Issue 762

K-STATE Research and Extension

Extension Agronomy

eUpdate

08/23/2019

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

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1. Estimating soybean yield potential

Many producers like to estimate the yield potential of their soybeans well before reaching the end of the season. In contrast with corn, soybeans can easily compensate for abiotic (e.g., temperature, water) or biotic stresses (e.g., insects, diseases). The final number of pods is not determined near the end of the season (beginning of seed filling, R5 stage). For comparison, in corn, the final kernel number is attained during the 2-week period after flowering. Thus, when estimating soybean yield potential, we have to keep in mind that the estimate could change depending on the growth stage at the time the estimate is made and weather conditions. For example, wet periods toward the end of the reproductive period can extend the seed-set period, promoting greater pod production and retention, with larger seed size and heavier seed weight.

From a physiological perspective, the main yield driving forces are: **1) plants per acre, 2) pods per area, 3) seeds per pod, and 4) seed size**. Estimating final yield in soybean before harvest can be a very tedious task, but a simplified method can be used for just a basic yield estimate.

When can I start making soybean yield estimates?

There is not a precise time, but as the crop approaches the end of the season (R6, full seed or R7, beginning of maturity) the yield estimate will be more accurate. Still, you can start making soybean yield estimates as soon as the end of the R4 stage, full pod (pods are ¾-inch long on one of the top four nodes), or at the onset of the R5 stage, beginning seed (seeds are 1/8-inch long on one of the top four nodes). Keep in mind that yield prediction is less precise at those early stages.

Is plant variability within the field an issue in soybeans?

Variability between plants relative to the final number of pods and seed size needs to be considered when trying to get an estimation of soybean yields. In addition, variability between areas within the same field needs also to be properly accounted for (e.g. low vs. high areas in the field). Make yield estimations in different areas of the field, at least 6 to 12 different areas. It is important to properly recognize and identify the variation within the field, and then take enough samples from the different areas to fairly represent the entire field. Within each sample section, take consecutive plants within the row to have a good representation.

Conventional approach to estimating soybean yields

In the conventional approach, soybean yield estimates are based on the following components:

- Total number of pods per acre [number of plants per acre x pods per plant] **(1)**
- Total number of seeds per pod **(2)**
- Number of seeds per pound **(3)**
- Total pounds per bushel, or test weight, which for soybeans is 60 lbs/bu **(4)**

The final equation for the estimation of the potential soybean yield is:

[(1) x (2) / (3)] / (4) = Soybean yield in bushels/acre

Simplified approach to estimating soybean yields

The main difference between the "conventional" and "simplified" approaches is that the conventional approach uses the total number of plants per acre in its calculation; while in the simplified approach, a constant row length is utilized to represent 1/10,000th area of an acre (Figure 1).

For the simplified approach, sample 21 inches of row length in a single row if the soybean plants are spaced in 30-inch rows; in 2 rows if the row spacing is 15 inches; and in 4 rows if the row spacing is 7.5 inches.

Figure 1. In the "simplified" approach to estimating yields, sample 21 inches of row length to equal 1/10,000th of an acre. The number of rows to sample will depend on the row spacing. With 30-inch row spacing, sample one row. With 15-inch row spacing, sample two rows. With 7.5-inch row spacing, sample four rows. Photo by Ignacio Ciampitti, K-State Research and Extension.

Repeat this procedure in different sections of the field to properly account for the natural field variability.

What are the driving forces of soybean yield?

1) Total number of pods per acre:

Count the total number of pods (Figure 2) within this constant row length. After counting all the plants within the 21-inch row sections that represent 1/10,000th of an acre, estimate a final pod number per acre. Use a similar procedure in different areas of the field to get a good overall estimate at the field scale. One good criterion is only to consider pod sizes that are larger than ¾ or 1 inch long. Smaller pods can be aborted from this time on in the growing season until harvest.

Figure 2. Total number of pods per plant (only consider the pod sizes larger than ¾ or 1 inch). Photo by Ignacio Ciampitti, K-State Research and Extension.

2) Total number of seeds per pod:

Soybean plants will have, on average, 2.5 seeds per pod (ranging from 1 to 4 seeds per pod), primarily regulated by the interaction between the environment and the genotypes (Figure 3). Under severe drought and heat stress, a pessimistic approach would be to consider an average of 1-1.5 seeds per pod. This value is just an approximation of the final number of seeds per pod, and can change from the time of estimation until the end of the growing season.

Figure 3. The number of seeds per pod will vary somewhat, depending on the growing environment and genotype. Photo by Ignacio Ciampitti, K-State Research and Extension.

3) Seed size:

Seed size can range from 2,500 (normal to large seed weight) to 3,500 (small seed size) seeds per pound. This season, conditions are mostly favorable in Kansas for promoting large seed sizes. In more stressful years, such as 2012 and 2011, seed size is normally smaller, meaning a larger number for the seeds per pound (e.g. 3,500 seeds per pound). In the simplified estimation approach published by Dr. Casteel, you do not need to actually measure the number of seeds per pound in order to estimate yields, as is done in the conventional approach. Instead, a seed size conversion factor is used. If the conditions are favorable and large seed size is expected, the conversion is 15 units; while if abiotic or biotic stresses are present during the seed-filling period, a seed size factor of 21 units is used. Further details related to the seed size factor can be found in the link to the Purdue University extension article listed at the end of this article.

Example of the simplified approach for estimating soybean yields:

Say that we have 120,000 plants/acre in a 30-inch row. Then, we should have around 12 plants in 21 inches of row. In those 12 plants, we have measured on average 22 pods per plant, with a total number of 264 pods (22 x 12).

If we assume a "normal" growing season condition, then the final seeds per pod will be around 2.5, and for the seed size factor, we can assume large seeds, and will use a conversion factor of 15 units.

Equation for a "Favorable" Season:

264 pods x 2.5 seeds per pod / 15 = 44 bushels per acre

For a "droughty" (late reproductive, from R2 to R6 stages) growing season, the final seed number and size will be dramatically affected. Thus, even if the pod number is the same as in a normal season, the yield calculation could be:

Equation for a "Drought" or Short Seed Filling Season:

264 pods x 1.5 seeds per pod / 21 = 19 bushels per acre

Basically, this "simplified approach" relates the total number of pods in a "known" unit area (easily extrapolated to the acre unit), and is affected by the total number of seeds in the pod. This is adjusted by the estimated seed weight, which is affected by two main components: duration of seed fill and rate of dry mass allocation to the seeds.

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2. Sudden Death Syndrome (SDS) in soybeans - 2019 update

Within the past two weeks, SDS has been reported in Pawnee County, near Lawrence, and at the Kansas River Valley Paramore Unit. Wet soils typically trigger SDS development, so if August rains continue to fall, we can expect to see more symptom development, especially in fields with known histories of SDS.

SDS is a disease caused by the soilborne fungus *Fusarium virguliforme*. This fungus prefers wet conditions and thus is usually most severe in irrigated fields or dryland fields that receive significant amounts of rain during the early- to mid-reproductive stages. SDS tends to be most severe on well-managed soybeans with a high yield potential. It also tends to be more prevalent in fields that are:

- Infested with soybean cyst nematode
- Planted early when soils are cool and wet
- Compacted

Historical yield losses from this disease are generally in the range of 1 to 25 percent.

Disease symptoms

Symptoms of SDS are easily recognizable. SDS begins as small, bright, pale green to yellow circular spots on the leaves during late vegetative or early reproductive growth stages. As the disease progresses, the tissue in these spots starts to die and enlarges to form brown streaks between the veins. Symptoms are more pronounced on top leaves. As the disease further develops, the leaflets drop off but the petioles remain attached.

Figure 1. Scattered yellow spots on some of the greener leaves in the lower right in this photo are the early leaf symptoms of SDS. The leaves in the center foreground have more advanced symptoms of SDS. Photo by Stu Duncan, K-State Research and Extension.

Figure 2. A soybean plant with leaf petals dropped but petioles remaining attached.

Flowers and pods may abort or not fill. Another key symptom of SDS is substantial amounts of root decay and discoloration of roots and crown.

Figure 3. Root rot occurs on plants infected with the SDS pathogen. This symptom distinguishes SDS from brown stem rot and stem canker. Left image by Jim Shroyer, K-State Research and Extension; right image courtesy of Iowa State University.

Diseased plants are easily pulled out of the ground because the taproots and lateral roots have deteriorated. Symptoms present on both the leaves and roots are diagnostic for SDS. Positive diagnosis of the inner tap root is key to disease identification. Other problems such as triazole fungicide "burn," and the diseases stem canker and brown rot, can give similar foliar symptoms. Please note, stem canker has also been reported in 2019 so be sure to check the tap roots when making a diagnosis.

Potential yield losses and management considerations

Soybean yield losses from SDS depend on both the variety and stage of crop development when the symptoms first appear. Appearance of the disorder at early pod fill is more damaging than its appearance at a later stage of plant development. Yield reduction is the result of reduced photosynthetic area, defoliation, flower and pod abortion, and reduced seed size.

Effective management of SDS requires an integrated approach. Management starts with the planting of SDS resistant varieties. Most varieties are susceptible to some degree and very few have excellent resistance. The most susceptible varieties yield 40 to 50 percent less than the resistant varieties at locations where SDS is present and yield levels are in the range of 60+ bushels per acre.

Figure 4. The variety on the right in a recent K-State performance test was susceptible to SDS. The foliage was completely dead by early pod fill. Photo by Bill Schapaugh, K-State Research and Extension.

Seed companies have SDS ratings for most of their varieties and there is typically a wide variation in ratings. There is little or no correlation between the maturity group of a variety and its SDS resistance rating.

The presence of SDS is strongly correlated with the presence of soybean cyst nematode (SCN). Therefore, where SDS is present, soil samples should be taken to determine the level of SCN present and it will need to be managed along with the SDS. However, producers cannot manage SDS simply by selecting varieties that have SCN resistance. Some varieties with good resistance to SCN are highly susceptible to SDS and some varieties that are susceptible to SCN are quite resistant to SDS. Ideally, producers should select varieties that are resistant to both SDS and multiple races of SCN.

In addition to resistant varieties, a second line of defense is the use of the planting time seed treatment ILeVO, which contains the active ingredient fluopyram. This product has performed well in several K-State research trials. Other seed treatments that have been evaluated were not as effective as ILeVO. The cost of ILeVO has come down since it was first introduced, but it is still costly insurance in fields not known to have SDS in them and we recommend its use only in fields with a history of the disease.

Cultural management practices that can reduce the risk of SDS infection include:

- planting SDS infested fields last when soil temperatures are warmer
- avoiding planting into overly wet soils
- reducing compaction problems within a field

Producers who have fields with compaction problems should make every effort to correct that problem before planting soybeans next season.

Crop rotation has a limited effect on SDS since the fungus has been shown to invade corn debris and survive saprophytically in the absence of a soybean crop.

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3. Maintaining grassed waterways - Maximize the benefits

Grassed waterways play an important role in improving water quality. Prevention of gully erosion is the primary contribution, but grassed waterways also intercept pollutants leaving the field. Grassed waterways are designed, however, for the safe and rapid transport of water, not for the shallow sheet flow necessary to effectively intercept pollutants. Because waterways are a flow-way for excess runoff, nutrient and pesticide applications within the boundaries of grassed waterways must be carefully managed to avoid movement of pollutants directly to surface water. Although many grassed waterways have been replaced with underground tile outlet terraces, the amount and intensity of rainfall for 2019 is a reminder that grass waterways are an extremely valuable part of a whole-farm and watershed-wide conservation system.

Waterways are only one component of a conservation system that includes terraces, conservation tillage, residue management, good crop rotation or use of cover crops, and nutrient and pest management. A well-designed and maintained soil conservation system helps sustain productivity while providing clean water to the watershed.

Fertilization and liming of waterways

The primary purpose of a good fertilization program is to ensure that waterway grasses grow vigorously and maintain a dense, tough, non-erodible sod. Soil testing is an integral part of establishing waterways. Soils should be limed and fertilized according to soil test recommendations. In areas where the subsoil is exposed during construction, a onetime application of manure is a good way to build organic matter and provide nutrients. Any amendments should be well incorporated before seeding. Once established, waterways require annual maintenance. For stand maintenance of cool season grasses, an annual application of 30 to 40 pounds of nitrogen (N) per acre is recommended. Nitrogen should be applied between late November and mid-March. Higher N rates will be necessary when managed for hay or seed production.

If seed production is desired, N fertilizer should be applied before soil freezing in November or December. On soils low in phosphorus (P) or potassium (K), an application of these nutrients, according to soil test recommendations, should be included. Soil tests should be conducted every 3 to 4 years on established waterways to monitor soil pH, P, and K levels. Needed P and K can be applied at the same time as N fertilizer. If lime is needed on established waterways, apply no more than 2,000 pounds ECC/a (effective calcium carbonate per acre).

Routine inspections and maintenance

Waterways should be inspected at least annually and, if possible, after each heavy rain. When problems develop, perform needed maintenance promptly to prevent additional, costly damage to the waterway. Abuse and neglect are the most common causes of waterway failure. Common maintenance problems include weeds and brush, eroded spots, sediment deposits, bare spots, and insufficient grass stands. Maintenance activities may be needed more frequently when the waterway handles a large volume of water or is on a steep slope.

A vigorous grass stand, maintained with routine mowing and a well-balanced fertilization program, will help control with weeds and brush. Weeds and brush also can be controlled by cutting, grazing, or herbicide use. The current issue of the K-State Research and Extension publication *Chemical Weed Control for Field Crops, Pastures, Rangeland, and Non-cropland* has recommendations on herbicide use. See: http://www.ksre.ksu.edu/bookstore/pubs/SRP1099.pdf

Avoid herbicides with a high potential for runoff. Herbicides used on adjacent cropland may harm grass stands when transported in runoff water or attached to sediment. Damage also can occur when the sprayer is not turned off while crossing waterways.

Waterway maintenance includes mowing. Timely mowing provides an even growth of grass in the spring and minimizes sediment buildup where terraces connect to the waterway. Frequent mowing or shredding can prevent smothering without removing the clippings. Some grasses, such as fescue, tend to become clumpy when mowed infrequently. Grass clumps can concentrate water flow, causing erosion and creating channels.

Gully formation is the most serious problem in a waterway. It is usually caused by poor management, sediment deposits, using the waterway as a roadway or livestock trail, or by an unstable outlet. Eroded spots should be filled promptly, compacted, and reseeded or sodded. Slight overfilling allows settling. Reseeding perennial grasses with annuals such as wheat, oats, rye, or annual ryegrass will help ensure that good cover is quickly re-established. During grass establishment, divert runoff by use of silt fences or by low elevation earth berms. For unstable outlets, grade stabilization structures may be necessary. Minimize machine travel within waterways, especially when the soil is wet or soft. Try to limit traffic within the waterway, using the sides, or berms to drive.

Sediment accumulation results from insufficient water velocity and is most common where water from terraces discharges into the waterway. Sediment deposits should be removed promptly, because they tend to increase with subsequent runoff events, eventually blocking the waterway. In severe cases, reshaping and reseeding the waterway may be the best option for restoring waterway capacity. Reseeding grass in a waterway may be necessary in cases of initial establishment problems, smothering from lodged growth or improper mowing, sedimentation, weed and brush competition or herbicide damage. For limited sized areas, reseeding can be enhanced by mulching and slight overfilling of reseeded areas. Before reseeding, correct nutrient or soil pH deficiencies and perform any other maintenance. Sometimes temporary dikes constructed at terrace outlets are necessary to protect reseeded areas from runoff.

Managing for production

Waterways not only serve to route excess runoff safely to streams, but they also can be a source of income. Grassed waterways frequently lie within productive soils and by design receive a greater proportion of precipitation than the fields they drain. Waterways can provide protein-rich forage for grazing or haying, or they can be managed for seed production. A good fertility program can increase production of forage and/or seed. Well-fertilized waterways can provide high protein forage that helps balance the ration when crop residue is grazed in the fall.

Annual haying is an excellent management practice. With adequate fertility and timely cutting, waterways can provide high-quality forage. Cutting height should not be less than 3 to 4 inches. To maximize quality and quantity, fescue hay should be made in the early boot stage, and brome should

be hayed in full bloom.

For specific management recommendations, consult K-State Research and Extension publications:

Smooth Brome Production and Utilization, C-402
http://www.ksre.ksu.edu/bookstore/pubs/C402.pdf

or

Soil Test Interpretations and Fertilizer Recommendations, MF-2586
http://www.ksre.ksu.edu/bookstore/pubs/MF2586.pdf

Keeping the waterway clear prevents the slowing of water and reduces the sediment accumulation. Any harvested hay should be quickly removed to prevent smothering of vegetation. However, harvest only when the waterway is firm enough to prevent wheel ruts. If the soil is too wet for traffic, postpone harvest to prevent damage to the waterway. This may reduce hay quality, but protecting the waterway structure is more important.

Waterways also can provide excellent seed production. After the seed is harvested, the remaining grasses should be hayed or mowed and clippings removed.

Grazing of waterways may be possible, but grazing should be strictly controlled. Enough plant growth must be left to maintain a healthy, vigorous sod. Never permit overgrazing, and do not graze when the soil is too wet, during initial establishment, or during reseeding of problem areas.

A waterway also can be managed for optimum wildlife habitat by selecting specific grass species and mowing practices. Mowing should be done at a time that does not interfere with the nesting, hatching, or rearing of wildlife. Contact your local Natural Resources Conservation Service or Kansas Department of Wildlife, Parks, and Tourism office for additional information.

Summary

Do:

- Inspect waterways once a year and after every heavy rainstorm.
- Remove grass by mowing, haying, or grazing. If mowing with a sickle mower, remove clippings; if mowing frequently or if using a rotary mower, the clippings are chopped up and need not be removed.
- Fertilize according to soil test recommendations and forage or seed needs.
- Lift tillage equipment and shut off sprayers when crossing waterways.
- Remove sediment and fill eroded spots and wheel ruts quickly.
- Control erosion and runoff in fields draining into the waterway to reduce sedimentation and possible herbicide damage.

Do not:

- Mow shorter than 3 to 4 inches
- Use the waterway as a road or cattle path. Tire tracks or cattle trails are often the beginning of gully erosion.

- Let the grass get clumpy. Water will cut channels between clumps rather than flow through the grass. This will cause erosion.
- Overgraze the waterway. Bare spots are subject to wash-out, and grass that is too short does not provide adequate erosion protection.

Note: This article is adapted from Maintaining Grass Waterways, K-State publication MF-1064 at: http://www.ksre.ksu.edu/bookstore/pubs/MF1064.pdf

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4. Insect activity update - Soybean and sorghum pests

Soybean pests

Defoliators are still present in most soybean fields throughout north central and south central Kansas, especially in double cropped fields. However, infestation levels are still relatively low and growing conditions still seem to be really good.

Podworms (corn earworms/sorghum headworms) are just starting to move into soybeans from sorghum as the sorghum gets past the soft dough stage. Thus, as the soybeans are in the reproductive stages, with new succulent pods being added to the plants, these larvae, plus adult bean leaf beetles and possibly stink bugs, may start feeding on them, which can impact yield pretty quickly. Therefore, using a drop cloth and vigorously shaking the plants over it to count the bugs that fall on it is highly recommended to quantify the pests present, which is necessary to determine management options.

Also, the results of Dectes stem borer tunneling is becoming visible as scattered petioles start to die. Most of the larvae sampled were still relatively small (Figure 1), i.e., probably only 1/4 - 1/3 grown.

Figure 1. Dectes stem borer larva. Photo by K-State Extension Entomology.

Sorghum pests

Much disparity in sorghum development exists throughout north central and south central Kansas, mostly due to weather-caused delays in planting. So, there are many different levels of "worms" infesting this sorghum from whorl stage to some that is already soft dough stage. Therefore, there are also different stages of "headworms" (Figure 2) from small 2nd instar larvae to almost mature 5th instar larvae. Sampling needs to be initiated as soon as plants start flowering to determine infestation levels.

Figure 2. Different stages of "headworms". Photo by K-State Extension Entomology.

Additionally, don't forget about chinch bugs (Figure 3). These don't usually affect plants as much under good growing conditions, which we have had for the most part, but there are still significant populations present which may affect plants if growing conditions become more stressful.

Figure 3. Chinch bug nymph. Photo by K-State Extension Entomology.

Also, some fields throughout north central Kansas have significant infestations of cattail caterpillars (Figure 4). These are often confused with corn earworms or fall armyworms, but they are leaf feeders, not part of any "headworm" complex.

Figure 4. Example of a cattail caterpillar, often confused with corn earworms or fall armyworms. Photo by K-State Extension Entomology.

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5. Save the date for the 2019 Agronomy Fall Field Day, September 20 in Manhattan

The 2019 growing season presented many weather-related challenges to producers in Kansas and neighboring states. In response to these challenges, the focus of the 2019 Agronomy Fall Field Day is "**Building Resiliency in Agronomy**". The field day is scheduled for **Friday, September 20**, from 9:00 a.m. to 1:00 p.m. at the Agronomy North Farm in Manhattan. The event is free to attend and will conclude with a sponsored lunch for all attendees.

Topics will focus on understanding how different agronomic practices and technologies can aid producers in building a more resilient production system. An overview of the topics includes:

- Resilient soils through conservation practices
- Wheat genetics and technology
- Sorghum genetics and resiliency: Delivering traits from seed bank to seed bag
- Crop physiology and extreme temperatures
- Managing variability in the field
- Kansas Mesonet and climate data in Kansas

More detailed information concerning the program topics, speakers, and sponsors will be featured in an upcoming eUpdate. The online registration link is now open at: http://bit.ly/AgronFieldDay2019

For more information, please contact Dorivar Ruiz Diaz at 785-532-6183 or ruizdiaz@ksu.edu

6. Western Kansas Fall Field Day scheduled for August 27, Tribune

Join K-State agronomists and extension specialists at the **2019 Tribune Fall Field Day on Tuesday, August 27**. The event is located 4 miles east of Tribune on Highway 96 (to Whitelaw), then 4.5 miles north and ¾ mile east.

Registration will begin at 8:30 a.m. MDT, followed by field tours and a lunch sponsored by United Plains Ag.

Field tours starting at 9:00 a.m. MDT include:

- Dryland corn maturity x date of planting
- Nitrogen management of dryland grain sorghum – Nitrous oxide emissions
- Dryland wheat performance – Regional results
- Kansas Mesonet – Making weather data available
- Limited irrigation of corn and grain sorghum
- Nitrogen and phosphorus fertilization of irrigated corn and grain sorghum

Presenters at the field day include:

- Lucas Haag, Northwest Area Agronomist, Colby
- Peter Tomlinson, Environmental Quality Specialist, Manhattan
- Chip Redmond, Kansas Mesonet Manager, Manhattan
- Alan Schlegel, Southwest Research-Extension Center, Tribune

7. 2019 Kansas Corn Yield Contest - Deadline for entry is August 30

There is still time to participate in the 2019 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 awarded at the district and state levels. The districts align with crop reporting districts, plus a NNE district was created to include Doniphan and parts of Brown and Atchison (Figure 1). In addition, one statewide dryland winner and one statewide irrigated winner will be announced. District winners will receive $300 and a plaque. Second place entries will receive a $200 prize and third place will receive a $100 prize. The highest yielding dryland and irrigated entries statewide will receive an additional $500 prize. 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 January 2020.

The contest is free of charge to members of the Kansas Corn Growers Association. Pre-registration must be complete by **August 30, 2019 or prior to harvest.** All entries must be postmarked by December 1, 2019. Entries submitted to the National Corn Yield Contest qualify to enter the state contest, but entries must be made to both contests.

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

For more information, call Kansas Corn at 785-410-5009 or email yield@ksgrains.com

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8. Soil Health Summer Tour Field Day, September 3

The Department of Agronomy at K-State is teaming up with several partners including The Soil Health Partnership, Kansas Corn, Palen Family Farms, and Kansas Wheat to host a Soil Health Field Day on Tuesday, September 3. The event is split between two locations in Mitchell County. The first event begins at 10:00 a.m. at Mike Jordan's farm, 831 280 Rd., Beloit, KS. The second event begins at 11:50 a.m. at Palen Family Farms, 1031 180 Rd, Glen Elder, KS.

Topic areas that will be featured include: no-till management, soil microbiology, nutrient management, and crop diversity.

For more information and to register for the event, please visit: https://kscorn.com/soilhealth.

10 AM
MIKE JORDAN'S FARM
831 280 Rd, 67420
Beloit - KS

11:50 AM
PALEN FAMILY FARMS
1031 180 Rd, 67446
Glen Elder - KS

Kansas State University Department of Agronomy
Department of Agronomy
Kansas Corn Growers Association
Palen Family Farms
Soil Health Partnership
Kansas Wheat
* Lunch provided by sponsors

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