Issue 821

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eUpdate

10/02/2020

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, Agronomy eUpdate Editor. All of the Research and Extension faculty in Agronomy will be involved as sources from time to time. If you have any questions or suggestions for topics you'd like to have us address in this weekly update, contact Kathy Gehl, 785-532-3354 kgehl@ksu.edu, or Dalas Peterson, Extension Agronomy State Leader and Weed Management Specialist 785-532-0405 dpeterso@ksu.edu.

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eUpdate Table of Contents | 10/02/2020 | Issue 821

1. Considerations when planting wheat into dry soil

Soils in portions of western and central Kansas have become steadily drier through the late summer and early fall. Topsoil conditions are now very dry in many areas of Kansas (Figure 1). For wheat yet to be planted in these areas, producers are left with a few options.

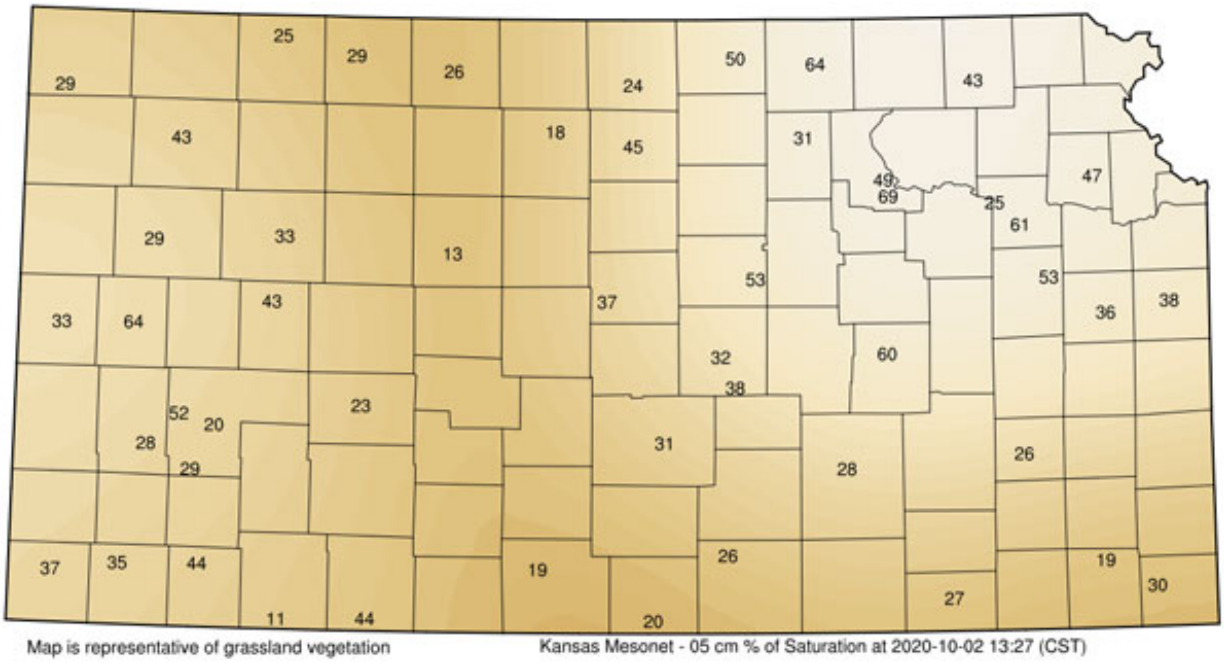

Figure 1. Topsoil moisture conditions at 2 inches (5 cm) reported as % saturation on October 2, 2020. Map by Kansas Mesonet.

Option 1: "Dust in" the wheat

Producers can choose to "dust in" the wheat at the normal seeding depth and normal planting date, and hope for rain (Figure 2). Some farmers may consider planting it shallower than normal, but this could increase the potential for winterkill or freeze damage. Planting the wheat crop at the normal depth and hoping for rain is probably the best option where soils are very dry. The seed will remain viable in the soil until it gets enough moisture.

Figure 2. Wheat dusted in near Belleville in October 2015. Photo by Romulo Lollato, K-State Research and Extension.

Before planting, producers should look at the long-term forecast and try to estimate how long the dry conditions will persist. Current short term (8 to 14-day) and long-term outlooks favor drier than normal conditions through the end of October across most of Kansas (Figure 3).

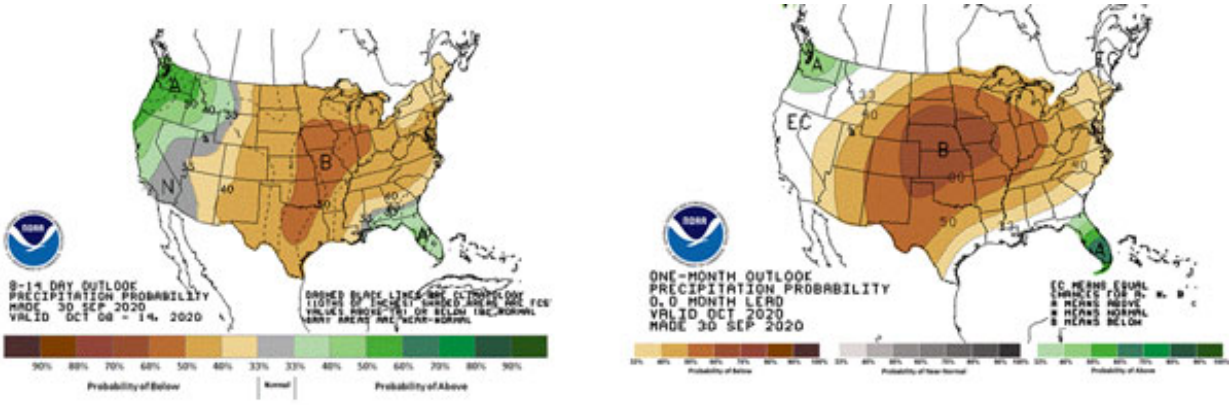

Figure 3. Precipitation outlooks as of September 30, 2020 for Kansas.

If it looks like there's a good chance the dry weather will continue until at least the back end of the

optimum range of planting dates, producers should treat the fields as if they were planting later than the optimum time, as the emergence date will be delayed. Rather than cutting back on seeding rates and fertilizer to save money on a lost cause, producers should increase seeding rates, consider using a fungicide seed treatment, and consider using a starter phosphorus fertilizer to improve early season development. However, producers should be cautious with in-furrow nitrogen or potassium fertilizers as these are salts and can make it more difficult for the seed/seedling to absorb water needed for germination. The idea is to make sure the wheat gets off to a good start and will have enough heads to have good yield potential, assuming it will eventually rain and the crop will emerge late. Wheat that emerges in October may still hold full yield potential, but wheat that emerges in November almost always has fewer fall tillers and therefore can have decreased yield potential.

There are some risks to this option. First, a hard rain could crust over the soil or wash soil off planting ridges and into the seed furrows, potentially causing emergence problems. Another risk is the potential for wind erosion if the field lies unprotected with no ridges. Also, the wheat may not come up until spring, in which case it may have been better not to plant the wheat at all and plant a spring crop instead. In fact, not planting wheat and allowing soil moisture to build for a summer crop planted next spring is an option.

Probably the worst-case scenario for wheat planted into dry soils would be if a light rain occurs and the seed gets just enough moisture to germinate but not enough for the seedlings to emerge through the soil or to survive very long if dry conditions return. Once the coleoptile extends to the soil surface, the plant must have enough moisture to continue growth otherwise it will perish. This situation may be worsened if producers are planting wheat following a summer crop such as corn, soybean, or sorghum, which depleted subsoil moisture through late summer. Without subsoil moisture to sustain growth, there can be a complete loss of the wheat stand. If late October brings cooler temperatures, dusting wheat in becomes a more interesting option as soil moisture from a possible rainfall event could be stretched further.

Option 2: Plant deeper than usual into moisture with hoe drill

Planting deeper than usual with a hoe drill can work if the variety to be planted has a long coleoptile, the producer is using a hoe drill, and there is good soil moisture within reach. The advantage of this option is that the crop should come up and make a stand during the optimum time in the fall. This would keep the soil from blowing. Also, the ridges created by hoe drills also help keep the soil from blowing.

The main risk of this option is poor emergence. Deep-planted wheat normally has below-normal emergence, so a higher seeding rate should be used. Any rain that occurs before the seedlings have emerged could add additional soil into the seed furrow, making it even harder for the coleoptile to reach the soil surface. Any time you increase the seeding depth, the seedling will have to stay within the soil just that much longer before emerging through the soil surface.

Delayed emergence leads to more potential for disease and pest problems. Additionally, deep-planted wheat generally results in reduced tillering and consequently a reduced number of heads, which directly reduces the yield potential of the crop. It's even possible that the wheat would get planted so deep that it would germinate but never emerge at all, especially if the coleoptile length is too short for the depth of planting. Generally speaking, it's best to plant no deeper than 3 inches with most varieties. It is also important to keep in mind that ridges formed by narrow press wheels can make the effective planting depth much deeper if the seed furrows fill in during a heavy rainfall

event.

Option 3. Wait for rain before planting

To overcome the risk of crusting or stand failure, producers may decide to wait until it has rained and soil moisture conditions are adequate before planting. Under the right conditions, this would result in good stands, assuming the producer uses a high seeding rate and a starter fertilizer, if appropriate. If it remains dry well past the optimum range of planting dates, the producer would then have the option of just keeping the wheat seed in the shed until next fall and planting spring crop next year instead.

The risk of this option is that the weather may turn rainy and stay wet later this fall, preventing the producer from planting the wheat at all while those who dusted their wheat in have a good stand. There is also the risk of leaving the soil unprotected from the wind through the winter until the spring crop is planted.

Crop insurance considerations and deadlines will play a role in these decisions. Another consideration is to delay the bulk of nitrogen application until topdress time in the spring, as wheat does not require much nitrogen in the fall. This would defer expenses until an acceptable wheat stand is assured.

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2. Small grain forage options for this fall

Small grain forages can be a profitable option for producers. They can be planted in the fall and either terminated or grazed out in the early spring, allowing time to plant a summer row crop if soil moisture is adequate.

There are five common small grain options for forage: spring oats, winter wheat, winter barley, winter cereal rye, and winter triticale. Each option has strengths and weaknesses.

Spring oats. Spring oats are usually planted in late February or March in Kansas. However, spring oats can also be planted in August or early September -- and if done so, they will produce much more fall forage compared to other small grain forages in the fall before a killing freeze. They will almost never produce grain if planted in August. Spring oats do not need to vernalize before heading. They will develop rapidly in the fall if they have enough moisture and fertility, and may even head out before termination by the first hard freeze in the mid-20 degree F range, but in most years it will not have time to produce viable grain. In very mild winters, however, much of the spring oats planted in the fall might survive the winter in southern Kansas.

Spring oats can be utilized in the fall for either hay or grazing. Spring oats can be ready to graze 6 to 8 weeks after planting with adequate moisture and after a good crown root system has developed. Under good conditions, spring oats can produce up to 1 to 2 tons of forage per acre, but as planting is delayed past early August, expect less tonnage. Spring oats are not very drought-tolerant, and will not establish well or produce much forage if soils are very dry. Rye, triticale, or barley are more drought-tolerant than spring oats.

Spring oats can also be planted in a mixture with a winter small grain. The spring oat will produce most of the forage in the fall and then most likely winter kill. If the winter climate is mild, the spring crop can survive the winter. The winter small grain will overwinter and produce forage in the spring. Winter small grain biomass production might be less than if planted alone, but the combination of oat and winter small grain biomass will most likely be higher than winter small grain planted alone. If a mixture is used, plant oats at a 50% seeding rate and winter small grain at 100% seeding rate.

Spring oats should be seeded at the rate of 2 to 3 bushels (64 to 96 pounds) per acre. About 30 to 70 pounds of nitrogen (N) per acre will be adequate depending on forage potential and if no excess N is available in the soil.

Oat pasture can generally carry 500 pounds of beef per acre. Average daily gains range from 1.5 to 2.5 pounds per head per day. Forage quality on actively growing oats is high, with protein content in the range of 20 to 25%.

Oats are fairly susceptible to atrazine, so if producers plan on planting oats this fall after corn or sorghum, there is risk of herbicide carryover that can kill seedlings.

Winter wheat. Wheat is often used for grazing and grain in so-called “dual-purpose” systems (Figure 1). These systems are usually balanced between getting good forage and good grain yields without maximizing yields on either side. Dual-purpose wheat is typically planted at least two to three weeks earlier than wheat planted for grain only, which can increase the risk of a wheat streak mosaic infection. In addition, producers wanting both grazing and grain should use a higher-than-normal

seeding rate (90-120 pounds of seed per acre) and increase the N rate by 30 pounds per acre for every 1,000 pounds per acre of dry matter forage yield.

Figure 1. Cattle grazing on a wheat field. Photo courtesy of Great Plains Grazing.

Producers who need more pasture than normal can plant even earlier, at the likely expense of lower grain yields. Planting very early opens wheat to many risks, such as wheat streak mosaic, barley yellow dwarf, Hessian fly, grasshopper damage, planting into hot soils (and consequent shortened coleoptile length), and common root rot. If beef prices are more favorable in the spring, wheat can also be grazed out, foregoing grain yield altogether. Wheat usually produces most of its forage in late fall and early winter, and again in the spring. There are differences among varieties in how much fall forage is produced. Grow an awnless variety if planning on grazing the wheat out.

For more information on dual-purpose wheat, please refer to the eUpdate article, "Managing wheat for forage and grain: the dual-purpose system". For a comparison of wheat variety performance under grain only versus dual purpose systems, please refer to the publication "Wheat variety date of first hollow stem, fall forage yield, and grain yield for 2019-20".

Winter barley. There are new, improved varieties of winter barley available with better winterhardiness, especially under grazing. Many of the newer varieties also produce more forage than older varieties. Barley produces palatable growth rapidly in the fall under favorable conditions. It is considered superior to other cereals for fall and early winter pasture, but wheat, triticale, and rye provide better late winter and spring grazing. Barley has excellent drought and heat tolerance. Winter barley forage is typically the most palatable of the small grain cereals and feed quality is the highest, although tonnage of barely is usually less then triticale or rye.

Winter rye. Rye establishes fall pasture quickly. It also regrows rapidly in late winter and early spring. However, rye becomes "stemmy" and unpalatable earlier in the spring than other cereals. Since rye is less palatable and higher in fiber than wheat or barley, cattle gains during grazing are normally greater on oat, wheat, triticale, and barley pasture than on rye pasture. Rye is the hardiest of the small

grain cereals for overall tolerance to drought, heat, winterkill, and poor soil conditions.

Winter triticale. Triticale, a cross between wheat and rye, possesses the toughness of rye along with the quality of wheat. It can be grazed much harder than wheat and still recover to produce grain. Triticale and rye can be planted about a month earlier than wheat with a decreased risk of wheat streak mosaic (while the triticale might not show symptoms of wheat streak mosaic virus infection, it may vector the mites that might affect a neighboring wheat field). However, there is still risk to grasshopper feeding in the fall, hessian fly, barley yellow dwarf, or root rot. Planting triticale (Figure 2) or rye earlier in the fall increases the amount of fall forage available compared to winter wheat. Triticale has longer effective spring grazing than rye, but not as long as wheat. Depending on the variety, winter triticale will head later than rye so the forage can remain higher in quality later into the spring. Heading date on all winter cereals should be a consideration if spring grazing is the goal.

Figure 2. Cattle grazing on a triticale research field. Photo courtesy of John Holman, K-State Research and Extension.

Small grain pasture management

As planting dates get later in the fall, producers will get more fall forage production from triticale and rye. The later it gets; the more rye becomes the best option for fall forage needs.

When planting a small grain cereal primarily for forage, use a seeding rate about 50-100 percent higher than if the crop were grown for grain. In western Kansas and under dry soils conditions, a seeding rate of 1.5 bushels per acre is recommended. In eastern Kansas or under irrigation, a seeding rate near 2 bushels per acre is recommended. When planting a small grain cereal for grazing purposes, increase N rates by about 30 to 50 pounds of N per acre. To determine the actual amount of additional N needed, the following formula can be used:

Additional lbs N/acre = (Number of animals/acre) x (lbs of weight gain/animal) x 0.4

In a graze-out program, all the N may be applied in the fall. However, split applications will reduce the chances of having a problem with nitrate toxicity. In addition, there may be excess N in the fall from failed summer crops, so producers should use caution when putting on N without a profile N soil test.

Under good growing conditions, a well-fertilized small grain dryland pasture can carry about 500 pounds of cattle per acre. Under poor growing conditions, stocking rates should be reduced considerably. Cattle gains of 1.5 to 2.5 or more pounds per acre per day are possible during periods of good pasture production. Under irrigation, with intensive management, much higher stocking rates can be attained.

Grazing management

Fall grazing management is critical to the success of small grain pastures. Begin grazing when the plants are well rooted and tillered, usually about 6 to 8 weeks after planting. If the foliage is too tall when the animals are introduced, or if the crop is overgrazed, the plants will be more susceptible to winterkill. Make sure some green leaves remain below the grazing level. The minimum stubble height should be about 3 to 4 inches. Rye has a more upright growth pattern than most wheat varieties, so it should not be grazed as low. Winter barley is more susceptible to winterkill than rye or wheat. However, newer varieties of barley are exhibiting increased winter hardiness.

Forage quality considerations

In terms of overall forage quality of hay, barley is highest, followed by oats, wheat, triticale, and rye. Yet, the forage quality of all small grains in the vegetative stage is more than sufficient for any grazing animal. During the fall and early spring periods of peak production, the crude protein content of small grain pasture is normally about 20-25 percent. Growing cattle require about 12 percent crude protein, thus no protein supplements are necessary.

Small grain pastures can cause bloat. Daily supplementation with poloxalene (Bloat Guard) is highly effective in reducing bloat and is available in many different feeding forms. Feeding high-quality grass hay, silage, and/or an ionophore such as Rumensin or Bovatec can also provide some protection against bloat. Rumensin and Bovatec have also been shown to increase stocker cattle weight gains on wheat pasture.

Cows with high milk production grazing small grain pasture in the spring can experience grass tetany. To prevent this, provide a mineral supplement containing magnesium. Cattle should be started on the mineral two weeks prior to the risk of grass tetany.

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3. After harvest is the optimal time for Soybean Cyst Nematode sampling

Soybean cyst nematode (SCN) is a major problem in soybean fields throughout eastern and central Kansas (Figure 1). It is important to monitor SCN levels regularly to determine if management strategies, such as variety resistance and crop rotation, have been successful.

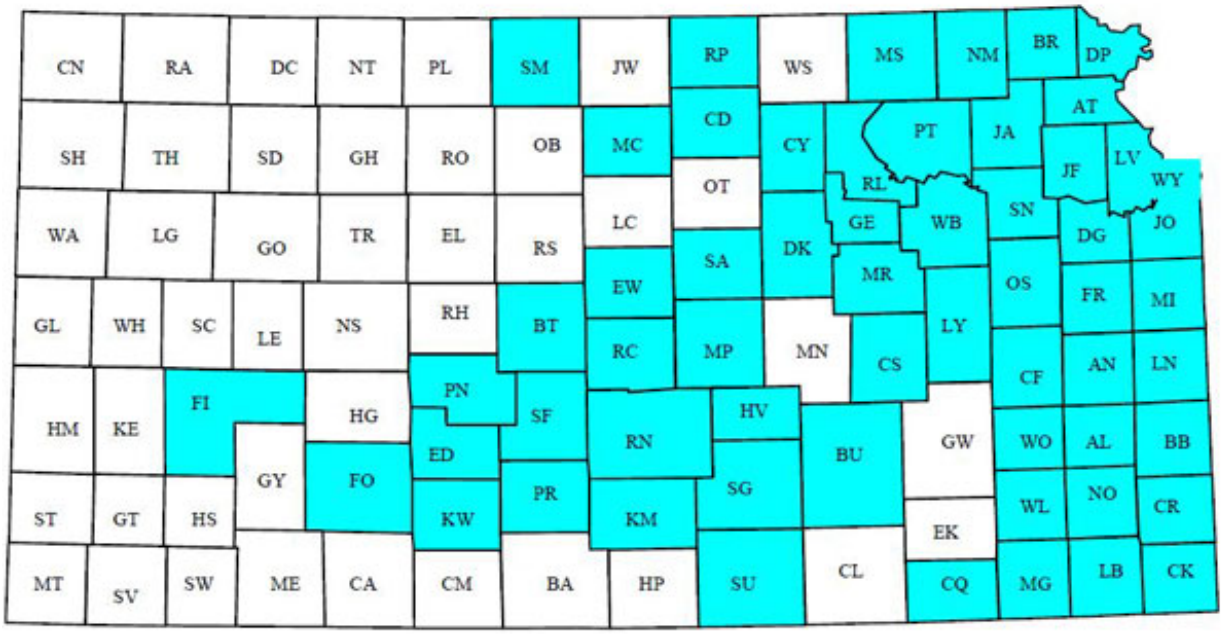

Figure 1. As of January 1, 2020, SCN was identified in 59 Kansas counties that produce >85% of Kansas soybeans. Photo courtesy of Timothy Todd.

Immediately following harvest is the best time to check fields for SCN and start planning for next season. Confirming the presence of SCN and determining population levels is the basis for a successful integrated management program. Here we discuss the recommended strategy for SCN sampling.

To collect a SCN sample you will need:

1. A soil probe (or sharpshooter spade)
2. A bucket
3. A labeled bag. Label should include the following information:
    a. Field identification (*i.e.* Field ID: North Farm, near Doe Creek)
    b. Size of the area being sampled (*i.e.* 20 acres)
    c. Crop history (*i.e.* soybean, corn, and soybean)

Recommended field pattern for sample collection:

If your field is fairly uniform, divide it into quadrants for your SCN sample collection. Sections of the field that have had different cropping histories or have a different soil type should be sampled separately. **For each quadrant or area of the field, you will collect 10 to 20 cores to a depth of 6 to 8 inches.**

It is important that when collecting soil cores you walk in a systematic pattern, such as a "Z" pattern (Figure 2). Collect a total of 10 to 20 soil cores, emptying each into the bucket after collection. All core samples should be mixed well, to account for any minor variation between cores. After mixing, collect 1 pint of soil, approximately 2 cups, in a labeled plastic bag and seal.

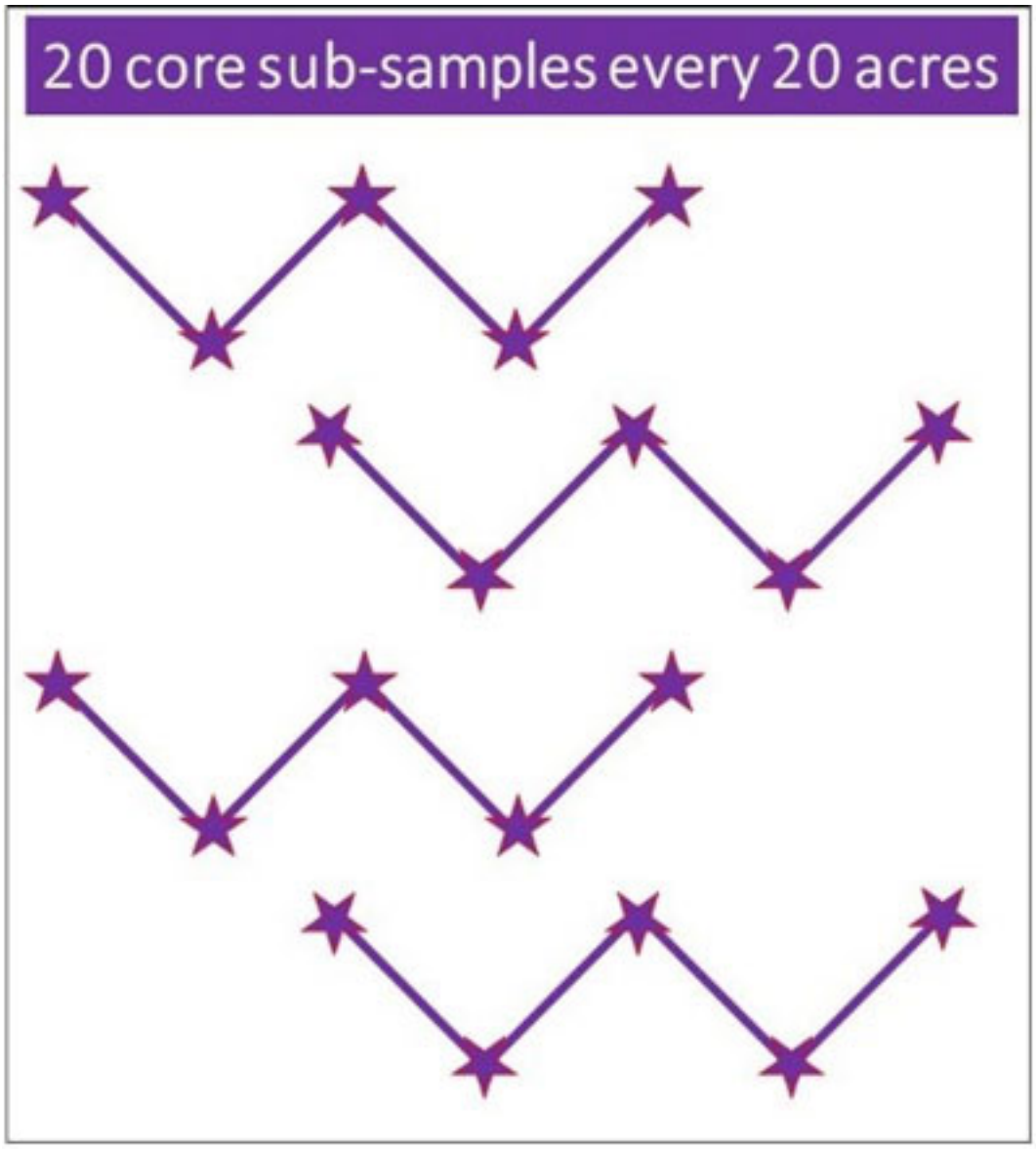

Figure 2. Example of a good sampling pattern for collecting soil to test for SCN.

When sending your samples to the diagnostic lab make sure to:

1. Keep samples refrigerated until shipping
2. Send overnight or as fast as possible (time is crucial)
3. Avoid leaving bags in the sun (which can kill nematodes)
4. Send the samples to the Plant Disease Diagnostic Lab in the K-State Plant Pathology Department.

5. You can find the **Plant Disease Diagnostic Check sheet** at https://www.plantpath.k-state.edu/extension/diagnostic-lab/documents/DiseaseLabChecksheet.pdf

Shipping address:

K-State Plant Disease Diagnostic Lab
4032 Throckmorton PSC
1712 Claflin Road
Manhattan, KS 66506
clinic@ksu.edu
785-532-1383

Remember, your results will only be as good as the sample that you send to the lab!

Check out this short, informative video from our lab: Soybean Cyst Nematode-SCN Sampling 2020: https://youtu.be/b6Eo0isl1I0 .

For more information, feel free to contact us at the K-State Plant Pathology Department.

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4. Interim decision announced regarding atrazine registration review

Atrazine is a key herbicide for corn and sorghum production and fallow systems (Figure 1). This herbicide has received considerable scrutiny from various groups. Currently, the EPA is conducting a routine registration review as required by the Food Quality Protection Act passed in 1996.

The interim decision from the registration review was released on September 14. This decision will not be finalized until two more assessments are completed: endangered species assessment and endocrine disruptor screening. The deadline for the endangered species assessment is September 28, 2021.

The changes most likely to affect Kansas farmers are primarily related to reducing off-target movement of atrazine. These include:

- 15 MPH weed speed restriction,
- 15-foot buffer from edge of streams/rivers and endangered species habitat, and
- Medium-sized droplets or larger.

Stay tuned to the eUpdate for any future updates related to atrazine or other herbicides.

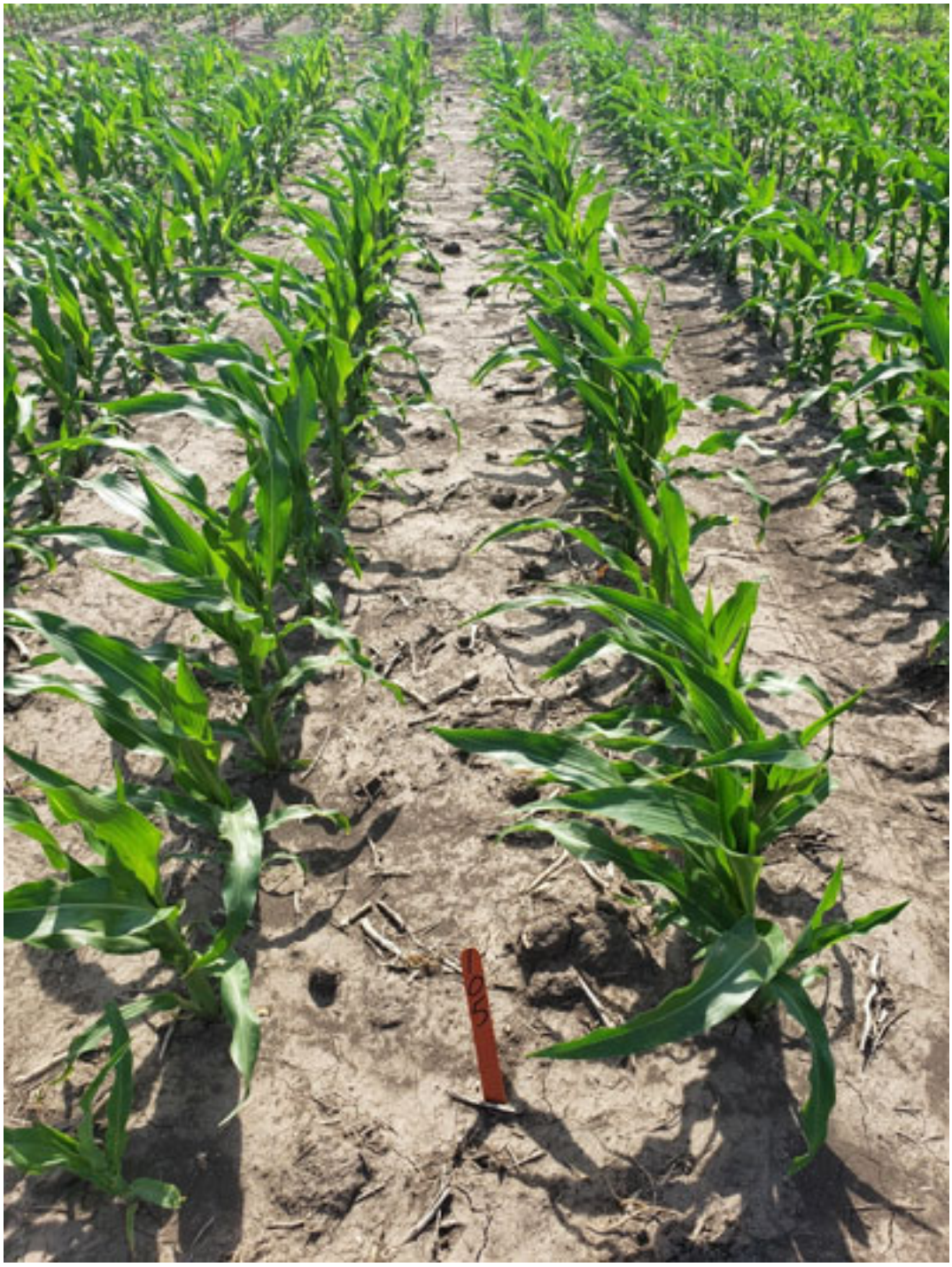

Figure 1. This plot was treated with atrazine at planting and early post-emergence, staying under the 2.5 lbs per acre per calendar year total application limit. Photo by Sarah Lancaster, K-State Research and Extension.

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5. Dicamba update: XtendFlex soybeans gain final approval

One of the question marks around dicamba-resistant soybeans was addressed with the September 28th announcement that XtendFlex soybeans gained approval that will allow exports to the European Union. This means that Bayer will be selling XtendFlex soybeans in the United States for the 2021 season. XtendFlex soybeans allow over-the-top applications of glyphosate, specific dicamba-containing herbicides, and glufosinate (Liberty). The ability to use glufosinate will help control troublesome weeds, such as glyphosate-resistant Palmer amaranth.

Uncertainty still remains for other dicamba products

It is still unknown when, or if, the EPA will approve labels for the use of over-the-top dicamba products, including XtendiMax, Engenia, FeXapan, and Tavium during 2021 and beyond. Company representatives anticipate a decision this fall. In addition to the timing of the decision, there is considerable speculation surrounding the possibility of additional application requirements.

The uncertainty surrounding the labels is influencing farmer decisions for 2021. Approximately 40% of respondents in an on-going survey say that label uncertainty has influenced their choice of herbicide-resistant soybean traits for 2021. The majority of respondents (63%) say they intend to plant dicamba-resistant soybeans next spring, with 35% planning to use 2,4-D-resistant soybean varieties. This would be a major shift from 2020, when approximately 95% of soybean growers used dicamba-resistant varieties.

Regardless of which herbicide-resistance trait farmers choose, one of the most important factors influencing weed control is the use of pre-emergence herbicides (Figure 1). It is important that growers use multiple effective herbicides and strongly consider applying over-lapping residual herbicides to prevent late-season weed emergence.

Figure 1. These two plots were in the same XtendFlex soybean trial near Manhattan, KS during the 2020 growing season. Excellent weed control was achieved when a dicamba-containing herbicide was applied at planting followed by a post-emergence application of glufosinate plus a residual herbicide in the plot on the left. The same herbicides were used in the plot on the right, but the dicamba-containing herbicide was applied post-emergence. Photos by Sarah Lancaster, K-State Research and Extension.

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6. Check for stalk rots prior to grain sorghum harvest

It is important to check corn and sorghum fields for stalk rot diseases prior to harvest. The two most common types of stalk rot in grain sorghum and corn are charcoal rot and Fusarium stalk rot. Both diseases are known to survive in crop residue and can survive in the soil for many years. Stalk rots have somewhat similar symptoms so it is useful to be able to tell them apart.

Even in fields where lodging is has not yet occurred, producers should be prepared to deal with stalk rot issues. Stalk rot can be more problematic in sorghum than in corn due to a generally thinner stalks in sorghum.

Figure 1. Sorghum lodging caused by Fusarium stalk rot. Photo by Kim Larson, Agronomist.

Annual losses are difficult to determine because unless lodging occurs, the disease mostly goes unnoticed. The best estimates are that at least 5% of the sorghum crop is lost each year to stalk rot. The incidence of stalk rot in individual fields may reach 90 to 100% with yield losses of 50%. The most obvious losses occur when plants lodge. More important may be the yield losses that go unnoticed. In sorghum, yield losses are caused by reduced head size, poor filling of grain, and early head lodging

as plants mature early.

Symptoms generally appear several weeks after pollination when the plant appears to prematurely ripen. The leaves become dry, taking on a grayish-green appearance similar to frost injury. The stalk usually dies a few weeks later. Diseased stalks can be easily crushed when squeezed between the thumb and finger and are more susceptible to lodging during wind or rainstorms. The most characteristic symptom of stalk rot is the shredding of the internal tissue in the lowest internodes of the stalk, which can be observed when the stalk is split. This shredded tissue may be tan colored (Fusarium stalk rots); red or salmon, (Fusarium and Gibberella stalk rots); or grayish-black (charcoal rot).

Table 1. Summary of stalk rots in grain sorghum.

Disease	Symptoms	Weather
Charcoal rot stalk rot	Internal shredding of lower nodes; black sclerotia attached to the vascular tissue	High soil temperatures (98 °F) and low soil moisture during grain fill
Fusarium stalk rot	Internal shredding of lower nodes; tan or pink-to-purple internal discoloration	Dry conditions early and warm (82-86 °F) wet weather 2 to 3 weeks after pollination

Charcoal rot

Hot, droughty weather with soil temperatures in the range of 90 degrees or more are ideal for the development of charcoal rot. Drought does not cause the problem, but it weakens the plants' defenses to the disease. Charcoal rot is usually less severe if drought stress is not a factor.

While it is difficult to separate the effects of charcoal rot from simple drought stress, a good rule of thumb is that plants infected with charcoal rot will die about two weeks earlier from dry weather than plants that do not have charcoal rot. Grain fill that would have occurred during this period is the amount of yield loss that can be attributed to charcoal rot.

The plants will die prematurely. When stalks are split, the typical shredded appearance in the lower stalk associated with all stalk rots will be present. Additionally, there will be a gray to black discoloration of the inner stalk caused by numerous sclerotia (small, black survival structures of the fungus) forming on the vascular bundles and decaying tissue.

Figure 2. Close-up of charcoal rot in grain sorghum. Photo by Doug Jardine, K-State Research and Extension.

Fusarium stalk rot

Fusarium root and stalk rot is generally found in the same areas where charcoal rot develops. The pith of Fusarium stalk rot infected plants will have a shredded appearance and is typically tan in color, but in some hybrids the pith in the lower stalk may be pink to red in color. Plants may die prematurely or lodge.

Fusarium stalk rot is favored by wet conditions early in the season when denitrification or nitrogen loss from leaching may occur Research has shown that mid-season dry weather may predispose plants to later season problems. Later in the season, following pollination, warm (82 to 86 degrees F), wet weather can leach remaining nutrients from the soil resulting in late-season nitrogen stress and an increase in stalk rot.

Figure 3. Fusarium stalk rot in grain sorghum. Source: Stalk Rots of Corn and Sorghum**, K-State publication L-741.**

The most recent drought monitor index map for Kansas (Figure 4) provides clues as to where stalk rot problems may occur. In the areas of the state currently under drought stress, charcoal rot may be more common. In other parts of the state where there have been alternating wet and dry periods throughout the growing season, Fusarium stalk rot may be more common.

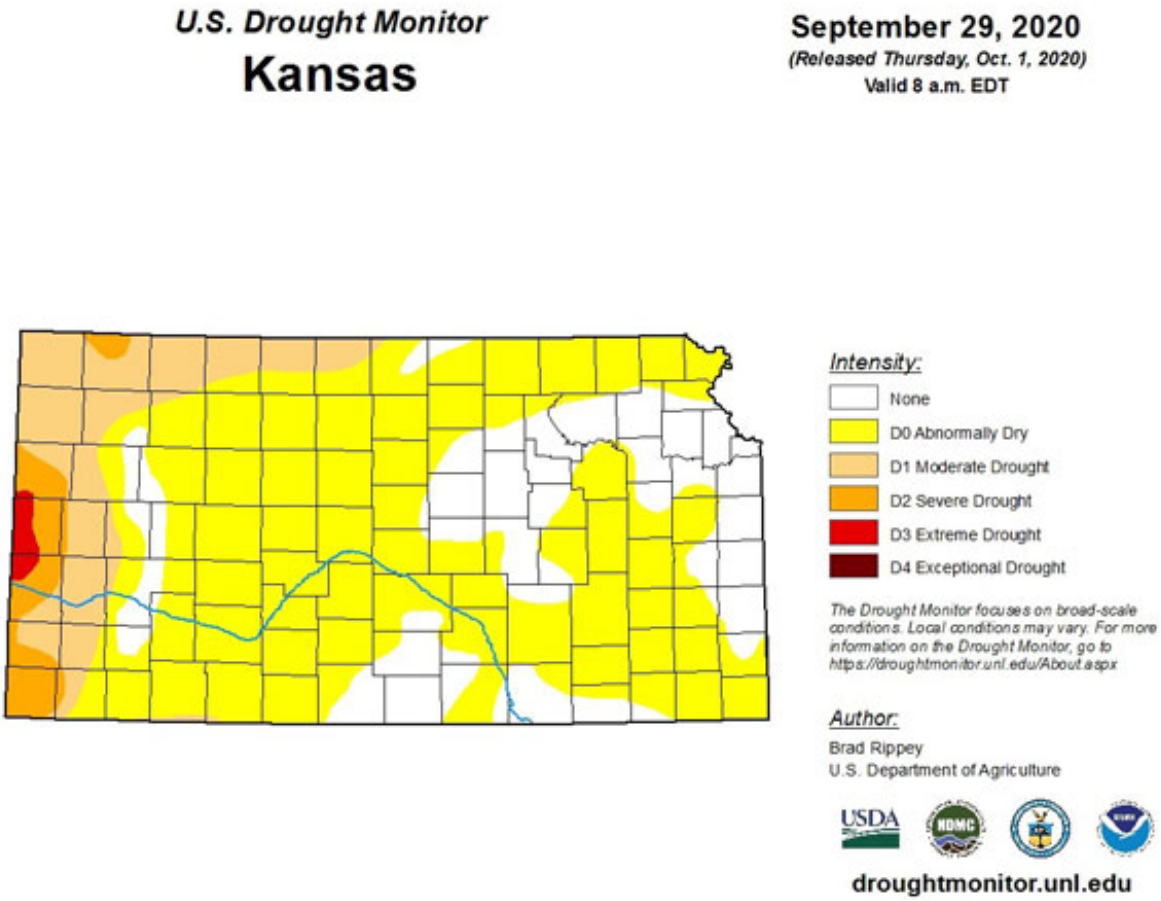

Figure 4. U.S. Drought Monitor Index map as of September 29, 2020. https://droughtmonitor.unl.edu/

General considerations

Stalk rot is a stress-related disease. Any stress on a crop can increase both the incidence and severity of stalk rot. Research has indicated that when the carbohydrates used to fill the grain become unavailable due to nutrient shortage, drought stress, leaf damage from insects, hail, disease or reduced sunlight, the plant uses nitrogen and carbohydrate reserves stored in the stalk to complete grain fill. When sugarcane aphid pressure is heavy, there will likely be an increase in the incidence of stalk rot and producers should be prepared to harvest as soon as the grain is ready.

The loss of nitrogen and carbohydrate reserves resulting from leaf damage weakens stalk tissues and results in increased stalk rot susceptibility. Early maturing hybrids are generally more susceptible than full-season hybrids.

Other than irrigation or rain, there is little that can be done to prevent stalk rot by late summer. No hybrid has complete immunity to the stalk rotting pathogens. When choosing a hybrid, a grower should select a hybrid that is not only a high yielder, but one that has good standability and "stay-green" characteristics. This will help assure that if stalk rot does occur, losses due to lodging will be minimal. A balanced nutrition program based on soil tests should be used. Overall fertility levels should be adjusted to fit the hybrid, plant population, soil type, environmental conditions and

management program. An excess, as well as a shortage, of nitrogen can lead to increased stalk rot problems.

Producers can check their sorghum for stalk rots by squeezing the lower stem with their thumb and fingers. If the stalks crush easily, they are probably infected with one of the stalk rot organisms and may lodge at any time. Check 100 plants across the field to determine the percent of affected plants. If the percentage of stalk-rot-infected plants is high, sorghum should be harvested as soon as possible, even if it hasn't dried down adequately in the field. If the stalks are firm, the plants will probably be able to stand just fine in the field for several more weeks if necessary.

Rotation with non-susceptible crops, such as small grains and alfalfa, will reduce the severity of stalk rot but will not eliminate it. A good insect control program is a must in limiting losses to stalk rot. In addition to the effect of leaf damage on stalk integrity, pathogens may enter stalks or roots through wounds created by insects. Hail damage will generally increase the amount of stalk rot damage.

For more information, see "Stalk Rots of Corn and Sorghum," K-State publication L-741, at:
http://www.plantpath.k-state.edu/extension/publications/L741.pdf

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