



## Extension Agronomy

# eUpdate

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*03/23/2018*

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](mailto:kgehl@ksu.edu), or Curtis Thompson, Extension Agronomy State Leader and Weed Management Specialist 785-532-3444 [cthompso@ksu.edu](mailto:cthompso@ksu.edu).

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<b>1. First hollow stem update: March 21, 2018.....</b>	<b>3</b>
<b>2. Split fungicide treatments on wheat: Should producers consider an early application?.....</b>	<b>6</b>
<b>3. Alfalfa weevil update - Still too early to apply treatment.....</b>	<b>11</b>
<b>4. Can dry soils affect anhydrous ammonia applications in Kansas?.....</b>	<b>13</b>
<b>5. Optimal corn seeding rate recommendations.....</b>	<b>15</b>
<b>6. Kansas drought update - March 20, 2018.....</b>	<b>19</b>
<b>7. 2018 In-Depth Wheat Diagnostic School, May 9-10 in Garden City .....</b>	<b>27</b>
<b>8. Keep spreading the word about the Extension Agronomy eUpdate!.....</b>	<b>30</b>
<b>9. 2017 Census of Agriculture - It's not too late to be counted!.....</b>	<b>31</b>

## 1. First hollow stem update: March 21, 2018

Cattle should be removed from wheat pastures when the crop reaches first hollow stem (FHS). Grazing past this stage can severely affect wheat yields (for a full explanation, please refer to eUpdate article "Optimal time to remove cattle from wheat pastures: First hollow stem" in the Feb. 23, 2018 issue).

### First hollow stem update

In order to screen for FHS during this important time in the growing season, the K-State Extension Wheat and Forages crew measures FHS on a weekly basis in 28 different commonly grown wheat varieties in Kansas. The varieties are in a September-sown replicated trial at the South Central Experiment Field near Hutchinson.

Ten stems are split open per variety per replication (Figure 1), for a total of 40 stems monitored per variety. The average length of hollow stem is reported for each varieties in Table 1. **As of March 21, none of the varieties had yet reached first hollow stem but all varieties had started to elongate the stem and some varieties were very near the 1.5 cm mark.**



**Figure 1. Ten main wheat stems were split open per replication per variety to estimate first hollow stem for this report, for a total of 40 stems split per variety. Photo by Romulo Lollato, K-State Research and Extension.**

**Table 1. Length of hollow stem measured Feb. 21, Feb. 28, March 6, March 14, and March 21, 2018, of 28 wheat varieties sown mid-September 2017 at the South Central Experiment Field near Hutchinson. The critical FHS length is 1.5 cm (about a half-inch or the diameter of a dime). Least significant difference (LSD) between varieties for statistical significance is also shown.**

Variety	2/21/2018	2/28/2018	3/6/2018	3/14/2018	3/21/2018
	Centimeters of hollow stem				
AM Eastwood	0.19	0.28	0.30	0.52	0.79
NE10478-1	0.15	0.25	0.24	0.44	0.71
LCH13-22	0.16	0.21	0.24	0.40	0.65
LCH14-55*	0.17	0.19	0.25	0.42	0.51
LCH14-89	0.15	0.22	0.24	0.39	0.58
LCS Chrome	0.16	0.20	0.25	0.30	0.42
LCS Pistol	0.17	0.22	0.27	0.41	0.63
Bentley	0.12	0.22	0.23	0.35	0.58
Doublestop CL Plus	0.15	0.21	0.26	0.32	0.48
Gallagher	0.18	0.26	0.30	0.50	0.69
Iba	0.16	0.20	0.26	0.41	0.53
Lonerider	0.15	0.21	0.26	0.41	0.74
OK12716	0.15	0.21	0.28	0.35	0.61
Ruby Lee	0.13	0.19	0.25	0.46	0.57
Smith's Gold	0.18	0.27	0.24	0.48	0.89
Spirit Rider	0.19	0.24	0.31	0.47	0.55
Stardust	0.18	0.23	0.25	0.43	0.73
Paradise	0.19	0.23	0.32	0.43	0.78
Bob Dole	0.19	0.25	0.28	0.35	0.75
SY Achieve CL2	0.18	0.26	0.25	0.54	1.33
SY Benefit	0.18	0.26	0.30	0.52	1.02
SY Rugged	0.13	0.23	0.23	0.39	0.73
1863	0.21	0.24	0.30	0.63	1.27
Joe	0.16	0.21	0.27	0.37	0.59
Larry	0.15	0.22	0.25	0.39	0.58
Oakley CL	0.14	0.21	0.28	0.37	0.43
Tatanka	0.12	0.22	0.24	0.38	0.66
Zenda	0.19	0.23	0.28	0.41	0.54
Differences among varieties	No	Yes	No	Yes	Yes
LSD	-	0.04	-	0.33	0.90

None of the varieties had yet reached first hollow stem as of March 21. However, with the recent rainfall events, hollow stem should develop quickly in the next few days. Varieties rapidly approaching the FHS were SY Achieve CL2, 1863, and SY Benefit. Producers should be monitoring their fields closely to avoid grazing past FHS. Most of the wheat varieties tested in a similar setting in Oklahoma have already reached the critical FHS length of 1.5 cm.

The intention of this report is to provide producers an update on the progress of FHS development in different wheat varieties. Producers should use this information as a guide, but it is extremely important to monitor FHS from an ungrazed portion of each individual wheat pasture to take the

decision of removing cattle from wheat pastures.

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## 2. Split fungicide treatments on wheat: Should producers consider an early application?

Fungicides are an effective way to reduce the risk of yield loss caused by leaf diseases on wheat in Kansas. Research continues to demonstrate that it is often possible to achieve high levels of disease control with a single fungicide applied between flag leaf emergence and heading growth stages. The yield response to this fungicide application is influenced by the level of disease risk (amount of disease and predicted weather conditions), variety resistance to the most threatening fungal diseases, yield potential of the crop, foliar fungicide efficacy, and other factors.

Fungicides can also be applied in a split application, with an early application made during “spring green-up” followed by a later application at flag leaf to early heading stage. That approach adds a little extra expense, and may or may not pay off compared to the single application approach, as the majority of the yield response is normally associated with the flag leaf application. It is also important to remember that fungicides will only protect the leaves present at time of application; thus, an application during jointing does not substitute for a flag leaf application, as any leaf that emerged after the application will not be protected.

When making split applications, the early application often uses a lower rate than the flag leaf/heading applications. While this lower rate helps to keep the product cost down, it also reduces residual life of the fungicide relative to applications made at the full-rate. With the prevalence of low-cost generic fungicides on the market now, some producers are using a full rate of fungicide for the early application. The full-rate of most fungicides provides about two weeks of good protection, followed by a third week of partial protection to the leaves present at the time of application. Using a full rate early, however, could have implications for the second, later application. Growers will need to select a product and rate that stays within the labeled limits on the amount of each active ingredient used in a single season. You don’t want an early fungicide application to remove the ability to apply your preferred product at flag leaf.

### Advantages and limitations of split applications

There are some advantages to making an early application. The advantages of early-season fungicide application include:

- **Low cost.** There is no additional cost for application if the fungicide is tank mixed with other products, such as liquid nitrogen fertilizer or herbicide. Often, however, the optimal timing for an early fungicide application is not until after the wheat has jointed – with one or two joints present. This is usually sometime in mid- to late-March in southern Kansas and a little later in northern Kansas. Topdressed nitrogen and many postemergence herbicides should be applied before this stage to be most effective, so the optimal timing of both applications may not match. If a separate trip is made for an early fungicide application, that adds to the cost.

Since the payoff for an early application is less certain than with later applications, it is perhaps best to consider using a low-cost generic fungicide for the early application and saving more expensive products, if desired, for the later application.

- **Provides suppression of early-season disease** caused by tan spot, powdery mildew, and

septoria leaf blotch (Figures 1 & 2) that overwinter locally in Kansas. For diseases like leaf rust and stripe rust (Figure 3), which are less likely to survive the winter in Kansas, the benefit of fungicides applied at green-up is more sporadic. The rust diseases typically blow into the state from Texas and Oklahoma during the spring, and often become established as the crop transitions from jointing to flag leaf emergence. If a field has hot spots of stripe rust at jointing or earlier, a fungicide application made at jointing could help suppress the developing epidemic. However, a second application will be needed to protect the flag leaves during the early stages of grain development.

The limitations of early-season fungicide application include:

- Leaves not present at the time of application will not be protected. Therefore, these applications will not control leaf rust or stripe rust epidemics that come in from the south at later stages of growth. The early applications are most effective when combined with a second, later application of a fungicide.
- Additional product cost may not pay off under some conditions, especially this growing season when the wheat prices are low. Remember, the second application does the heavy lifting in the dual-application approach. If capital resources are limited because of low prices, it may be best to invest your money where you are likely to see the largest yield response.

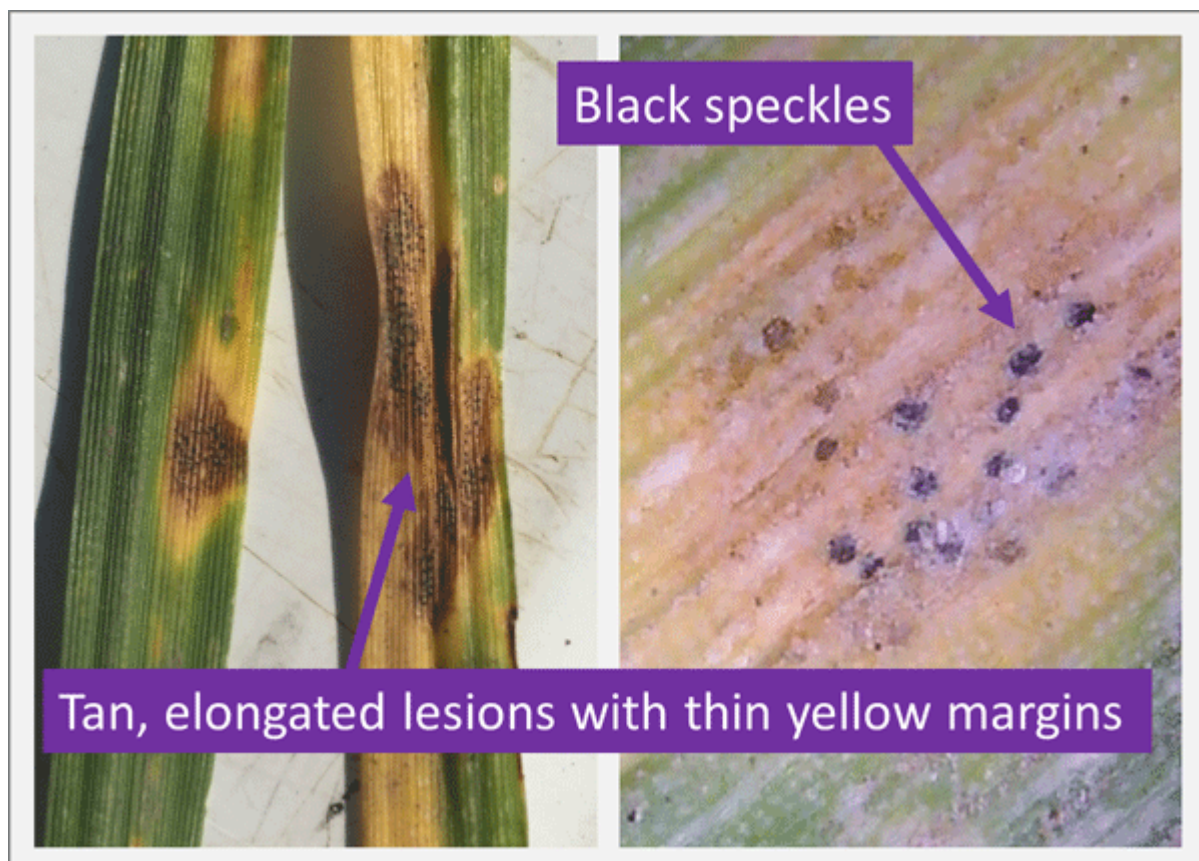
### **K-State research**

K-State test results of early, low-rate fungicide applications indicate this practice is most likely to be effective in continuous wheat grown in high-residue conditions that favor the local survival of many disease-causing fungi. The value of the early applications is diminished in other rotations, conventional tillage systems, or with varieties that are moderately resistant or resistant to the targeted diseases – usually tan spot or septoria leaf blotch, and powdery mildew. K-State has not tested the practice of making split applications using a full-rate of product at both times.





**Figure 1. Symptoms of tan spot on wheat. Lesions are tan, with yellow margins, and mature lesions often have a darkened spot in the center. Photos by Erick DeWolf, K-State Research and Extension.**





**Figure 2. Symptoms of septoria leaf blotch. Lesions are tan, elongated, with thin yellow margins. Black speckles in the center are key identifying features. Photos by Romulo Lollato, K-State Research and Extension.**



**Figure 3. Symptoms of stripe rust on wheat. Notice the blister-like lesions arranged in stripes. Photos by Erick DeWolf, K-State Research and Extension.**

### **Product rates and restrictions**

Producers considering the use of split applications must pay close attention to label restrictions. Every active ingredient in a fungicide has a maximum total amount that can be applied during the season.

For example, if an early application of a generic form of tebuconazole is applied at 4 oz/acre, a subsequent application of any fungicide containing tebuconazole alone or in combination with other ingredients (e.g. premix) around heading could put you over the limit (4.0 oz/acre) for the crop season.

Thus, be sure to read the label to determine the maximum amount of a chemical that can be applied in a single season and the exact amount of a chemical(s) that is in a fungicide.

For information on the efficacy of different foliar fungicide products, refer to K-State Research and Extension publication: *Foliar Fungicide Efficacy Ratings for Wheat Disease Management 2017*, EP130.

## Conclusions

The main conclusions we can draw from recent studies in Kansas and Oklahoma are:

- In K-State studies, the greatest average profit has come from the flag leaf application of fungicides. Fungicides applied prior to jointing are less likely to result in a positive profit.
- The likelihood of profit for an early-season fungicide application is greatest for susceptible varieties in continuous wheat systems with a high level of surface wheat residue,
- Fields with hot-spots of tan spot, septoria leaf blotch, and stripe rust prior to flag leaf emergence are candidates for an early fungicide application, provided environmental conditions are conducive for further disease development and yield potential of the crop. These applications are often most effective when made around the jointing stages of growth.

For information on disease susceptibility of wheat varieties, see K-State Research and Extension publication *Wheat Variety Disease and Insect Ratings 2017*, MF991.

For information on assessing the need for wheat foliar fungicide, refer to K-State Research and Extension publication [Evaluating the Need for Wheat Foliar Fungicides](#), MF3057.

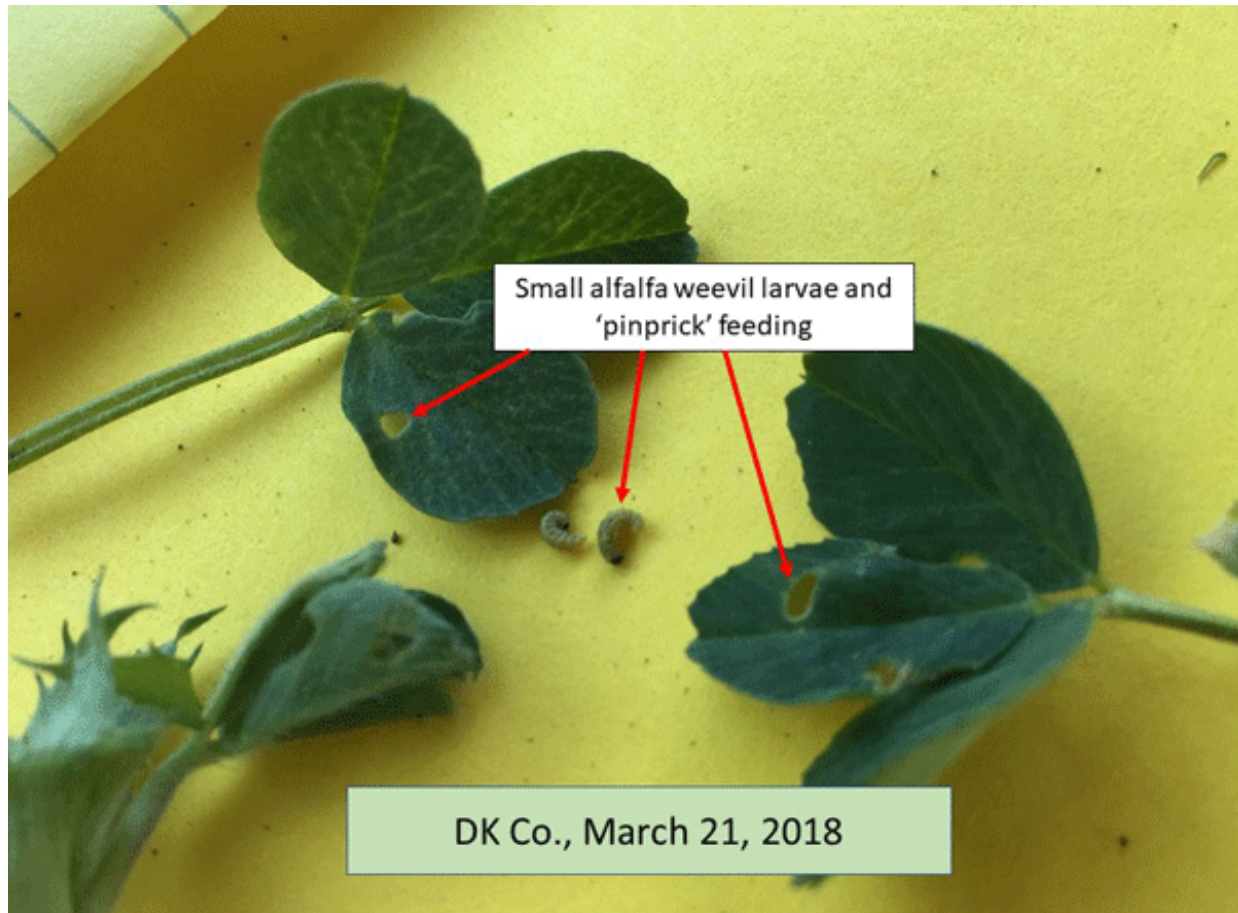
Another publication providing good information, from which a few excerpts were used in this article, is Oklahoma State University's [Split Versus Single Applications of Fungicides to Control Foliar Wheat Diseases](#), PSS-2138.

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### 3. Alfalfa weevil update - Still too early to apply treatment

As indicated by the growing degree day predictive system for alfalfa weevils available on the Kansas Mesonet, <http://mesonet.k-state.edu/agriculture/degreedays/>, eggs should be hatching and some small 'pinprick' sized holes will be appearing in alfalfa leaves. That is exactly what is happening in north central Kansas this week.



It is too early to apply an insecticide to control alfalfa weevils as eggs may continue to hatch for the next 2-4 weeks, depending upon the temperatures. Cooler temperatures slow development while warmer temperatures speed up development. Anytime the average daily temperature reaches 48 degrees F or above, the eggs are hatching and larvae are feeding. Many fields do not currently have much foliage, due to cool temperatures and dry conditions, so there isn't much leaf area to accept spray and thus, residual activity will be reduced. Treatment thresholds generally are when infestation levels reach between 33-50%, or when there is one larva per 2 or 3 stems. This can occur very quickly, so monitoring should be conducted every 2-4 days. If the treatment threshold is reached, and the determination is made to treat with an insecticide labeled for alfalfa weevil control, please remember to use sufficient carrier to get good coverage throughout the entire canopy. For more information please refer to the Alfalfa Insect Management Guide: <https://www.bookstore.ksre.ksu.edu/pubs/mf809.pdf>

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#### 4. Can dry soils affect anhydrous ammonia applications in Kansas?

Many producers are already starting with anhydrous application for summer crops this spring, however dry soils can be a concern. When the soil is dry, will it be able to hold anhydrous ammonia or will some or most of the ammonia be lost shortly after application?

There are three factors that come into play:

**Chemical** - Ammonia ( $\text{NH}_3$ ) needs to react with water shortly after application in order to convert into ammonium ( $\text{NH}_4^+$ ), which is the molecule that can adhere to clay and organic matter in the soil. Ammonia is very soluble in water. After it is placed in the soil,  $\text{NH}_3$  reacts with water in the soil to form ammonium-N ( $\text{NH}_4^+$ ), which is retained on the soil cation exchange capacity sites. This process takes a little time – it does not occur immediately upon contact with the soil. The main controlling factors in the conversion of  $\text{NH}_3$  to ammonium-N are soil temperature, soil moisture, and soil pH. The higher the soil temperature and the wetter the soil, the more rapid the conversion occurs. If the ammonia does not react with water, it will remain as a gas that could escape from the soil. Also, equilibrium between  $\text{NH}_3$  and  $\text{NH}_4^+$  is affected by soil pH. More  $\text{NH}_3$  will remain unconverted in the soil longer at higher application rates and at higher soil pH levels.

**Physical** - Dry soils may be cloddy, with large air spaces where the soil has cracked. This can allow the gas to physically escape into the air before it has a chance to be converted into ammonium. Getting the soil sealed properly above the injection slot can also be a problem in dry soils.

**Application depth** - The deeper the ammonia is applied, the more likely the ammonia will have moisture to react with, and the easier the sealing.

So, can anhydrous ammonia be applied to dry soils?

The answer is **yes** - as long as the ammonia is applied deep enough to get it in some moisture and the soil is well sealed above the injection slot. If the soil is dry and cloddy, there may be considerable losses of ammonia within just a few days of application if the soil is not well sealed above the injection slot and/or the injection point is too shallow.

Producers should be able to tell if anhydrous is escaping from the soil during application or if the ammonia isn't being applied deeply enough. If ammonia can be smelled, the producer should either change the equipment setup to get better sealing or deeper injection, or wait until the soil has better moisture conditions. It is important to keep in mind that despite the current drought in Kansas, moisture can still be found at 6 inch depth in most soils/regions.

In short, producers can minimize this potential loss problem by:

- Applying the anhydrous ammonia at the proper depth (at least 6 to 8 inches in 30 to 40 inch spacings).
- Using covering disks behind the knives or sealing wings ("beaver tails") on the knives.
- Apply the anhydrous ammonia at least 1 to 2 weeks before planting. This waiting period should be even longer if soils are dry.



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## 5. Optimal corn seeding rate recommendations

The optimal corn seeding rate for any situation will depend on the anticipated environment and how the hybrid responds to that environment. Thus, optimum seeding rate depends on the hybrid (genotype, G) and the interaction with the environment (E), researchers term this as the G x E interaction. Producers can look back to their corn crop from the previous growing season, or wait until the current growing season is nearly complete, and evaluate whether the population they used was adequate. Another factor that sometimes we neglect to mention is the effect of management practices (M). Planting date, row spacing, and crop rotations can also exert some influence on the yield response to the plant population factor.

Individual hybrids can respond differently, but the following guidelines may help in deciding if current seeding rates need to be adjusted.

- If more than about 5% of the plants are barren or if most ears have fewer than 250 kernels per ear, the population may be too high.
- If there are consistently more than 600 kernels per ear or if most plants have a second ear contributing significantly to grain yield, the population may be too low. Of course the growing conditions will influence ear number and ear size as well, so it is important to factor in the growing conditions for that season when interpreting these plant responses.
- In addition to the growing conditions, nutrient status can also exert some influence on the final number of grains per ear. For example, severe nitrogen (N) deficiency will have a high impact on the final number of grains, ear size and ear number.

Don't be too concerned if a half-inch or so of the ear tip has no kernels. If kernels have formed to the tip of the ear, there may have been room in that field for more plants contributing to grain yield. Again, "tipping back" will vary with the G x E x M interaction. Potential ear size and potential number of kernel (1,000-1,200 per ear) are set before silking, but the actual final number of kernels is not determined until after pollination and early grain fill due to relative success of fertilization and degree of early abortion.

Always keep the long-term weather conditions in mind. In a drought year, almost any population is too high for the available moisture in some areas. Although it's not a good idea to make significant changes to seeding rates based only on what has happened recently, it is worthwhile taking into consideration how much moisture there is currently in the soil profile and the long-term forecasts for the upcoming growing season.

Making a decision on whether to keep seeding rates at your usual level or cutting back somewhat this year if the soil profile is drier-than-normal is a little like the famous line in the movie Dirty Harry: "Do I feel lucky?" If you think weather conditions will be more favorable for corn this year than the past years, stay about in the middle to upper part of the range of seeding rates in the table below. If you do not think growing conditions will improve enough to make up for dry subsoils, you might want to consider going toward the lower end of the range of recommended seeding rates, with the warning that if growing conditions improve, you will have limited your top-end yield potential.

Optimal seeding rates may need to be adjusted for irrigated corn if fertilizer or irrigation rates are sharply increased or decreased. For example, research at the Irrigation Experiment Field near Scandia has shown that if fertilizer rates are increased, seeding rates also have to be increased to realize the maximum yield benefit. Consult seed company recommendations to determine if seeding rates for specific hybrids should be at the lower or upper end of the recommended ranges for a given environment.

The recommended planting rates in the following tables attempt to factor in these types of questions for the typical corn growing environments found in Kansas. Adjust within the recommended ranges depending on the specific conditions you expect to face and the hybrid you plan to use.

Recommend planting rates are from the K-State Corn Production Handbook:

<http://www.ksre.ksu.edu/library/crpsl2/c560.pdf>

**Table 1. Suggested dryland corn final populations and seeding rates**

Area	Environment	Final Plant Population	Seeding Rate*
		(plants per acre)	
Northeast	100-150 bu/a potential	22,000-25,000	26,000-29,500
	150+ potential	24,000-28,000	28,000-33,000
Southeast	Short-season, upland, shallow soils	20,000-22,000	23,500-26,000
	Full-season bottom ground	24,000-26,000	28,000-30,500
North Central	All dryland environments	20,000-22,500	23,500-26,500
South Central	All dryland environments	18,000-22,000	21,000-26,000
Northwest	All dryland environments	16,000-20,000	19,000-23,500
Southwest	All dryland environments	14,000-20,000	16,500-23,500

**Table 2. Suggested irrigated corn final populations and seeding rates**

Environment	Hybrid Maturity	Final Plant Population	Seeding Rate*
		(plants per acre)	
Full irrigation	Full-season	28,000-34,000	33,000-40,000
	Shorter-season	30,000-36,000	35,000-42,500
Limited irrigation	All	24,000-28,000	28,000-33,000

Kansas State University Department of Agronomy

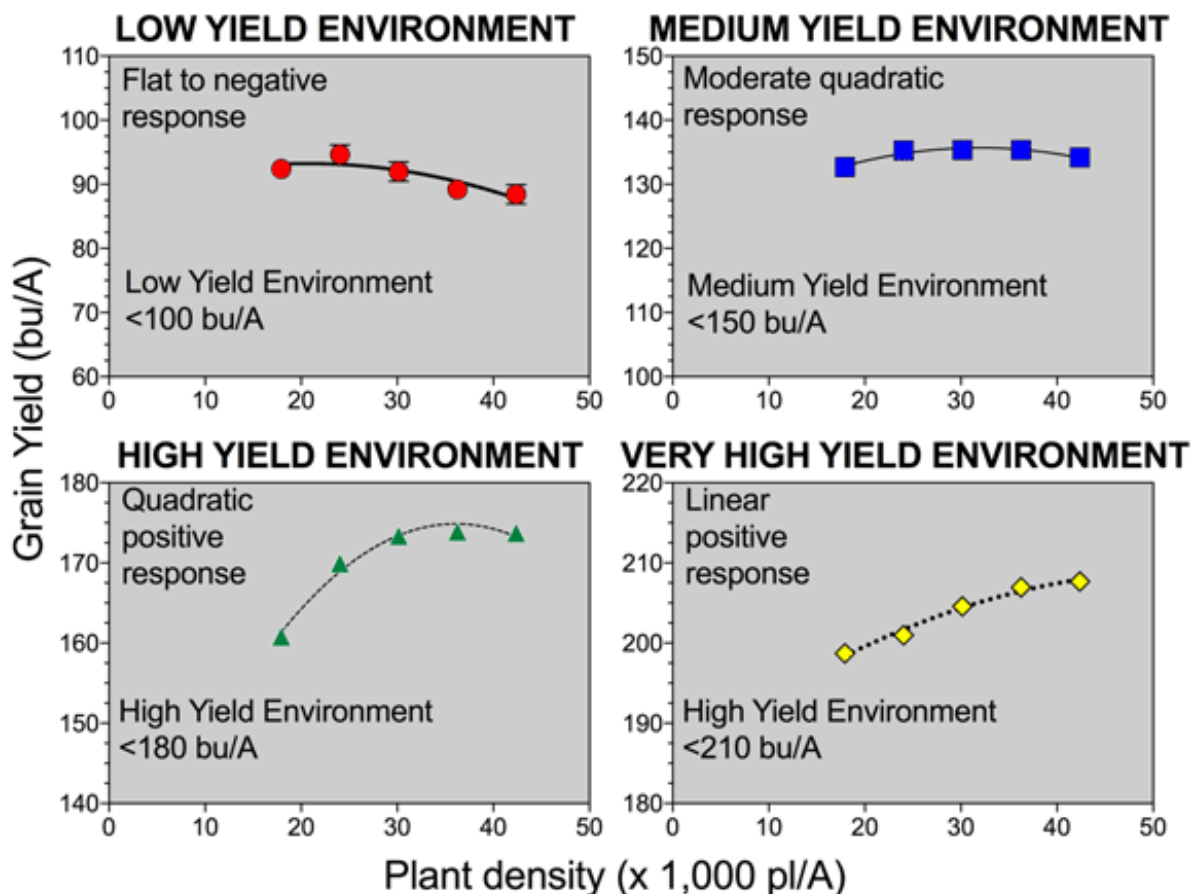
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[www.agronomy.ksu.edu](http://www.agronomy.ksu.edu) | [www.facebook.com/KState.Agron](https://www.facebook.com/KState.Agron) | [www.twitter.com/KStateAgron](https://www.twitter.com/KStateAgron)

\* Assumes high germination and that 85 percent of seeds produce plants. Seeding rates can be reduced if field germination is expected to be more than 85%.

### New Research on Corn Seeding Rates

An intensive review of a large database from DuPont Pioneer (2000-2014 period) was utilized to synthesize yield response to plant population under varying yield environments (<100 bu/acre to >200 bu/acre). Overall, across the four different hybrids evaluated, yield response to plant population depended on the final yield environment (Figure 1). In yield environments below 100 bu/acre, yield response to plant population was slightly negative. Yield response to plant population tended to be flat when yield environment ranged from 100 to 150 bu/acre; positive and quadratic with the yield environment improving from 150 to 180 bu/acre; and lastly, increasing almost linearly with increasing plant populations when the yield environment was more than 200 bu/acre (Figure 1).



**Figure 1. Corn grain yield response to plant density in four different productivity environments, a) low yielding <100 bu/acre; b) medium yielding 100-150 bu/acre; c) high yielding 150-180 bu/acre; and d) very high yielding 190-210 bu/acre (Assefa, Ciampitti et al., 2016, Crop Science Journal).**

As a disclaimer, “agronomically” optimum plant population does not always coincide with the

“economically” optimal plant population. Thus, farmers should consider this aspect when deciding the final seeding rate for corn. In addition, final seeding rate depends on the environment, hybrid utilized, and production practices (e.g., planting date). Producers should consider looking at the previous crop to investigate if the seeding rate previously used was adequate for their respective yield environments.

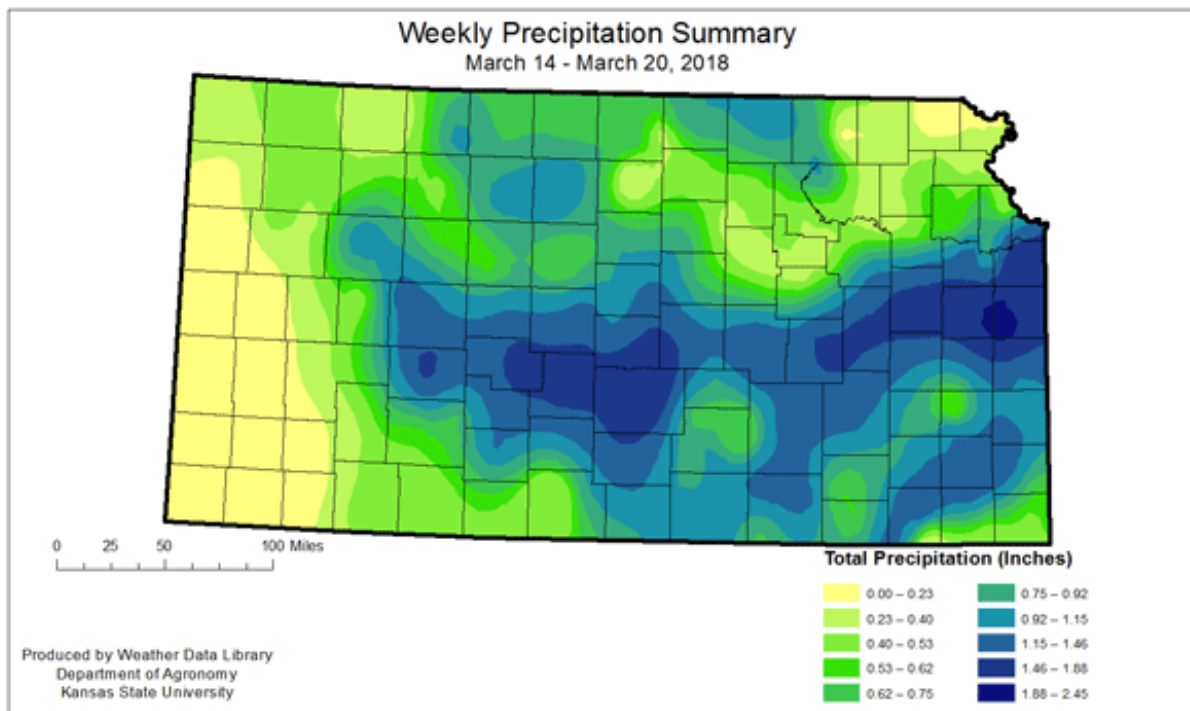
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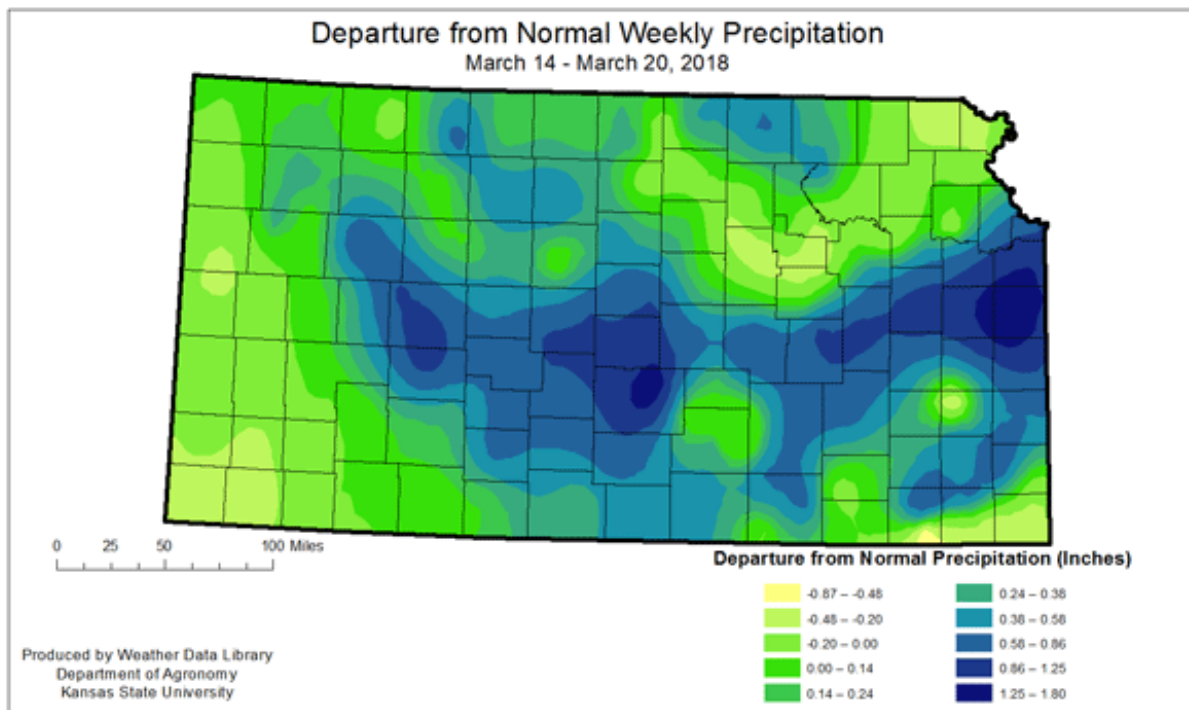
## 6. Kansas drought update - March 20, 2018

### Current status

Moisture finally arrived for many areas in Kansas. State-wide, the precipitation average 0.74 inches or 148 percent of normal. This is the most widespread precipitation that we have seen so far this year. The South Central Division fared the best with an average of 1.24 inches, or 197 percent of normal. As the only division with below-normal precipitation for the week, the Southwest Division had the lowest average at 0.28 inches or 85 percent of normal. The deficit for that division was - 0.05 inches. Unfortunately, the extreme far southwest corner missed out on the rain, with amounts of zero to less than a 10th of an inch. The greatest weekly total for the National Weather Service Cooperative Stations was 2.68 inches at Osawatomie in Miami County. The highest weekly total at a Community Collaborative Rain Hail and Snow network station was 2.81 inches at Hutchinson 2.2 SSW, Reno County. For the Kansas Mesonet, the greatest total was 1.97 inches at Hutchinson 10SW, in Reno County. More precipitation came as snow this week, with the greatest total at Ransom 2NE, Ness County, where they recorded 3 inches.

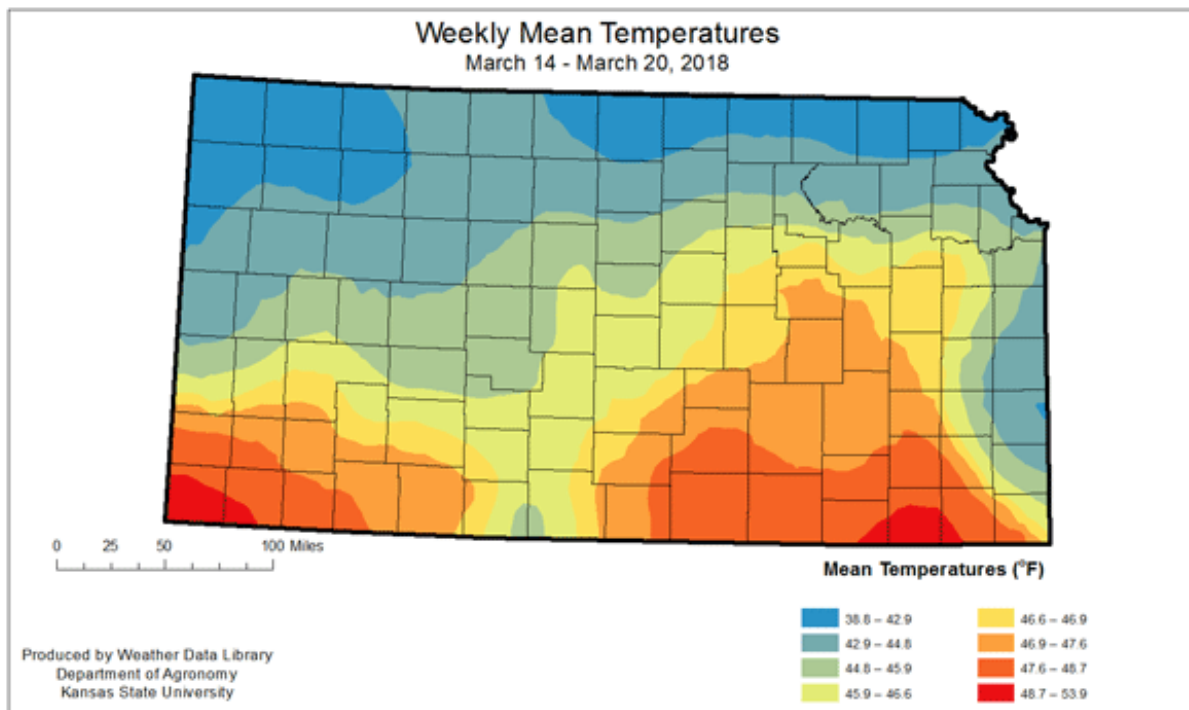


**Figure 1. Weekly total precipitation for Kansas during the week of March 14 - 20 via Cooperative Observer (COOP) and Kansas Mesonet.**

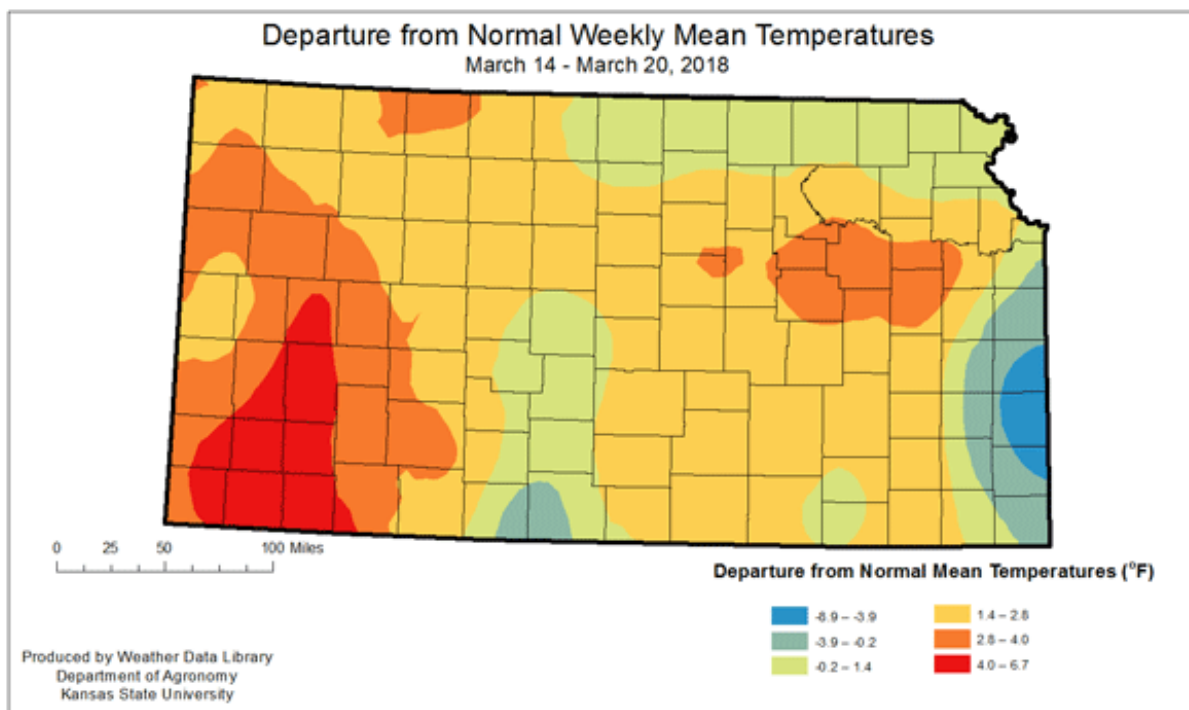


**Figure 2. Departures of weekly precipitation from normal for Kansas during the week of March 14 - 20 via Cooperative Observer (COOP) and Kansas Mesonet.**

Temperatures were on the milder side, although lows did drop into the teens in all divisions. The statewide average temperature was 45.5 degrees F, or 1.8 degrees warmer-than-normal. The Northeast Division came closest to normal with an average of 43.4 degrees F, or 0.5 degrees warmer-than-normal. The Southwest Division had the largest departure, with an average of 47.6 degrees F or 3.1 degrees warmer-than-normal. Both the warmest and the coldest readings were recorded in the West Central Division: highest maximum temperature was 85 degrees F at Healy, Lane County, on the 17th; lowest minimum temperature was 12 degrees F at Tribune 1W, Greeley County, on the 20th.

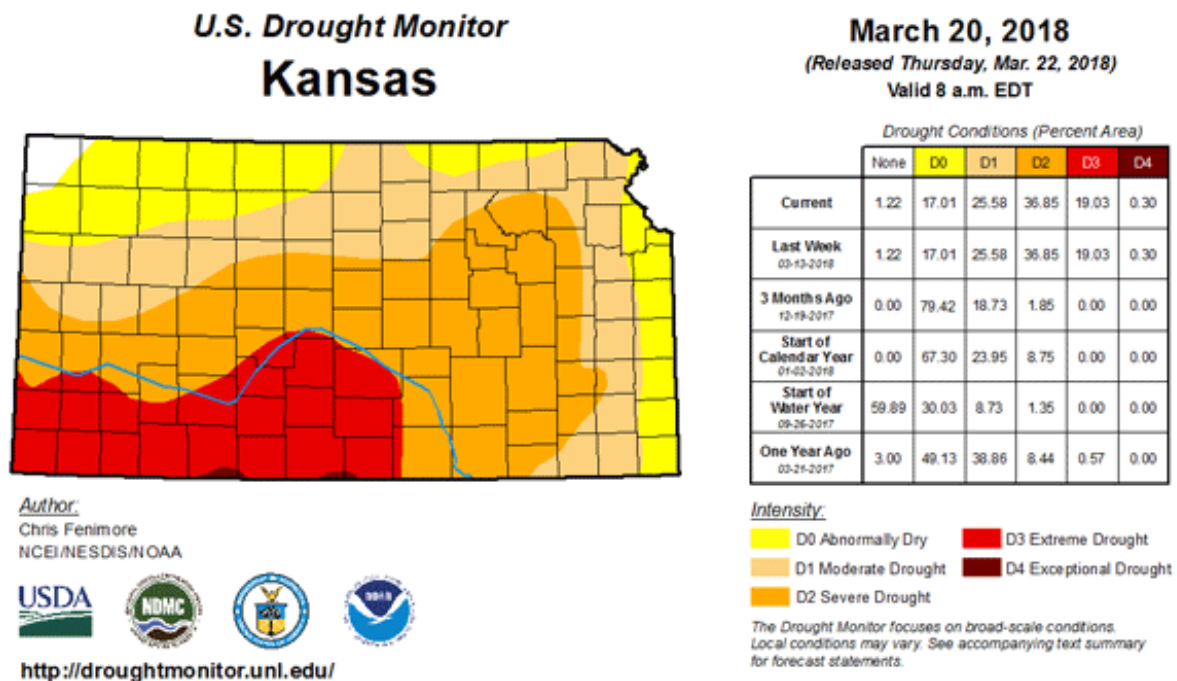


**Figure 3. Weekly mean temperatures for Kansas during the week of March 14 – 20 via Cooperative Observer (COOP) and Kansas Mesonet.**

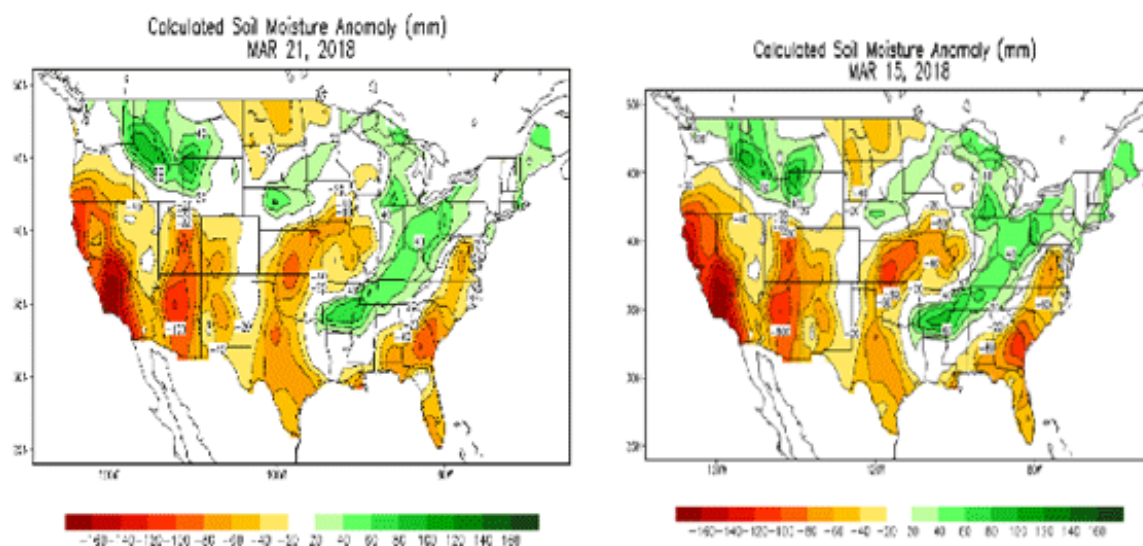


**Figure 4. Departures of weekly mean temperatures for Kansas during the week of March 7 - 13 via Cooperative Observer (COOP) and Kansas Mesonet.**

The recent rainfall didn't reduce the drought in Kansas (Figure 5). The difference in soil moisture anomalies from last week to this week (Figure 6) shows how little the moisture received changed the overall short fall. It was enough to prevent expansion, but not enough to see improvements.



**Figure 5. Current drought from the Drought Monitor.**



**Figure 6. Difference in soil moisture anomaly (Climate Prediction Center).**

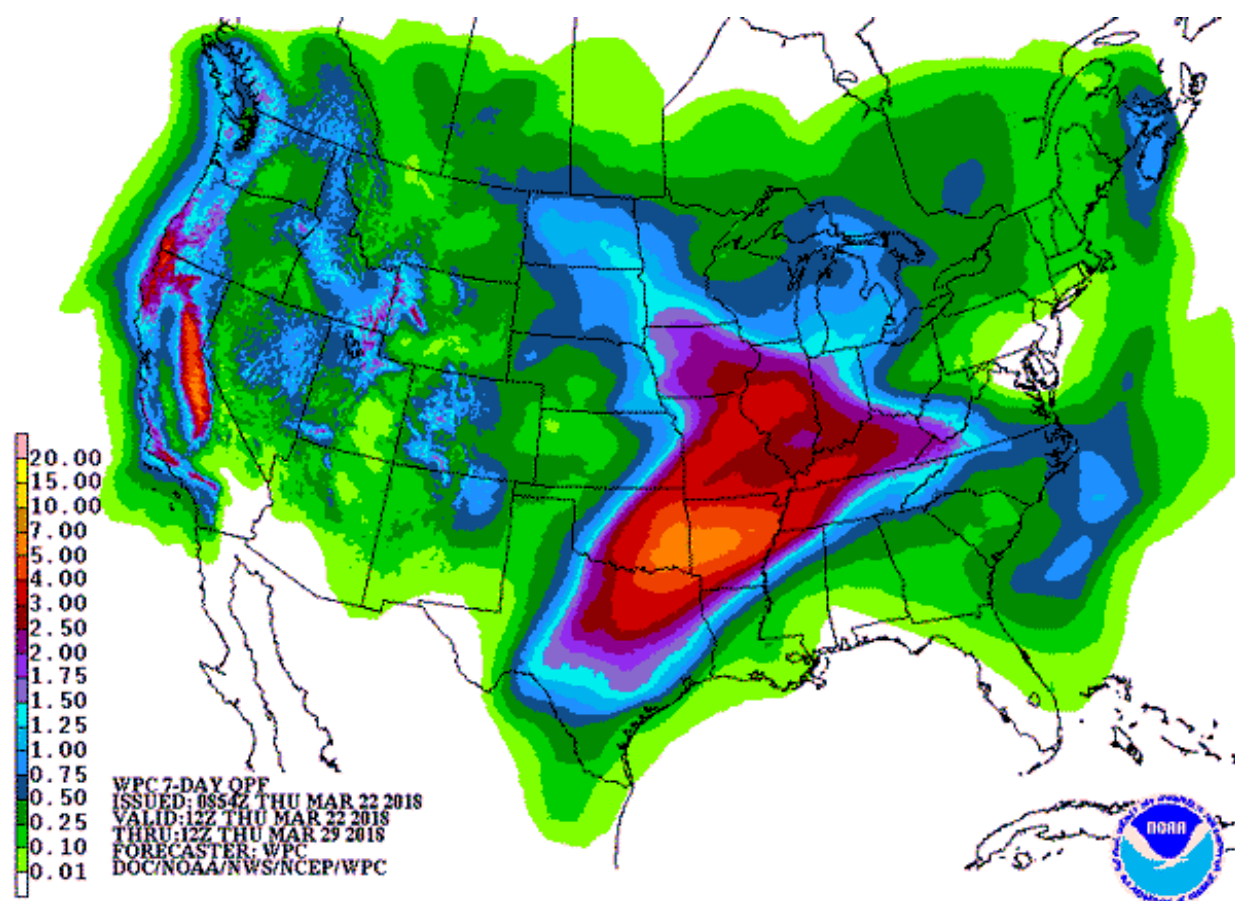
#### Future precipitation and temperature outlook

The quantitative precipitation forecast for the 7-day period, ending on March 31st, is more encouraging. The areas with highest expected amounts are along the Kansas/Missouri border, particularly in the southeast corner of the state (Figure 7). That region may see up to two inches. However, amounts drop sharply as you head west. From central Kansas to the southwest, the accumulation is expected to be less than a quarter of an inch.

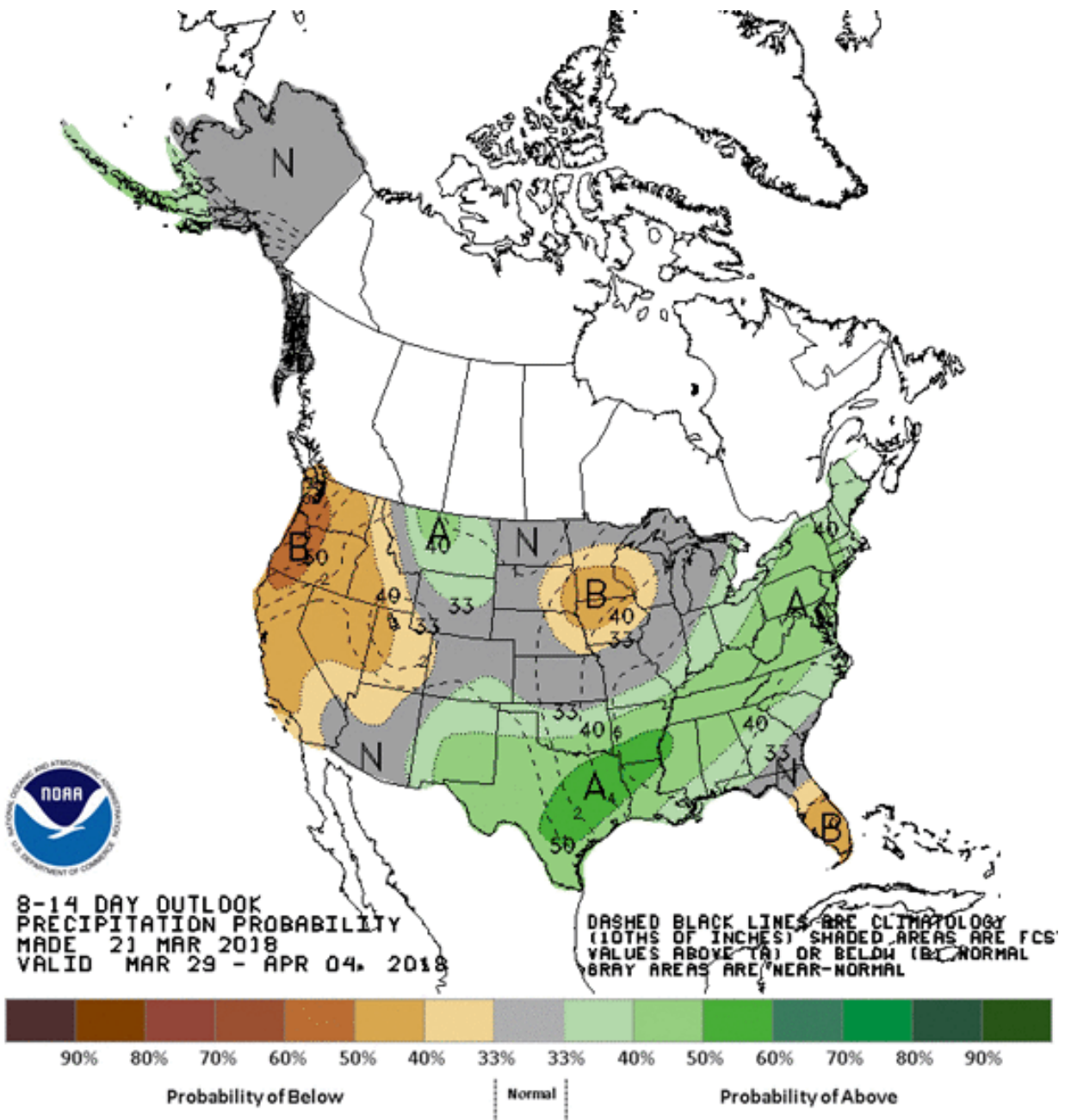
The 8 to 14-day precipitation outlook (Figure 8) indicates a slightly increased chance of above-normal precipitation in the eastern third of the state, but areas that are in extreme drought are likely to see below-average precipitation.

The temperature outlook is neutral for all divisions except the Southwest, where there is an increased chance of warmer-than-normal statewide, with the strongest signal in the southern portions of the state.





**Figure 7. Quantitative Precipitation Forecast for week ending March 31, 2018**



**Figure 8. 8-10 day Precipitation Outlook for period ending April 4, 2018 (Climate Prediction Center)**

Additional information can be found in the latest Agronomy eUpdate at [https://webapp.agron.ksu.edu/agr\\_social/eu.throck](https://webapp.agron.ksu.edu/agr_social/eu.throck)

Also on the Kansas Climate website under weekly maps or drought reports <http://climate.k-state.edu/maps/weekly> and <http://climate.k-state.edu/reports/weekly/2018/>.

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## 7. 2018 In-Depth Wheat Diagnostic School, May 9-10 in Garden City

K-State Research and Extension will hold the 2018 Wheat In-Depth Diagnostic School on May 9th and 10th at the Southwest Research-Extension Center, 4500 E Mary Street, Garden City. The hours on May 9 are 9 a.m. to 4:30 p.m. On May 10, the hours are 8 a.m. to 2 p.m.

Registration cost is \$140 before May 1 and \$180 after May 1, including walk-ins. Breakfast and lunch is included with your registration along with an extensive take-home field book.

The latest techniques and technology in agriculture are within your reach! Join us for this year's In-Depth Wheat Diagnostic School to learn from KSRE experts and discover cutting edge breakthroughs in wheat production.

Topics to be covered this year include:

- Wheat growth and development
- Weed management
- Disease identification and management
- Growing 100 bushel dryland wheat in western KS
- Irrigation technology
- Wheat fertilizer management
- Insect management in wheat and canola
- Canola production
- Weed identification
- Production cost of wheat and canola
- Farmer's success story of growing canola in western KS

Speakers at the event include:

- Romulo Lollato
- Stu Duncan
- Dallas Peterson
- Erick DeWolf
- Horton Seed Services representative
- Jonathan Aguilar
- Ajay Sharda
- Dorivar Ruiz Diaz
- AJ Foster
- Sarah Zukoff
- Mike Stamm
- John Holman
- Kevin Donnelly
- Monte Vandever
- Tyson Good

This event will also offer Certified Crop Advisory and Commercial Applicator credits.

Interested individuals can register online at <http://www.global.ksu.edu/wheat-diagnostic>

For registration questions, please contact [registration@ksu.edu](mailto:registration@ksu.edu) or call 785-532-5569





## 2018 In-Depth Wheat Diagnostic School

9:00 a.m. – 4:30 p.m. May 9<sup>th</sup> *and* 8:00 a.m. – 2:00 p.m. May 10<sup>th</sup>

### Location

K-State SW Research-Extension Center  
4500 E Mary Street  
Garden City, KS 67846

### Cost:

\$140 before May 1; \$180 for registrations after May 1 and walk-ins. Breakfast & lunch is included with registration and will be provided.

*The latest techniques and technology in agriculture are within your reach. Join us for this year's Wheat Diagnostic School to learn from K-State Research and Extension experts and discover the cutting edge breakthrough in wheat production. Registration is \$140 before May 1, and includes access to renowned speakers and an extensive take-home field book.*

### Topics

- Wheat growth and development
- Weed management
- Disease identification & management
- Growing 100 bu. Dryland wheat in Western KS
- Irrigation Technology
- Fertilizer Application Technology
- Wheat Fertilizer management
- Insect Management Wheat & Canola
- Canola Production
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or

call 785-532-5569.

Kansas State University is committed to making its services, activities and programs accessible to all participants. If you have special requirements due to a physical, vision, or hearing disability, contact AJ Foster, 620-275-9164.

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## 8. Keep spreading the word about the Extension Agronomy eUpdate!

We would like to remind our readers about all the great delivery options for receiving the Agronomy eUpdate, and to encourage all recipients to share this valuable publication with as many interested people as possible.

If you are on our email list, you receive the weekly eUpdate in its entirety along with any special editions that we send out in between regular issues. If you follow @KStateAgron on Twitter, you will receive a tweet with a link to the weekly eUpdate plus additional tweets during the week about individual eUpdate articles and special editions. Some of you may receive the eUpdate by both email and Twitter.

Every now and then we hear from a producer, consultant, or extension agent who just starting getting the Agronomy eUpdate by email or via Twitter and wished they had known about it sooner. You can help! We encourage all eUpdate recipients to promote the eUpdate to interested parties and to forward or retweet it to your email lists and followers.

We believe, and we've heard from many others who agree, this weekly electronic newsletter is the best of its kind in the world! And it's free. We'd like everyone to take advantage of our fantastic product, and give us your feedback if you'd like.

To get on our email list to automatically receive the eUpdate as soon as it is released, contact either:

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785-532-5776

And don't forget to follow us on Twitter at: [twitter.com/KStateAgron](https://twitter.com/KStateAgron)

Thanks to all our readers!

Gary Pierzynski, Department Head and University Distinguished Professor  
[gmp@ksu.edu](mailto:gmp@ksu.edu)

## 9. 2017 Census of Agriculture - It's not too late to be counted!

Kansas farmers and ranchers still have time to be counted in the 2017 Census of Agriculture, according to the U.S. Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS). Although the first deadline has passed, NASS will continue to accept Census information through the spring to get a complete and accurate picture of American agriculture that represents all farmers and ranchers.

"We thank everyone who has completed their Census to date. Kansas currently has a return rate of just 55 percent of the Census questionnaires mailed to producers last December," said Doug Bounds, Kansas State Statistician. "A lot is at stake if producers are not represented in this data. Census data have and will continue to influence important decisions for American agriculture. The data will affect every operation and every farming community at some point, whether it be through farm policy, disaster relief, insurance or loan programs, infrastructure improvements, or agribusiness setup. There is accuracy and strength in numbers, which is why NASS is committed to giving producers every opportunity to respond."

Federal law mandates that everyone who received the 2017 Census of Agriculture questionnaire complete it and return it even if not currently farming. NASS will continue to follow-up with producers through the spring with mailings, phone calls, and personal visits. To avoid these additional contacts, farmers and ranchers are encouraged to complete their Census either online at [www.agcounts.usda.gov](http://www.agcounts.usda.gov) or by mail as soon as possible. Responding online saves time by skipping sections that do not apply and automatically calculating totals. The online questionnaire is accessible on desktops, laptops, and mobile devices.

For more information about the 2017 Census of Agriculture, visit [www.agcensus.usda.gov](http://www.agcensus.usda.gov). For questions or assistance filling out the Census, call toll-free (888) 424-7828.

