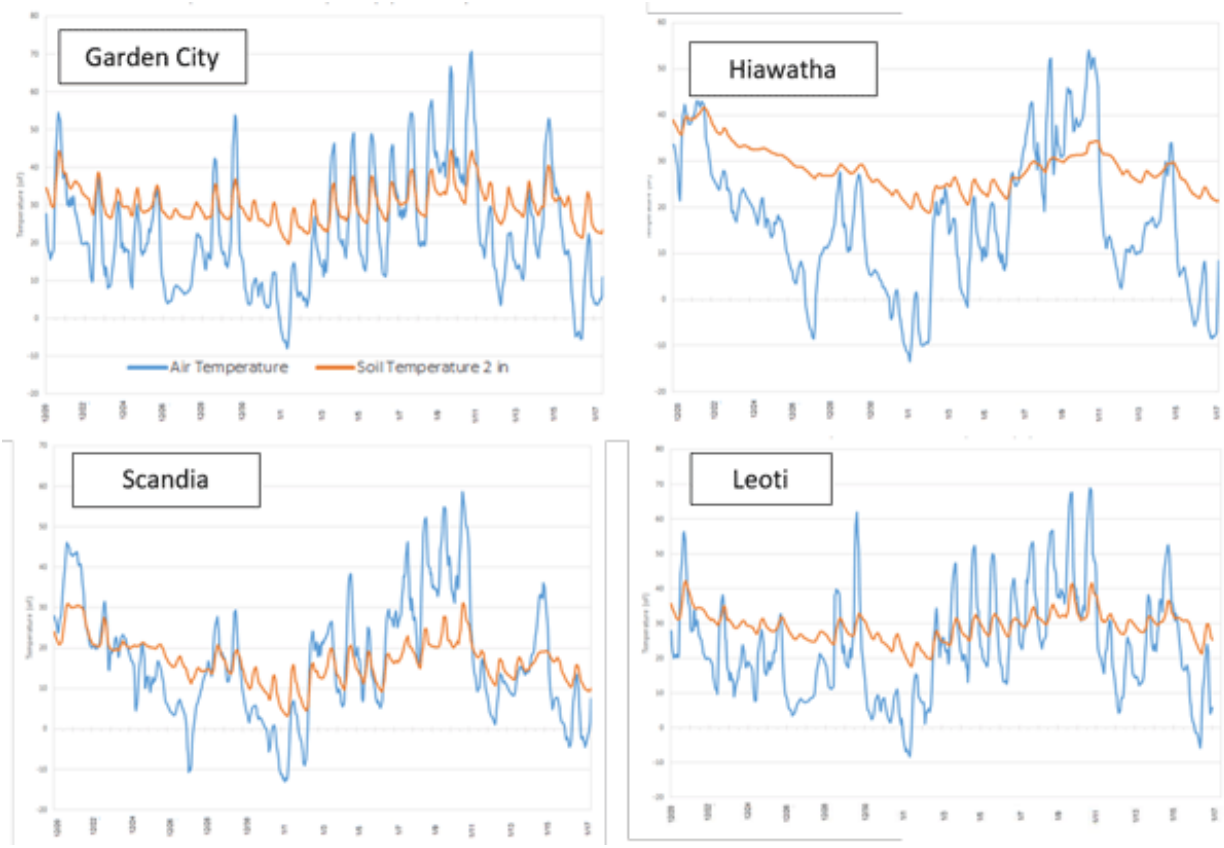


Figure 5. Air and 2-inch soil temperature timeline from December 20, 2017, to January 17, 2018 for four selected locations in Kansas. Graphs by Kansas Mesonet.

Soil moisture

Soil moisture directly affects the capacity of the soil to buffer temperature changes. A soil with a higher moisture content will require more energy to increase or decrease temperatures, thus, has a greater buffer capacity. A dry soil, on the other hand, will more easily result in temperature changes. The entire wheat growing region in Kansas is now under some level of drought stress, ranging from abnormally dry in north central and parts of northwest Kansas, to extreme drought conditions in portions of southwest Kansas (Figure 6). The dry conditions currently being experienced might enhance any potential cold damage resulting from the cold air and soil temperatures from the past two cold events.

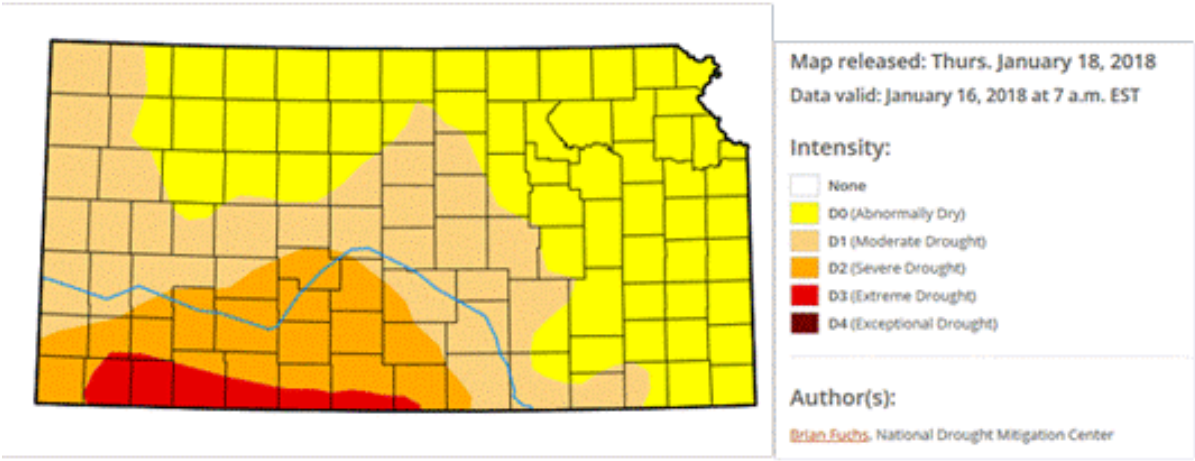


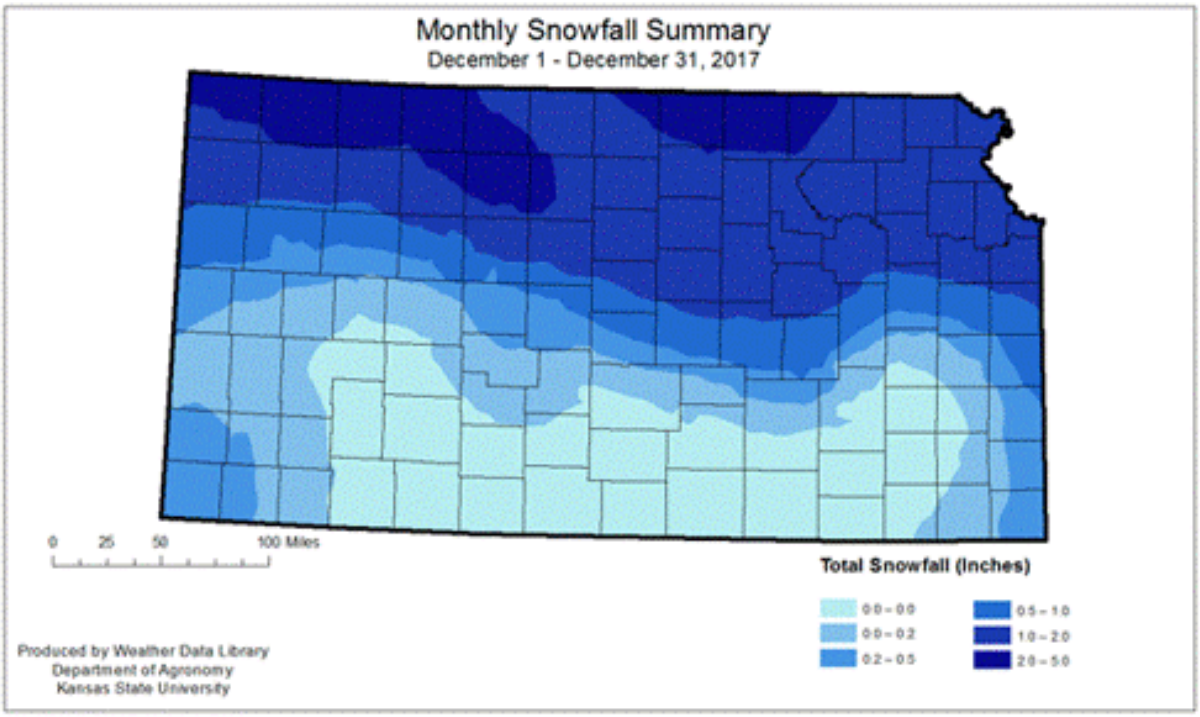
Figure 6. Kansas drought conditions as of January 16, 2018. Map developed by United States Drought Monitor (http://droughtmonitor.unl.edu**).**

Snow cover

Another factor affecting the potential for winterkill to the wheat crop is the amount of snow cover when low temperatures occurred. Snow can act as a buffer to cold air temperatures. If a minimum of 1-2 inches of snow is present on top of the wheat canopy, but preferably 2 or more, temperatures at the soil level should be sustained close to 32 degrees F and mitigate potential winterkill. However, if less snow is present or if windy conditions removed the snow from the wheat fields into field corners or ditches, the buffering effect might not occur.

Figure 7 shows the total snowfall accumulated prior to January 1st (upper panel) and prior to or during January 10-16th (lower panel). Anywhere from 0 to 5 inches of snow accumulated in Kansas prior to the first cold spell, with the largest amounts measured in parts of north central and northwest Kansas (Figure 7 upper panel). During the second cold spell, the majority of the state received some amount of measurable snowfall, ranging between 0 and 7.7 inches (Figure 7 lower panel). The largest measured amounts were recorded in northeast Kansas, but the wheat growing

region of the state received anywhere between 0 and 3.6 inches. Wheat fields that were covered by at least 1-2 inches of snow during the cold spell are likely safer than wheat fields that did not receive any snowfall.



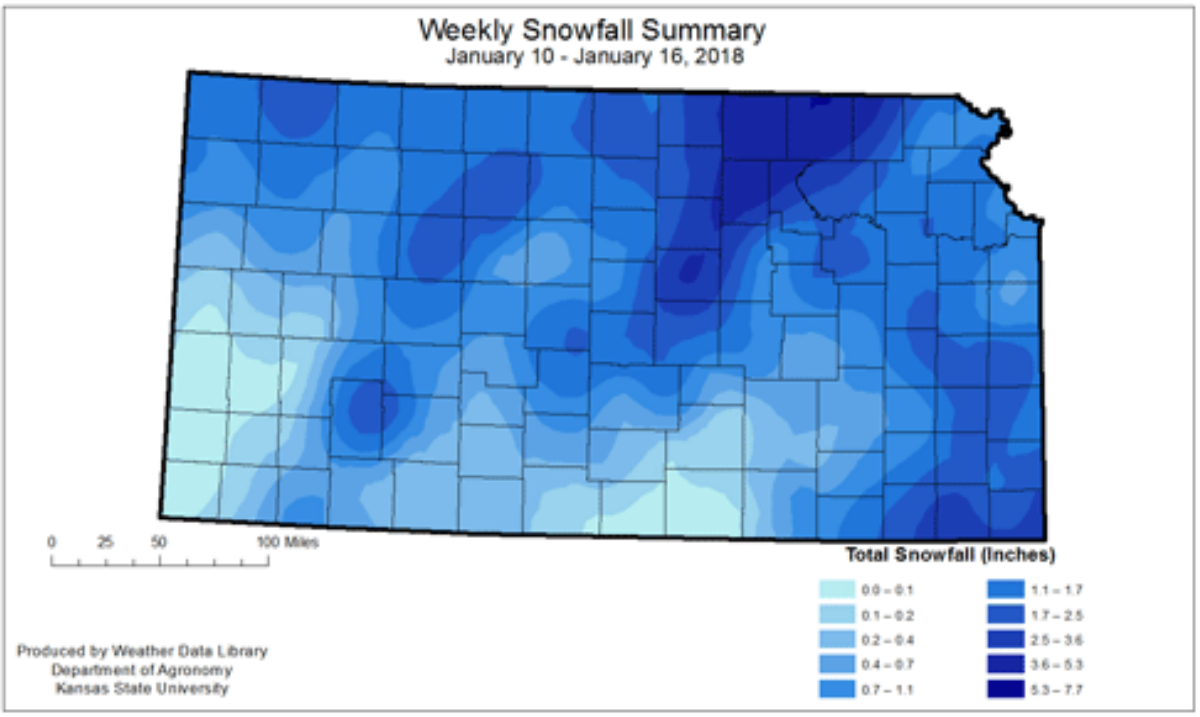


Figure 7. Monthly snowfall summary for December 2017 (upper panel, the majority of the measured snowfall occurred between December 24-26), and snowfall measured between January 10-16, 2018 (lower panel).

Summary

Air temperatures measured during January 1st were cold enough to harm the wheat crop in many parts of the state, especially north central Kansas where temperatures where sustained below negative 10 degrees F for up to 10 hours. Meanwhile, the cold spell that happened between January 10 and 16th did not produce as cold temperatures.

The effects of the cold temperatures could be magnified by dry soil conditions and poor fall development due to late sowing across the state; thus, the potential for winterkill exists, especially in north central Kansas where very cold temperatures were sustained for a long period of time. In this region, 2-inch soil temperatures reached single digits and might induce winterkill. However, for the remaining regions of the state, soil temperatures appear to have been maintained above single digits at 2-inch depth, which will help the crop withstand the winter.

Snow cover as much as 5 inches in the first cold spell, and up to 7.7 inches in the second cold spell, may also have helped winter wheat survival. Fields where there was no snow cover were more exposed and may have sustained greater levels of damage.

It is difficult to truly assess the extent of the damage at this point. Thus, producers should not take any immediate action. While foliage damage will be apparent a few days after the cold event, the first apparent sign of freeze injury being leaf dieback and senescence, symptoms of winterkill will only be apparent at spring greenup. This is when the crop starts to take up water and nutrients for spring growth. Damaged leaves will appear burned back and dead, but that is not a problem as long as newly emerging leaves in the spring are green. Provided that the crown is not damaged, the wheat will recover from this foliar damage in the spring with possibly little yield loss. If damage to the crown occurred, the crop will not greenup in the spring or will greenup for a short period of time using existing resources, and perish shortly after. In any case, we will only be able to assess the true extent of the damage at spring greenup.

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2. Kansas crop disease summary for 2017

Here is a summary of the most prevalent diseases in corn, soybeans, and grain sorghum in Kansas during the 2017 growing season.

Corn diseases

If one thing can be counted on in Kansas corn production, when it comes to diseases, every year is different. One trend that continues is that southern rust is arriving earlier each year. Historically, southern rust arrived in mid-July to early August, but in recent years, it has arrived in late June to mid-July. In years with late-planted fields, this disease can easily result in 10 – 30 percent yield losses if not treated with a fungicide. By the end of the year, southern rust could be found in nearly every corn field. However, fewer than 10 percent of the fields had levels severe enough and early enough to warrant spraying. Some fields that should have received treatment were not sprayed. This was due either to a lack of scouting or growers not wanting to increase production costs while corn prices remained low.

Figure 1. Southern rust of corn. Pustules typically form only on the upper leaf surface (panel A). Photo courtesy of the Crop Protection Network.

Gray leaf spot levels in 2017 were down from the two previous years, but closer to the long-term average. Only fields planted to more susceptible hybrids required a fungicide application.

Active scouting for corn bacterial streak, our most recently discovered foliar disease, resulted in 21 new counties testing positive for the disease, bringing the total number of known infested counties to 38 in Kansas. It remains to be determined if the disease significantly affects yield.

Figure 2. Corn bacterial streak. Photo courtesy of Dr. Tamra Jackson-Ziems, University of Nebraska – Lincoln.

While 2016 was a good year for Diplodia ear rot in the state, lack of rain at and shortly after pollination in 2017 resulted in a substantial reduction of this disease across the state, except for southwest Kansas where Diplodia levels were surprisingly high.

While Aspergillus ear rot, the cause of aflatoxin problems, was present at its highest levels since 2012, actual levels of aflatoxin were surprisingly low. The highest levels occurred early in harvest and then steadily decreased as harvest progressed. A second mycotoxin, fumonisin, associated with Fusarium ear rot, became an issue for growers in the Texas Panhandle. While found in some southwest Kansas cornfields, toxin levels were generally well below the 60 parts per million (ppm) advisory level set for ruminant animals.

Figure 3. The starburst pattern on kernels is diagnostic for Fusarium ear rot. Photo by Doug

Jardine, K-State Research and Extension.

Losses due to stalk rots were average in 2017. Fusarium stalk rot was by far the predominant disease found in grower fields, but charcoal rot, Diplodia stalk rot and anthracnose stalk rot were all reported at low levels around the state.

Sorghum diseases

The 2017 Kansas sorghum crop was generally healthy. Unlike 2016 when sooty stripe and rust could readily be found, foliar diseases were kept to a minimum. Gray leaf spot did cause some issues in at least one field in Cloud County.

Figure 4. Gray leaf spot of grain sorghum. Photo provided by Doug Jardine, K-State Research and Extension.

One interesting note is that sorghum downy mildew was reported in northwest Kansas, where unusually high rainfall amounts triggered the disease in a few fields with chronic wet spots.

The most significant sorghum disease in 2017 was Fusarium stalk rot. Fusarium is favored by wetter springs followed by a dry summer, and then more rain as harvest approaches. This scenario occurred in many places in the state. Late-season lodging due to Fusarium stalk rot was reported from many locations.

Soybean diseases

The most serious soybean disease problem in Kansas in 2017 was charcoal rot. This disease occurred primarily in southeast, east central, and northeast Kansas where little rain fell after mid-August.

Interestingly, the second most common disease problem in 2017 was Phytophthora root rot. Phytophthora is associated with wet soils and while it was dry late in the season, plenty of rain fell early resulting in the higher-than-normal levels of Phytophthora. The disease was most common in fields planted to susceptible varieties.

Figure 5. Stem browning caused by Phytophthora root rot. Photo courtesy of the University of Wisconsin.

The incidence of Sudden Death Syndrome continues to decline with the usage of ILeVO seed treatment and the planting of more tolerant varieties. While no new counties were recorded as being positive for soybean cyst nematode (SCN), numerous soil samples were received with egg numbers high enough to be causing economic losses. Growers should continue to soil test for SCN and rotate their varieties.

Other soybean diseases occurring in 2017 included frogeye leaf spot, Cercospora leaf blight/purple seed stain, Phomopsis pod and stem blight, anthracnose, and two virus diseases, soybean vein necrosis virus and tobacco ringspot virus. These diseases resulted in economic yield loss in a few isolated fields.

The 2018 growing season will be a new year with yet-to-be-determined disease issues. Weather, as usual, will determine which diseases thrive. Soybean growers are urged to continue to use planting time seed treatments and to select resistant/tolerant varieties in fields with a history of SCN, Sudden Death Syndrome, and Phytophthora root rot.

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3. Late-winter preplant applications for kochia control

Producers should begin soon in planning their program for controlling kochia. The spread of glyphosate-resistant kochia populations throughout western Kansas, and the difficulty growers have had controlling these populations, suggest that control measures should begin prior to emergence of kochia.

Major flushes of kochia emerge in late February to early March and into April. If allowed to emerge, postemergence herbicide applications often will not provide adequate control. Incomplete control of these dense populations (Figure 1a.) is likely in these situations. When the kochia is glyphosate-resistant and complete herbicide coverage is not possible, results can be very poor when trying to use postemergence products to control dense populations. The dense populations may also be stressed, which reduces the effectiveness of postemergence herbicide applications.

The choice of herbicides for effective preemergence control of kochia in February and early March will vary depending on subsequent cropping intentions. Various cropping scenarios are discussed below.

Note*: All graphs in this article are based on data from irrigated plots at the K-State Southwest Research-Extension Center at Tribune, and with populations of kochia that are susceptible to triazines. The kochia at this site is a mixed population of glyphosate-resistant and susceptible plants.*

Figure 1a. Untreated kochia seedlings amid residue. Photo by Curtis Thompson, K-State Research and Extension.

Figure 1b. Kochia and Russian thistle "tumbleweeds" in a corn stubble field. Tumbling plants have spread kochia and Russian thistle seed into what otherwise may have been a relatively clean field, making a pre-plant treatment advisable. Photo by Curtis Thompson, K-State Research and Extension.

Components of the herbicide program to effectively manage kochia at germination.

Each herbicide program needs to consist of two components. First, a very soluble and effective herbicide that can be incorporated with very little precipitation, i.e. dicamba. Second, an herbicide that has longer residual and requires perhaps 0.75 inches or more precipitation for adequate incorporation. During January or February, precipitation events often are on the light side with heavier precipitation events more common in the spring months. Dicamba may persist for 4 to 6 weeks and the longer residual herbicide will resume controlling kochia once incorporated and perhaps if dicamba residual runs out. Included below are herbicides by crop that have longer residual control.

The best timing for this application is January through the first week of March but prior to kochia emergence which can vary depending on weather conditions. The later into the season, the more likely it is there will be some small, emerged kochia, which increases the risk of control failure. If producers wait until later to apply the burndown and preemergence herbicide in the same application, the kochia will be larger and most likely will not be controlled.

Fields going to sorghum or corn

A combination of glyphosate (using a minimum of 0.75 lb ae per acre) with herbicides that have PRE and POST activity on kochia is most valuable. Tank mixing 8 to 16 oz of dicamba with 1 to 2 pints of atrazine will control existing broadleaf and grass weeds, and will provide extended preemergence control of kochia often into May as shown in Figures 2 and 3. An application of Clarity alone, shown in Figure 2, suggests that a pint provides better control than 8 oz. However, a combination of atrazine and Clarity is better than Clarity alone.

Corn only

Dicamba plus Corvus or Balance Flexx are good residual herbicides but should be mixed with a little atrazine. December applications have also been effective in managing kochia. Corvus+atrazine, Scoparia+atrazine, and Atrazine+Clarity were among the best treatments in the experiment shown in Figure 3B. Scoparia contains Isoxaflutole as does Corvus and Balance Flexx, however is not labeled ahead of corn planting. The 24c Special local need label for use of Scoparia to control kochia in fallow or ecofallow has a 4-month plant-back restriction to corn and a 6-month plant-back restriction to sorghum. Figure 3B and 3C also show treatments containing Sencor (metribuzin) or Zidua which both have activity on kochia and can be applied in December through February ahead of planting corn.

On fallow fields going to fall-planted wheat

Atrazine should not be used in this situation. Metribuzin (Sencor and multiple generics) is a triazine and can substitute for atrazine and has a 4-month plant-back restriction to wheat. Additional products include Scoparia, Authority MTZ, and other products containing sulfentrazone. Zidua also has good activity but requires significant rainfall thus applying Zidua with dicamba is critical (3b and 3c).

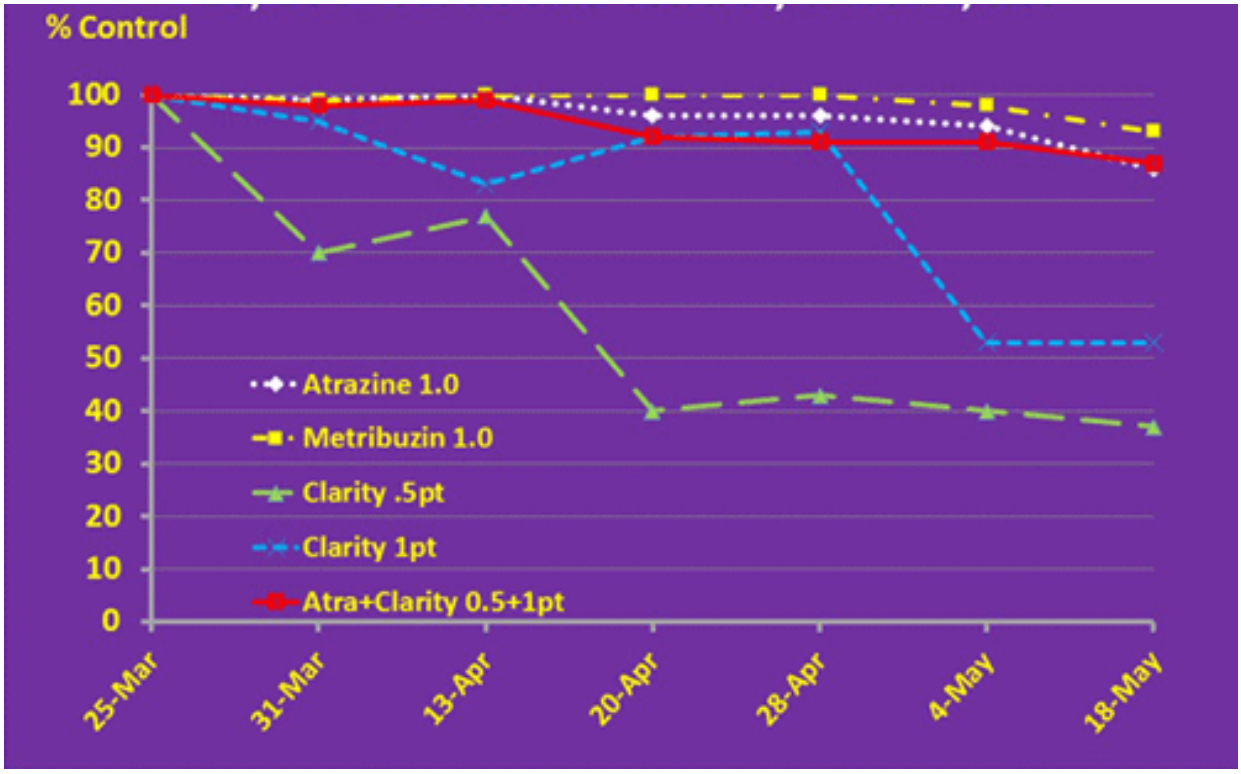

Figure 2. Early preplant herbicides applied March 16, 2012 for kochia control at Tribune, KS.

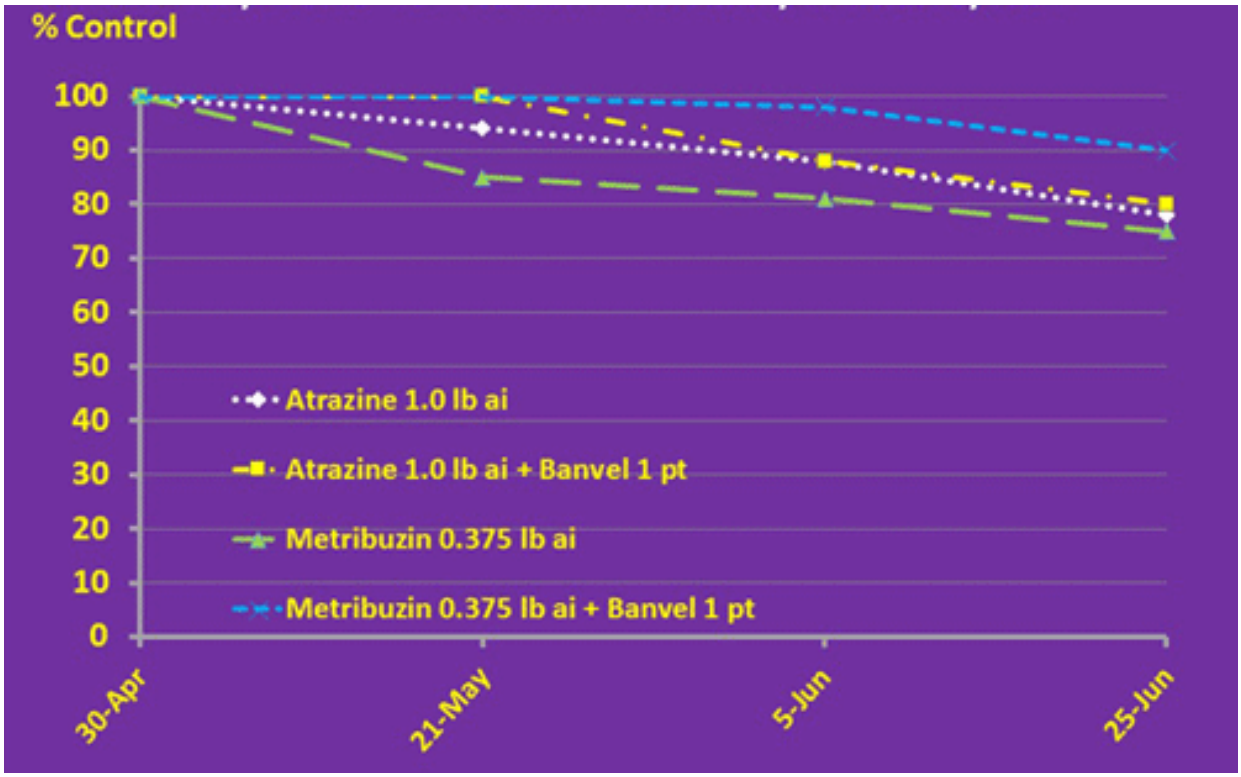

Figure 3. Early preplant herbicides applied March 15, 2013 for kochia control at Tribune, KS.

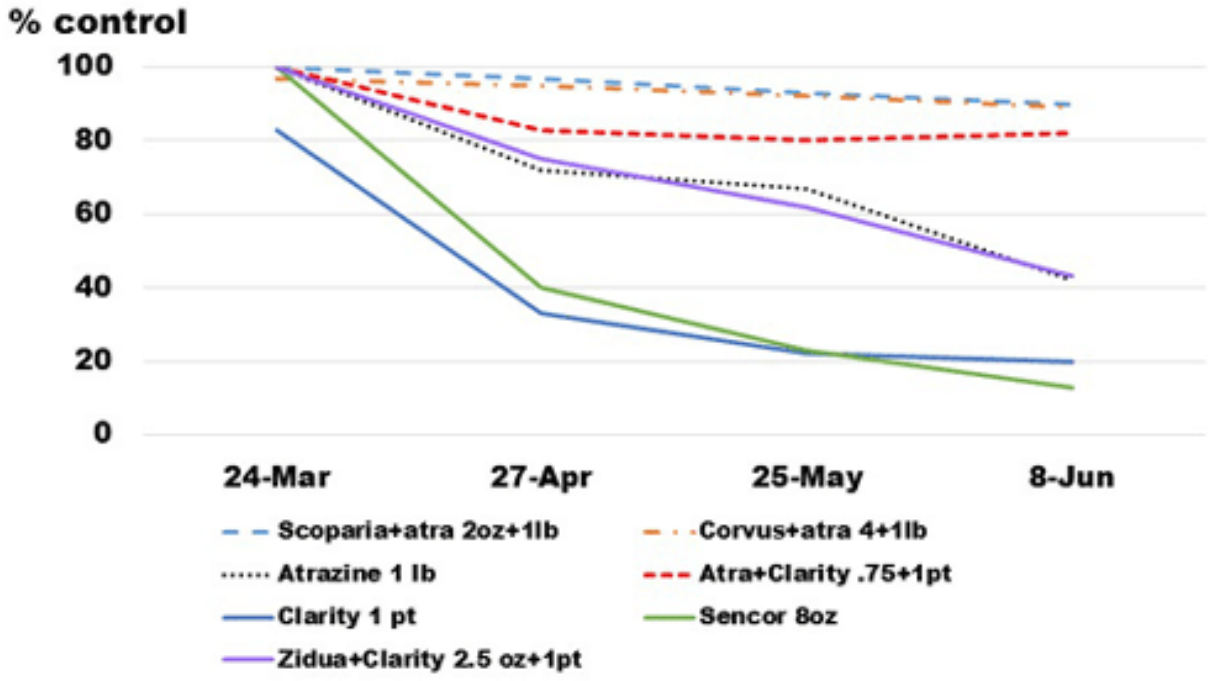

Figure 3b. December 20th applied herbicide treatments for kochia control at Tribune, KS during 2015-16.

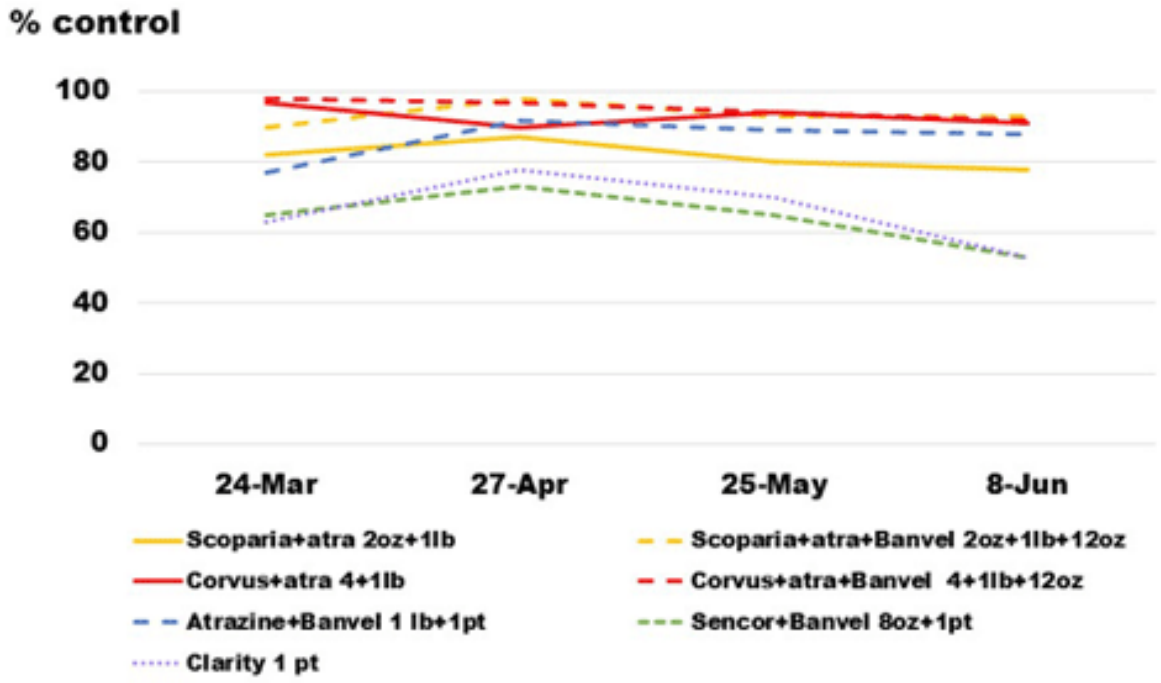

Figure 3c. February 15th applied herbicide treatments for kochia control at Tribune, KS in 2016.

If growers miss this kochia emergence window, note the photos of very small kochia on March 10 and March 20 of 2015 and the corresponding less-than-adequate control of the small emergence kochia shown in the figures (Figures 4, 5, 6, 7, and 8).

Figure 4. An application of herbicides was made to these kochia on March 10, 2015. Photo by Curtis Thompson, K-State Research and Extension.

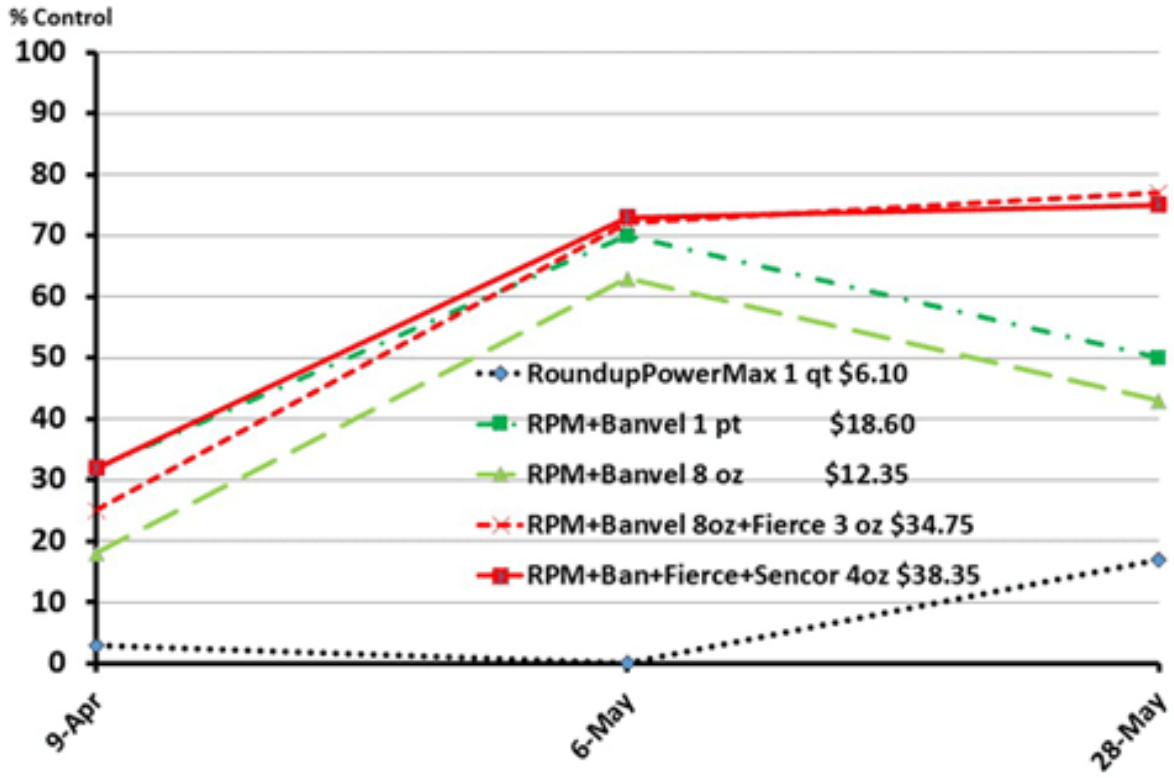

Figure 5. EPP/POST herbicides applied March 10, 2015 for kochia control at Tribune, KS. Kochia at cotyledon stage.

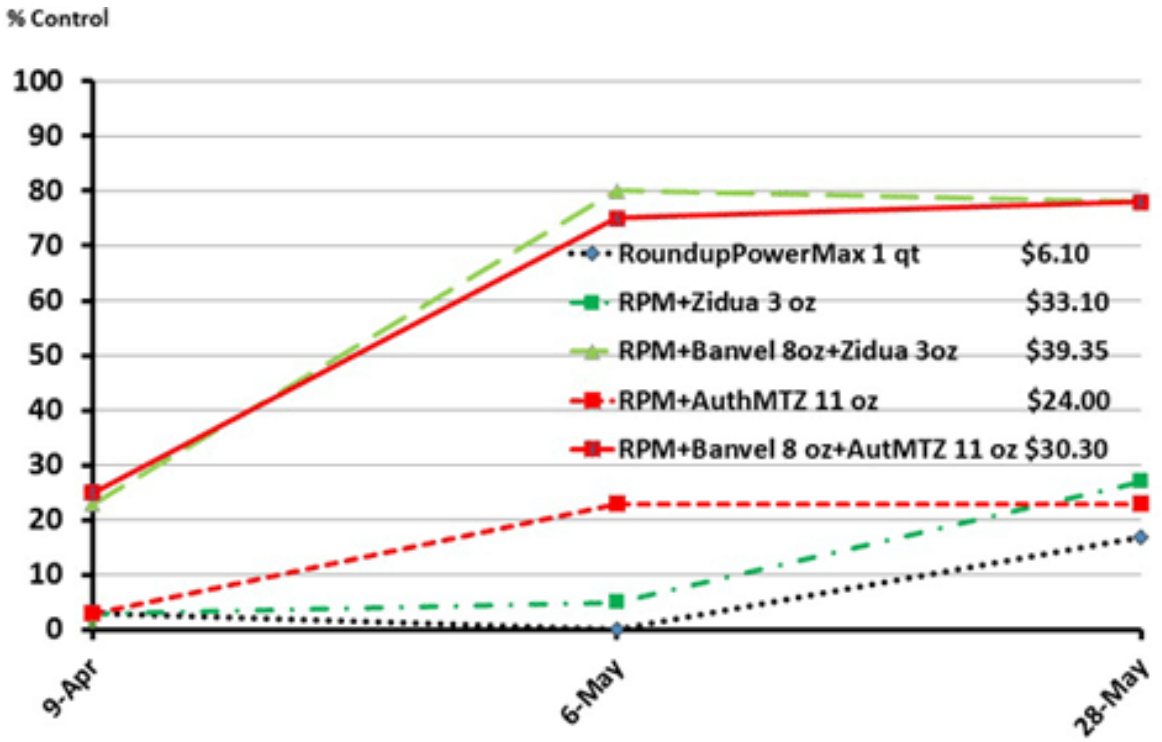

Figure 6. EPP/POST herbicides applied March 10, 2015 for kochia control at Tribune, KS. Kochia at cotyledon stage.

Figure 7. An application of herbicides was made to these kochia on March 20, 2015. Photo by Curtis Thompson, K-State Research and Extension.

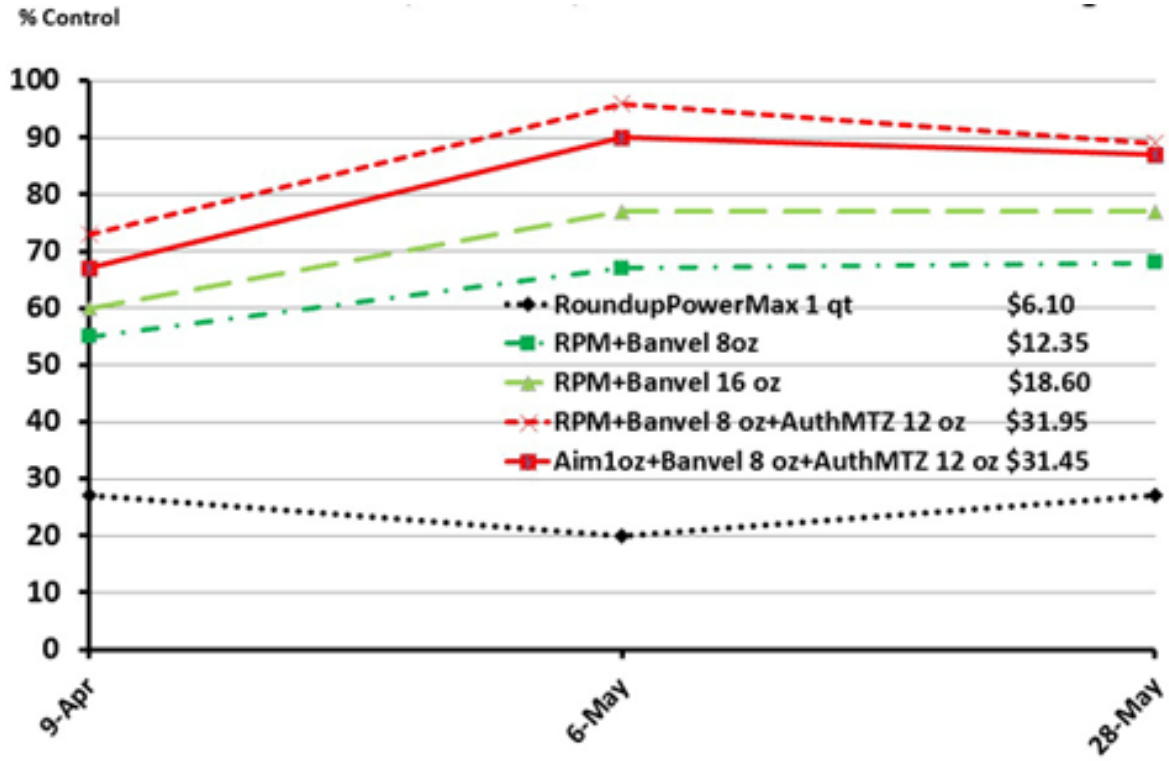

Figure 8. EPP/POST herbicides applied March 20, 2015 for kochia control at Tribune, KS. Kochia at fuzz-ball stage.

Fields going to sunflowers this spring

Planting sunflower into a clean seedbed is a key step to achieving good season-long control of all broadleaf and grassy weeds. But it is especially important for getting good control of any weed populations, such as kochia, that are resistant to glyphosate or ALS-inhibitor herbicides and cannot be controlled with POST applied herbicides in sunflower.

The best approach to kochia control in sunflower is to start in February/early March with a tankmix of glyphosate (using a minimum of 0.75 lb ae/are) and Spartan (sulfentrazone), Spartan Charge (sulfentrazone+Aim), or Broadaxe (sulfentrazone+Dual Magnum) or Sulfentrazone+Zidua before kochia begin to germinate. The sulfentrazone and Zidua will provide excellent preemergence control of kochia ahead of sunflower planting. Figure 9 indicates that 6 oz of Spartan controlled kochia very effectively in the Tribune experiments up to early June. It is very possible that as little as 4 oz could have done a similar job at the Tribune location because of the 7.8 pH and 1.8% organic matter soil. The label does not allow a March application of dicamba when intending to plant sunflower. Monitor fields closely as additional glyphosate or Gramoxone SL treatments maybe required prior to sunflower planting. Select preemergence products that are effective on kochia and apply at planting to extend control of kochia and other weeds.

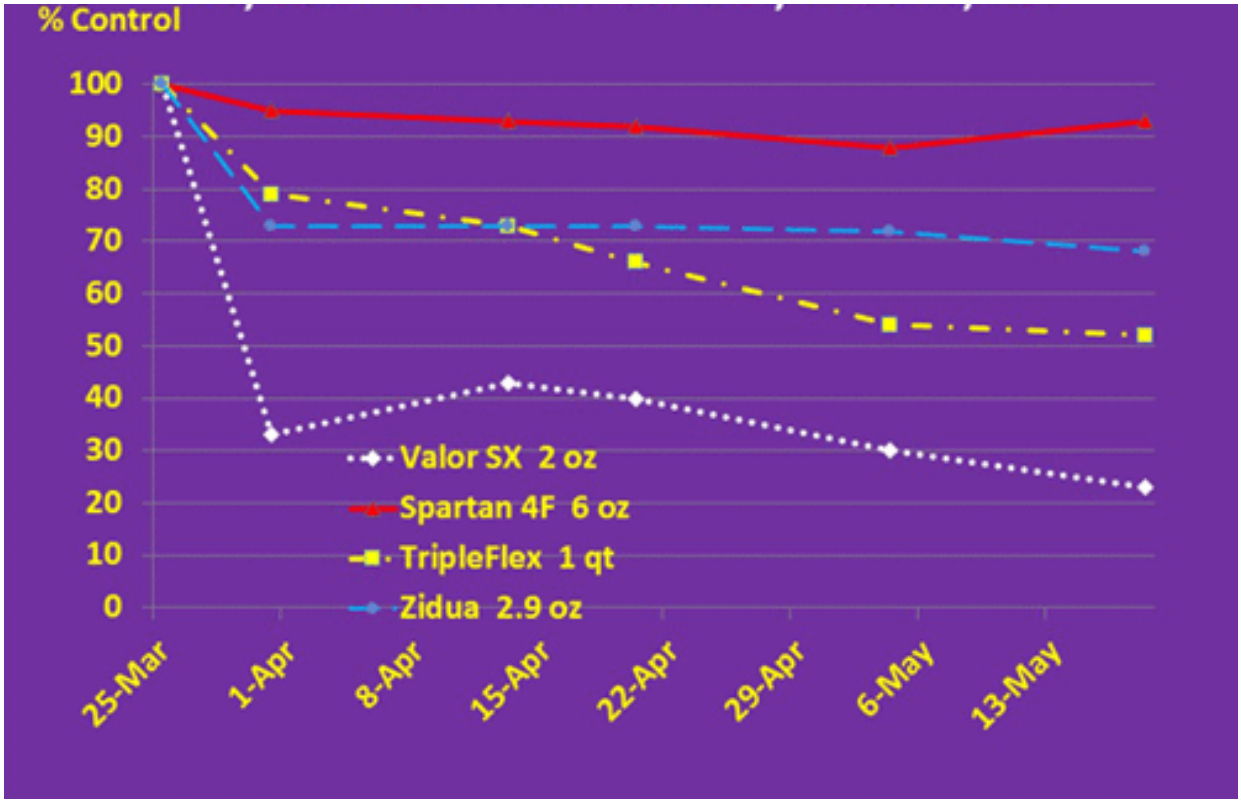

Figure 9. Early preplant herbicides applied March 16, 2012 for kochia control at Tribune, KS.

Fields going to soybeans this spring

The best management strategy for controlling kochia in soybeans is similar to the control strategy for sunflower, but there are more herbicide options for soybeans. Start in February or early March with a tankmix of glyphosate (using a minimum of 0.75 lb ae/acre) and 8 to 16 oz/acre of Clarity prior to kochia emergence. The use of Clarity requires a minimum accumulation of 1 inch of rain and then 28 days prior to planting soybeans. As indicated in the label, Clarity cannot be used as a preplant treatment in soybeans in areas with less than 25 inches of annual rainfall.

Gramoxone Inteon tankmixed with metribuzin (Dimetric, Metribuzin, Sencor and others) will provide extended residual control of kochia, as long as the population of kochia is susceptible to triazine herbicides.

Figure 2 shows the effectiveness of a full pound of metribuzin, which is not practical for western Kansas. Figure 3 shows the effectiveness of 3/8 lb of metribuzin alone or with dicamba which provided residual kochia control into May, especially when dicamba was added. Metribuzin can injure soybeans depending on soil texture, organic matter, and soil pH, so be sure to follow label guidelines regarding soil characteristics and guidelines regarding use rate on soybeans.

Authority-based herbicides that contain sulfentrazone could be considered for use prior to kochia emergence to manage an early flush of kochia. However, it's important to note the crop rotation restrictions on these products. The Valor-based products have not provided adequate control of

kochia (Figure 9). Other Authority-based products did provide excellent control of kochia well into June (Figure 10). Also, Zidua has activity on kochia. It appears that more rain is required for activation of Zidua; however, once activated, no additional kochia emerged. For adequate kochia control with Zidua, using maximum labels rates for your soil type would be recommended.

Fields going to wheat this fall

If kochia is emerging in row crop stubble intended to be planted to wheat this fall, herbicide options exist that provide residual kochia control. Atrazine cannot be used in this situation, as this treatment is off-label. The following herbicides could provide effective residual control of kochia for fields to be planted to wheat this fall: dicamba, metribuzin or Dimetric (Dimetric label indicates ½ to 2/3 of a pound), Corvus, Balance Flexx, Scoparia (equal to Balance Pro), and Lumax EZ. These products allow wheat to be planted 4 months following application. Effectiveness of some of these herbicide treatments is shown in Figures 2, 3, 10, and 11.

These treatments can be effective when made prior to kochia emergence. A November application of one pound of atrazine was effective through June 12. However, this treatment is labeled only if corn or sorghum will be planted the following year. The November application of Corvus was not adequate. The addition of metribuzin to Corvus would have improved kochia control. HPPD inhibitors should always be applied with a triazine. Only metribuzin, which is a triazine, can be applied in the late fall or early spring when wheat will be planted in the fall. February and March applications of Corvus and metribuzin were very similar and effective. This suggests that if weather cooperates and a window for application is available in February, getting these early treatments applied at that time could be beneficial.

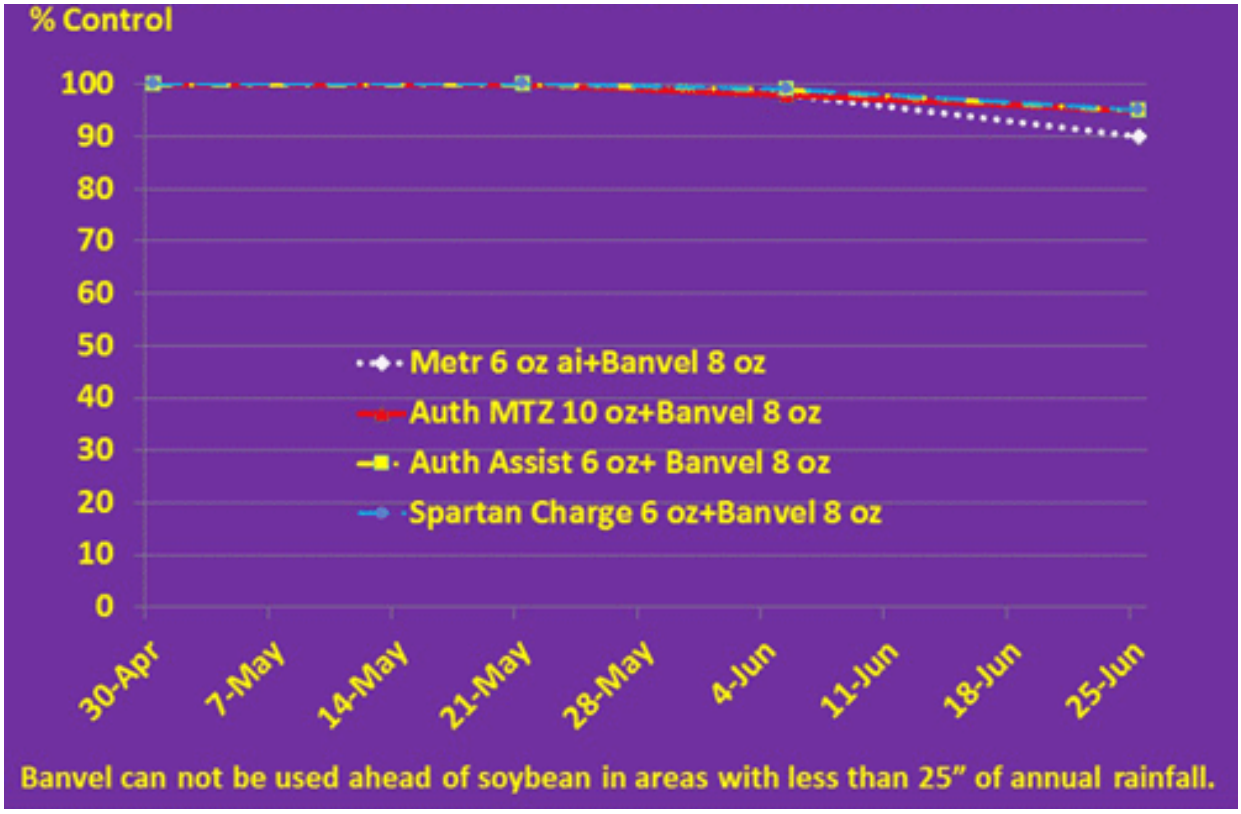

Figure 10. Early preplant herbicides applied March 15, 2013 for kochia control ahead of

soybean at Tribune, KS.

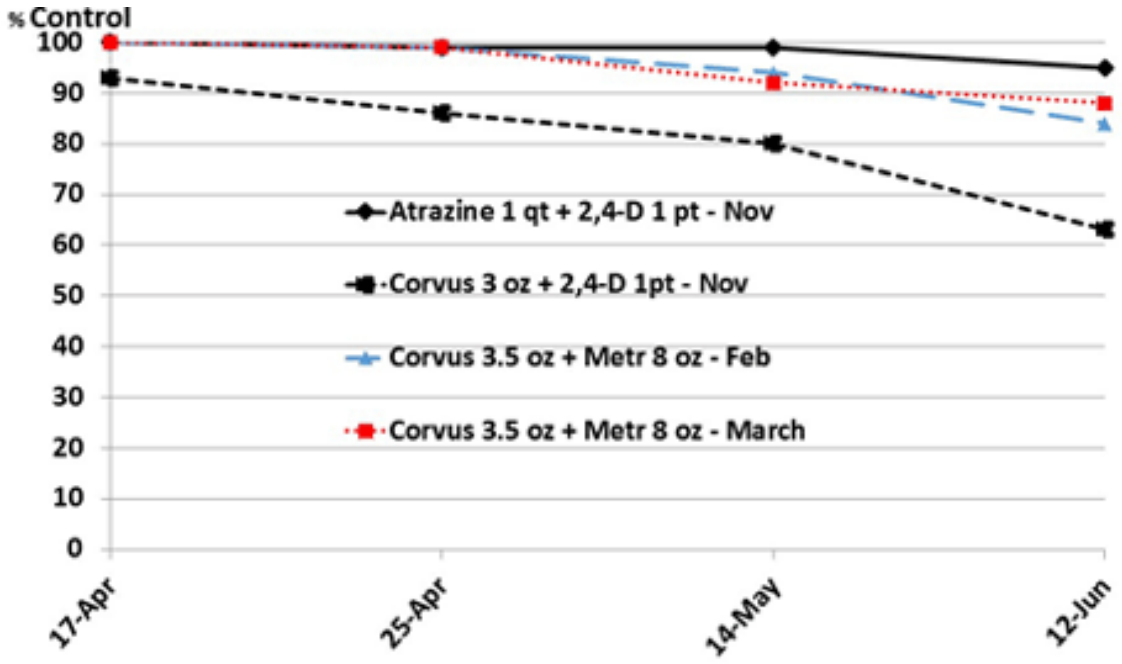

Figure 11. Herbicides applied November 30, 2013, and February 16 and March 15, 2014 for kochia control in fallow at Tribune, KS.

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4. Prescribed Burning workshops scheduled for 2018

Several Prescribed Burning workshops are currently scheduled for the remainder of the winter in Kansas, with the possibility of more upon request. The agencies involved include K-State Research and Extension, USDA-NRCS, USDA-FSA, Department of Wildlife, Parks, and Tourism, National Weather Service, and the Kansas Prescribed Fire Council.

Each workshop lasts about 4-5 hours and includes topics on reasons for burning, regulations, weather considerations, liability, burn contractors, equipment and crew, hazards, fuels, firebreaks, fire types and behavior, ignition techniques, and burn plans.

Contact Walt Fick at 785-532-7223 or whfick@ksu.edu if you would like to host a prescribed burning workshop.

Workshop	Date	Location	Host/Contact	Agency	Phone	e-mail
Stafford Co.	Jan. 23	Hudson	Glenn Newdigger	KPFC	620-549-3502	gnewdigg@ksu.edu
Clay Co.	Feb. 20	Clay Center	Benjamin Hanson	FSA	785-632-3550	ben.hanson@ks.usda.gov
Reno Co.	Feb. 21	South Hutchinson	Jess Crockford	KPFC	620-669-8161	Jess.crockford@ks.usda.gov
Dickinson Co.	Feb. 26	Woodbine	James Coover	KSRE	785-263-2001	jcoover@ksu.edu
Saline Co.	Feb. 28	Salina	Tom Maxwell	KSRE	785-309-5850	tmaxwell@ksu.edu
Rooks Co.	Mar. 8	Stockton	Dorothy Heim	FSA	785-425-6302	dorothy.heim@ks.usda.gov

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5. Training required for application of dicamba herbicides

*There was an error in the wind speed restrictions in the January 12th eUpdate issue. This has been corrected in this issue.

As we embark on the 2018 growing season, producers should be aware that dicamba herbicides Engenia, FeXapan, and XtendiMax have been reclassified as Restricted Use Pesticides (RUPs). In order to purchase and apply these herbicides, you must be certified as a private or 1A (Agriculture Plant) commercial pesticide applicator. In addition, anyone planning to apply these herbicides this coming season will be required to attend dicamba or auxin specific applicator training. In Kansas, these trainings will be sponsored by K-State Research and Extension, as well as industry representatives from BASF, Dow/Dupont, and Monsanto. It will be the responsibility of the applicators to obtain this training before the application of these herbicides.

The purpose of these trainings is to cover the label changes and application requirements in detail and provide information on what you, as an applicator, need to do to meet these requirements. The labels for these herbicides include mandatory record keeping requirements, modified wind speed restrictions (3 to 10 miles per hour only), limited times of day that applications can be made (between sunrise and sunset), a revised list of sensitive crops and sensitive sites, buffer zone requirements, and revised sprayer cleaning procedures and documentation.

The dates and locations for K-State Research and Extension sponsored trainings will be posted on the KSU-IPM website at the website listed below. Once there, click on the 2018 Dicamba Training link at the bottom of the page.

https://www.ksre.k-state.edu/pesticides-ipm/private-applicator.html

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6. Western Kansas Forage Conference, February 21 in Garden City

Kansas State University Research and Extension and the Kansas Forage and Grassland Council (KSFGC) in collaboration with a number of private forage industry supporters will be hosting the Southwest Kansas Forage Conference on February 21, 2018 at the Southwest Research-Extension Center in Garden City from 9:00 am-3:30 pm. The Southwest Research-Extension Center is located at 4500 E Mary Street, Garden City, KS, 67846.

Topics to be covered include:

- Impact of climate variability on western Kansas agriculture
- Nutritional value of forage sorghum
- Triticale forage production and variety selection
- Trucking and forage transportation rules and regulations
- Getting the most out of your silage
- Silage safety

This conference provides a platform to keep producers up-to-day on new research and technology development in the forage arena. Producers should consider this conference as an opportunity to refresh basic principles and to learn new principles that they can apply to their own situation.

Conference registration is $25 per individual, and for an additional $25 a farmer or rancher can support and gain the benefits of becoming a KSFGC member.

Online Conference Registration is available at https://ksfgc.org/wkfc/. The registration link can also be found at http://www.southwest.k-state.edu/. Advanced registration required by February 9, 2018.

Continuing Education credits have been applied for and should be available.

Please direct any questions to Mark Nelson at info@ksfgc.org

2018 WESTERN KANSAS FORAGE CONFERENCE

FEBRUARY 21, 2018

SOUTHWEST RESEARCH-EXTENSION CENTER
4500 E Mary Street,
Garden City, KS 67846
9:00 A.M.—3:30 P.M. (CST)

Topics to be covered include:

- Impact of climate variability on western Kansas agriculture
- Nutritional value of forage sorghum in silage feed production
- Triticale forage production, variety selection and future outlook
- Dairy Farmers of American Garden City Plant Update
- Trucking Laws
- Getting the most of your silage
- Silage safety

Online Conference Registration: https://ksfgc.org/wkfc/
Registration Link also @: http://www.southwest.k-state.edu/

Signup to Become Membership Online for an additional $25.00 @ https://form.jotform.com/72816740441960

Presented by:
K-State Research & Extension
Kansas Forage and Grassland Council

K-STATE Research and Extension

KSFGC

Registration Fee - $25.00

For an *additional* $25.00 become a KSFGC member and gain massive benefits.

Advanced registration is required by February 9 2018

(CEUs applied for and should be available at this meeting)

7. Register by January 31 for the K-State Sorghum Schools in early February

A series of three K-State Sorghum Production Schools will be offered in early February 2018 to provide in-depth training targeted for sorghum producers and key stakeholders. The schools will be held at three locations around the state.

The one-day schools will cover a number of issues facing sorghum growers: weed control strategies; production practices; nutrient fertility; and insect and disease management.

The dates and locations of the K-State Sorghum Production Schools are:

- **February 6** – Dodge City - Boot Hill Casino Conference Ctr., 4100 W Comanche St
  Andrea Burns, Ford County, aburns@ksu.edu, 620-227-4542
- **February 7** – Hutchinson – Hutchinson Community College, 1300 N Plum St
  Darren Busick, Reno County, darrenbusick@ksu.edu, 620-662-2371
- **February 8** – Washington – FNB Washington 101 C Street, Box 215
  Tyler Husa, River Valley District, thusa@ksu.edu, 785-243-8185

Lunch will be provided courtesy of Kansas Grain Sorghum Commission. There is no cost to attend, but participants are asked to pre-register by January 31.

Online registration is available at: http://bit.ly/KSSORGHUMSchools

You can also pre-register by emailing or calling the nearest local K-State Research and Extension office for the location you plan to attend.

More information on the final program for each Sorghum School will be provided in upcoming issues

of the Agronomy eUpdate.

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Pat Damman, Kansas Grain Sorghum Commission
pat@ksgrainsorghum.org

8. K-State Soybean Schools offered in late January

A series of three K-State Soybean Production Schools will be offered in late January 2018 to provide in-depth training targeted for soybean producers and key stakeholders. The schools will be held at three locations around the state.

The one-day schools will cover a number of issues facing soybean growers including: weed control strategies, production practices, nutrient fertility, and insect and disease management. Attendees will also receive auxin training needed for applications of approved dicamba formulations for Xtend soybean and cotton.

The dates and locations of the K-State Soybean Production Schools are:

January 22 – Phillipsburg, KS ***Start time for this location only will be 10:00 a.m.***

Phillips County Fair Building, 1481 US-183
Cody Miller, Phillips-Rooks District, codym@ksu.edu, 785-543-6845

January 23 – Salina, KS (program begins at 9:00 a.m.)

Webster Conference Center, 2601 North Ohio
Tom Maxwell, Central Kansas District, tmaxwell@ksu.edu, 785-309-5850

January 24 – Rossville, KS (program begins at 9:00 a.m.)

Citizen Potawatomi Nation Center, 806 Nishnabe Trail
Leroy Russell, Shawnee Co., lrussell@ksu.edu, 785-232-0062

Lunch will be provided courtesy of Kansas Soybean Commission (main sponsor of the schools). The schools will also be supported by Channel Seeds. There is no cost to attend, however participants are asked to pre-register by January 17.

Online registration is available at: K-State Soybean Schools

You can also preregister by emailing or calling the local K-State Research and Extension office for the location you plan to attend.

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