Issue 568

K-STATE Research and Extension

Extension Agronomy

eUpdate

05/06/2016

These e-Updates are a regular weekly item from K-State Extension Agronomy and Steve Watson, 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 Steve Watson, 785-532-7105 swatson@ksu.edu, or Curtis Thompson, Extension Agronomy State Leader and Weed Management Specialist 785-532-3444 cthompso@ksu.edu.

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1. Joe: New hard white wheat variety from K-State

A new K-State variety producers will see this year in the K-State Winter Wheat Performance Tests and at various wheat field days and tours is "Joe." This hard white wheat variety was named after Joe Martin, retired wheat breeder from K-State's Agricultural Research Center-Hays.

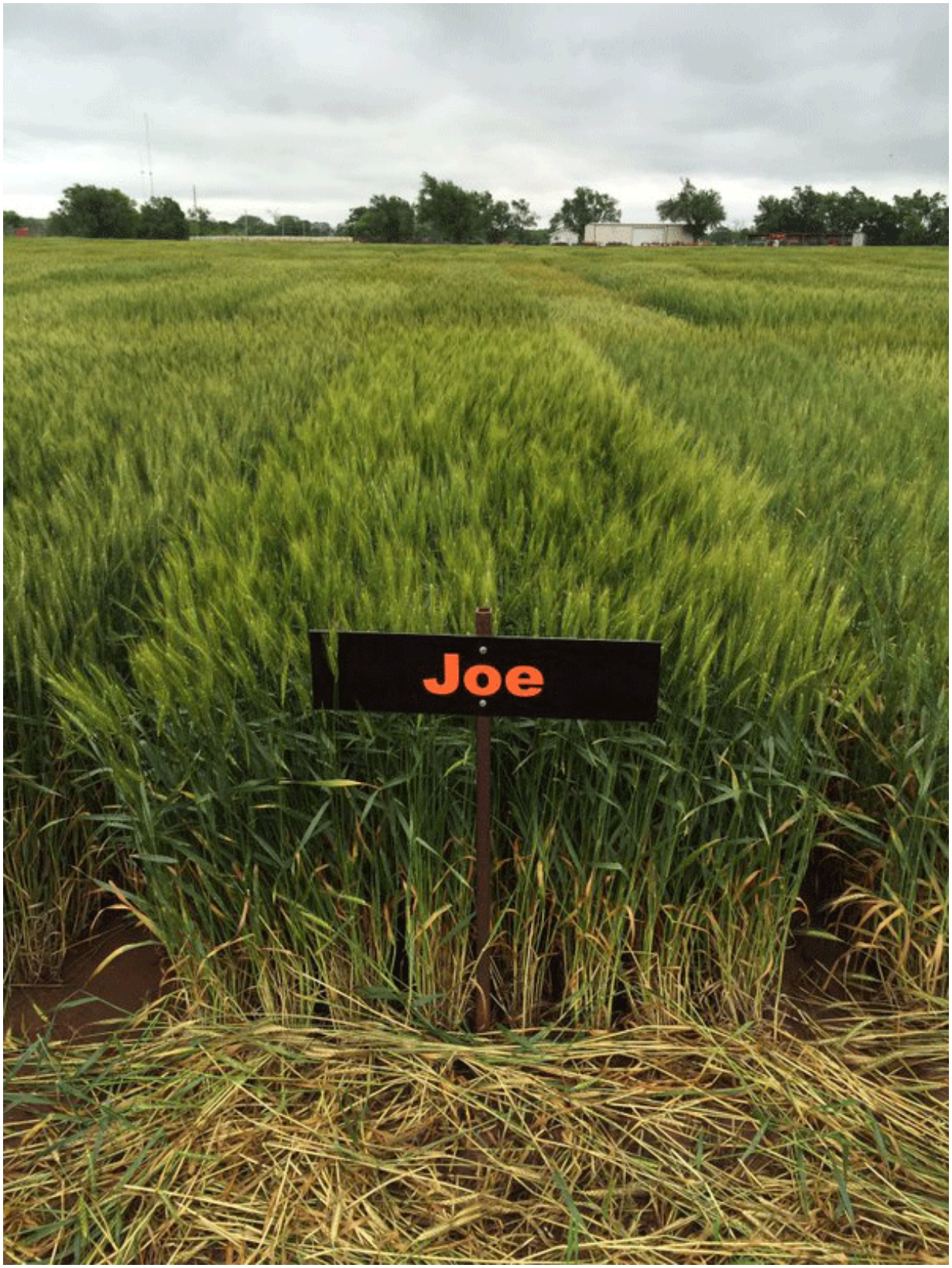

Figure 1. New K-State hard white winter wheat variety Joe. Photo by Bryson Haverkamp, Kansas Wheat Alliance.

The experimental number of Joe was KS11HW39-5-4. Joe was selected from a two-way cross of "KS04HW10-3/KS04HW119-3." In the pedigree, both KS04HW101-3 and KS04HW119-3 are hard white experimental lines developed by the K-State wheat breeding program at Hays. KS04HW101-3 had Jagger and Arlin in its pedigree while KS04HW119-3 was derived from a backcross of "Trego*2/CO960293".

Joe has performed very well in western Kansas and has a significant increase in yield potential over currently grown varieties. Averaged over three years (2013 to 2015) of dryland testing across western Kansas, yields of this line were about 16% higher than Danby and about 33% higher than TAM 111 (Danby and TAM 111 are two of the most adapted hard white and hard red wheat varieties, respectively, in western Kansas). In the 2015 Kansas Wheat Performance Test, the average yield of Joe ranked No. 1 across dryland testing sites in western Kansas and was at least 5% higher than all other varieties in the trials. Joe has also been tested under irrigation in Colby, Kansas, for the last three years. Yields averaged 103.7 bu/acre, which was about 19% higher than Danby and 27% higher than TAM 111.

Joe has very good resistance to the three most important diseases in western Kansas: wheat streak mosaic virus, stripe rust, and leaf rust. It carries the *WSM2* gene for wheat streak mosaic virus resistance. Field testing showed that Joe has very good resistance to both the 2010 and 2012 races of stripe rust. It is moderately susceptible to soilborne mosaic virus and is susceptible to Hessian fly.

In general, Joe has better white and whole flour baking quality than Danby. Its milling quality is comparable to Danby. It has good test weight (about 61 lb/bushel).

Joe is medium late and medium tall. It has good straw strength and good tolerance to grain shattering. It is moderately susceptible to pre-harvest sprouting.

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2. K-State advanced experimental wheat lines set for possible release in 2016

In the 2016 K-State Winter Wheat Performance Tests, and at some wheat field days and tours the next two months, producers will be able to see three advanced experimental lines from K-State. The following information describes these experimental lines and their proposed names if they are approved for release in the summer of 2016. Seed increase of all these lines has been good and they will be ready for release if approved by the K-State variety selection committee, according to Daryl Strouts, CEO of Kansas Wheat Alliance.

KS060143K-2 (proposed name: "Larry")

At some field day and tour locations, signs for this line may read "KS060143K-2" while at other locations the signs may read "Larry," the proposed name for this line if it is released. For now, it's best to refer to it as KS060143K-2. The name "Larry" honors Larry Patton who was a long-time technician in the corn and wheat breeding programs at K-State.

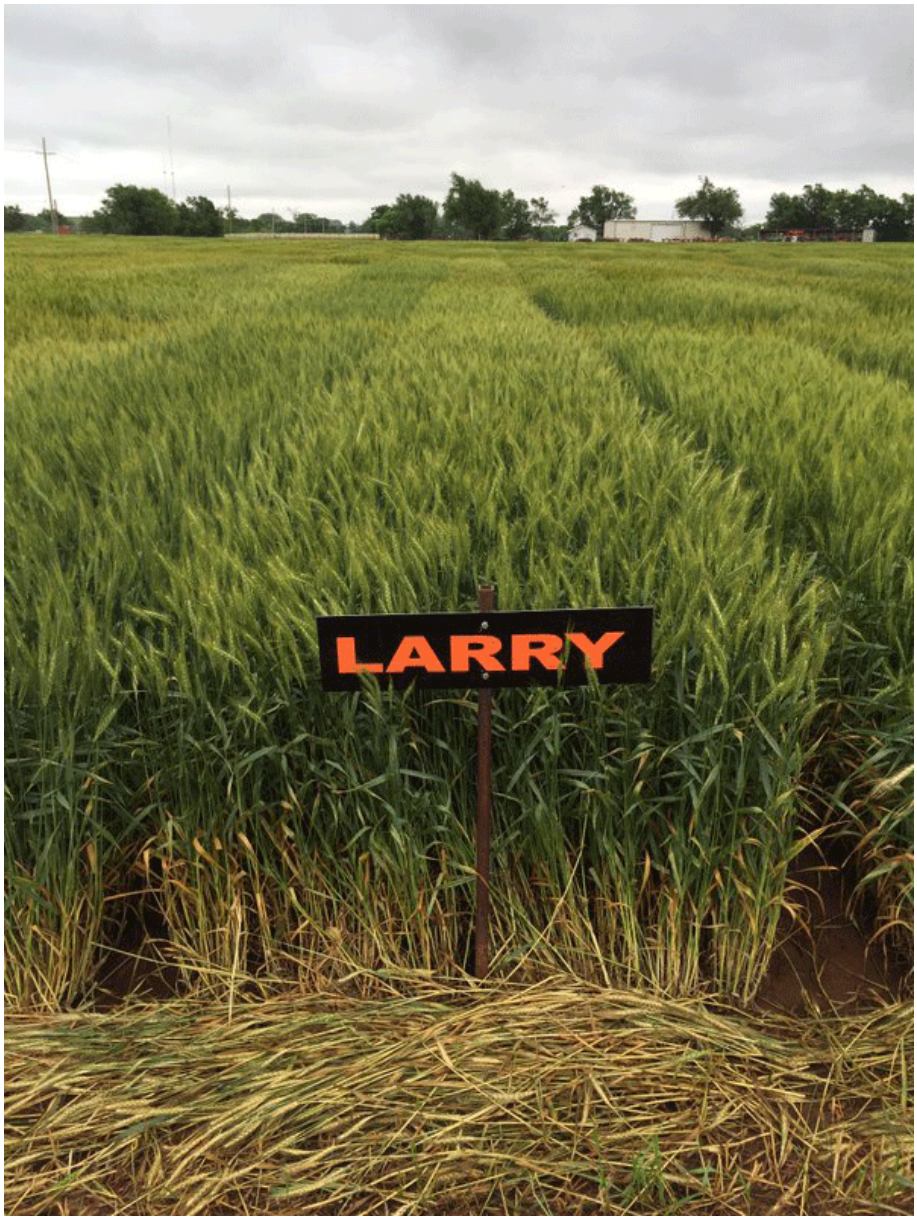

Figure 1. K-State experimental line KS060143-2 (proposed name “Larry” if officially released). Photo by Bryson Haverkamp, Kansas Wheat Alliance.

The pedigree of KS060143K-2 is: Overley sib//Karl 92 *2/Kakatsi/3/KS89180B-2-1-1/CMSW89Y267//X921012-A-27-1. The pedigree contains a CIMMYT spring wheat (Kakatsi) and a facultative CIMMYT wheat derived from a spring x winter cross (CMSW89Y267).

It is expected to be well-adapted statewide. KS060143K-2 has medium-early maturity. It has performed very well across the entire state in each of the past four years. The stability of performance of KS060143K-2 over that period, which includes tremendous environmental diversity, would seem to support the supposition that it is broadly adapted.

It has been the top yielding line in the AYN2 in 2013 and the KIN in 2014. It did suffer damage in the November 2014 freeze which affected its performance in northwest Kansas in 2015. It has exceled under moderate to fairly intense drought. It is a little taller than some of the recent wheats from the K-State Manhattan breeding program, and has a high tiller capacity. KS060143K-2 is moderately resistant to stripe rust but susceptible to leaf rust and will benefit from a fungicide treatment under leaf rust pressure. It has good acid soil tolerance, is resistant to soil borne mosaic virus and has an intermediate to moderately susceptible reaction to FHB. The quality of KS060143K-2 is acceptable. Like Art, Endurance, and SY Wolf, it does carry the 1B.1R wheat-rye translocation.

KS12H56-6-4 (proposed name: "Tatanka")

At some field day and tour locations, signs for this line may read "KS12H56-6-4" while at other locations the signs may read "Tatanka" the proposed name for this line if it is released. For now, it's best to refer to it as KS12H56-6-4. Tatanka is the Lakota Sioux word for "buffalo or "buffalo bull."

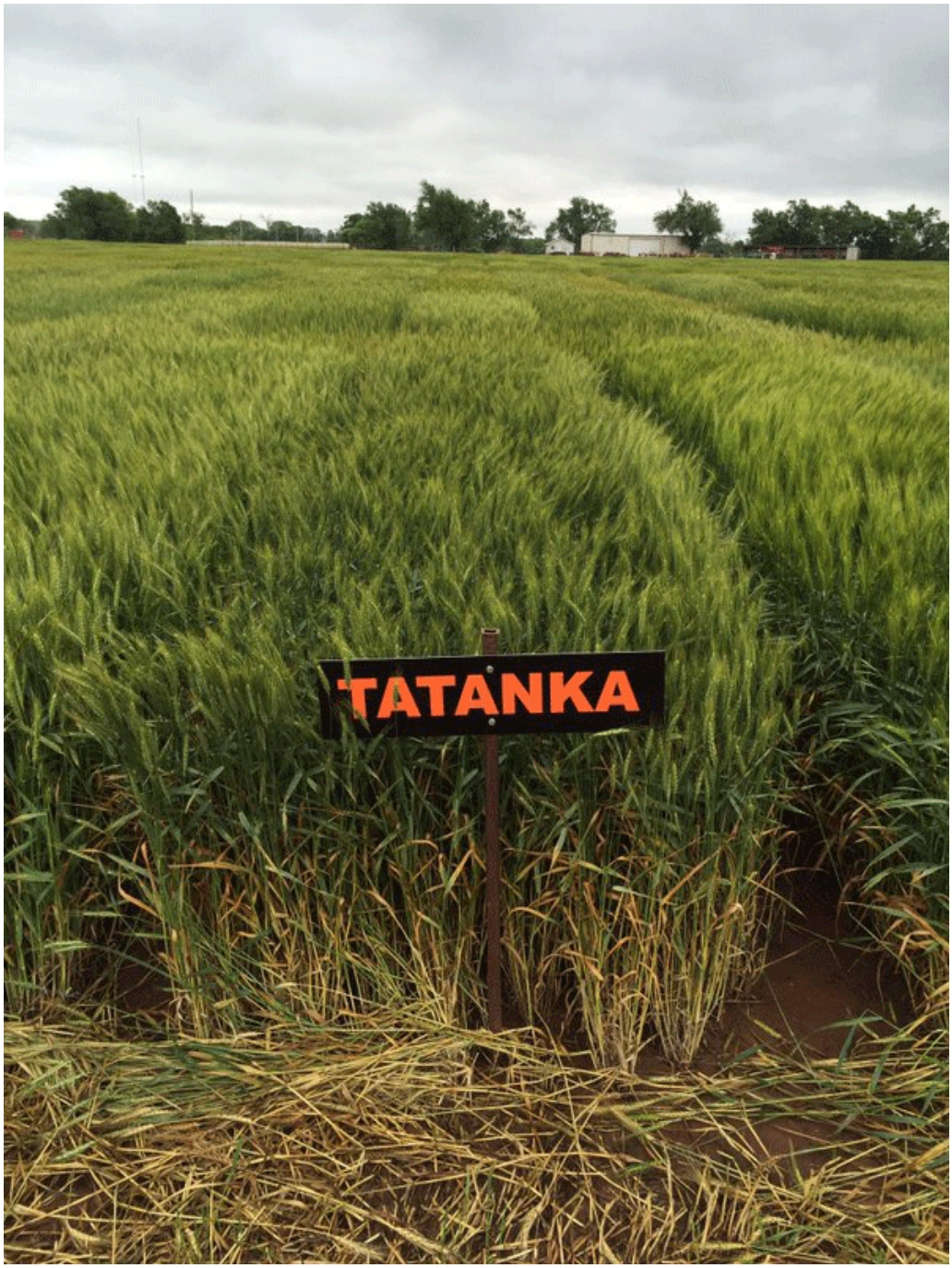

Figure 2. K-State experimental line KS12H56-6-4 (proposed name "Tatanka" if officially released). Photo by Bryson Haverkamp, Kansas Wheat Alliance.

KS12H56-6-4 is a hard red winter wheat with medium maturity and medium height. It is derived from a two-way cross, KS07HW81/T151, which was made in fall of 2006. KS07HW81 is a white breeding line developed by the KSU Agricultural Research Center-Hays wheat breeding program and T151 is a hard red winter wheat variety developed by Trio Research Inc. (now Limagrain Cereal Seeds).

KS12H56-6-4 has been tested statewide in the 2014 and 2015 KIN trials. It has competitive yields in

both western and central Kansas. In both 2014 and 2015, the mean grain yield of KS12H56-6-4 across the dryland locations in western Kansas was in the top yielding group. In the 2014 western KIN trials, it had higher grain yield than all the red check varieties except Byrd. However, there was no significant difference between KS12H56-6-4 and Byrd in all the dryland trials. In the 2015 western KIN trials, KS12H56-6-4 was the top yielding red line. It had higher yield than all the check varieties.

In the irrigated trial at Colby, it also yielded very well in the last two years and averaged 106 bu/acre. In the central Kansas dryland trials in the last two years, KS12H56-6-4 had higher yield than all the check varieties except one in 2015.

KS12H56-6-4 has moderate resistance to stripe rust and soil borne mosaic virus. It is intermediate to wheat streak mosaic virus in the field. It has tolerance to acid soil. It also has some resistance to scab. It is susceptible to leaf rust and Hessian fly.

The milling and baking quality of KS12H56-6-4 is good.

The straw strength for KS12H56-6-4 is about average. It is not expected to be used for irrigated production.

KS060106M-11 (proposed name: "Zenda")

At some field day and tour locations, signs for this line may read "KS060106M-11" while at other locations the signs may read "Zenda," the proposed name for this line if it is released. For now, it's best to refer to it as KS060106M-11. Zenda is a town in Kingman County.

Figure 3. K-State experimental line KS060106M-11 (proposed name "Zenda" if officially released). Photo by Bryson Haverkamp, Kansas Wheat Alliance.

The pedigree of KS060106M-11 is: Overley sib/W04-417//Everest. It is expected to be best adapted to central Kansas.

KS060106M-11 is a medium to medium-early maturing hard red winter wheat. It has established a strong yield record statewide but is probably best suited to central and eastern Kansas. It is an early

wheat that is taller than Everest. It is similar to Everest for Fusarium head blight reaction and is viewed as an Everest replacement.

The stability of performance of KS060106M-11 over the past four years, which includes tremendous environmental diversity, would indicate that it is broadly adapted. KS060106M-11 is moderately resistant to stripe rust but moderately susceptible to leaf rust and could benefit from a fungicide treatment under leaf rust pressure. It is tolerant to acid soils and resistant to soil borne mosaic virus. The quality of KS060106M-11 is acceptable, performing somewhat better than Everest in K-State bake tests.

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3. Diagnosing early-season growth problems in corn

Getting a good stand of corn, with vigorous early-season growth, is the first step in getting good yields. When adverse conditions, such as a hard rain or unusually cool weather, occur after planting and emergence, producers should get out in their fields and take a close look at how their corn is doing.

If the plants emerged in good fashion, but the seedlings then have problems maintaining adequate growth and development or leaf color, there may be several possible reasons. A few of the most likely causes include:

- Freeze damage. In most cases, much of the corn that is emerged at the time of a freeze on will recover with minimal damage. However, some of the new growth may have a hard time emerging from the dead tissue. New growth may become trapped and start to split from the side of the leaf sheath. Generally, warmer temperatures will increase growth rates and new leaves will eventually split the dead tissue, emerge, and continue to grow normally.
- Unusually cool temperatures, compacted soil, or waterlogging. Wet soils and unusually cool temperatures can inhibit root growth especially, slowing plant development. This can cause yellowed, wilting plants due to poor root growth, drowning, or a seedling blight infection. Seedling blight is often characterized by stem tissue near ground level that is discolored or water-soaked in appearance. Also, planting in wet soil can compact the seed furrow, inhibiting root growth. A shallow compaction layer can slow early root growth, resulting in stunted, nutrient deficient plants.

Figure 1. Sidewall and seed zone compaction in heavy clay soil. Photo by Stu Duncan, K-State Research and Extension.

Figure 2. Yellow corn due to low soil temperature, slow early growth. Photo by Ignacio A. Ciampitti, K-State Research and Extension.

Figure 3. Poor seedling emergence produces uneven stands. Photo by Ignacio A. Ciampitti, K-State Research and Extension.

- Early-season lodging ("floppy corn syndrome"). This is usually associated with hot, dry weather during V1 to V6, which prevents adequate development and penetration of nodal roots. Plants can survive for a time on just the seminal root system, but they will have little mechanical support. Reasons for poor nodal root development and an elevated crown include sidewall compaction, erosion after emergence but before nodal root development, and sinking of the seedbed due to pounding rains. Often a good soaking rain is enough to allow nodal roots to establish and plants to recover. Inter-row cultivation can be used to push soil against plants with exposed crowns.

Figure 4. "Floppy corn" syndrome. Corn seedling lodging caused by dry weather and warm soil stunting crown root development. Photo by Doug Shoup, K-State Research and Extension.

- White grubs or wireworms. These soil insects may be eating the roots, which will cause the plants to wilt.
- Black cutworms. These insects, which can be found in the soil or on the surface, cause "window paning" of the leaves on young plants. Cutworms may also cut off seedling plants at the soil surface.
- Flea beetles. These tiny leaf-chewing insects can cause "scratches" on leaves. Eventually, the leaves may shrivel, turn gray, and die. Plants are more susceptible to flea beetle injury when temperatures are cold and seedling growth is slow. Seedling plants are often able to recover from flea beetle injury because the growing point remains below ground level until the fifth leaf emerges.
- Poor growth that occurs as circular to oval patches in the field could be an indicator of

nematode problems. Approximately 35 days after emergence is an ideal time to sample for nematodes, particularly the root lesion nematode that inhabits about 80 percent of Kansas corn fields. Take 20 cores at a depth of 12 inches from directly in or alongside the row from the outer edges of affected areas. Additionally, 2 to 3 root balls of affected plants should be submitted at the same time. Bag the root samples separately from the soil cores. Samples can be submitted through local Extension offices or sent directly to the Plant Disease Diagnostic Lab in Throckmorton Hall.

- Free ammonia from an anhydrous ammonia application. This can injure roots and kill germinating seed if the ammonia was applied too shallowly (especially in coarser soils), too close to the time of planting, or if dry soil conditions slowed the conversion of ammonia to ammonium. One way to minimize damage is to apply the ammonia at a 10 to 15 degree angle from the direction of planting. If injury occurs then it is more randomly distributed, reducing the multi-plant skips, and allowing the unaffected plants to compensate.
- Ammonia injury can also occur when sidedressing anhydrous ammonia under dry soil conditions. Root injury can occur if the plants get too big or the knives run too close to the row. Ammonia injury resulting from poor soil sealing can cause leaves to appear watersoaked or have dead margins. Roots may appear sheared off, or burned off. Plants will normally recover from this injury, but yields can be reduced.
- Putting a urea-based N fertilizer in contact with the seed. Urea will hydrolyze into ammonia and injure the seedling.

Figure 5. Seedlings damaged after starter fertilizer containing urea-N was placed in direct seed contact. Photo by Dorivar Ruiz Diaz, K-State Research and Extension.

- Nitrogen (N) deficiency. This does not usually occur until a later stage of growth in conventional tillage systems. But in no-till corn, especially in high residue situations, N deficiency is common where producers haven't applied nitrogen as a starter, or broadcast a significant amount of N prior to or at planting. In early planting in very cold soils where no N

was applied close to the seed as a starter, seedlings may be N deficient in conventional-till also. Nitrogen deficient corn seedlings will be spindly, with pale yellow-green foliage. As the plants grow, the lower leaves will "fire," with yellowing starting from the tip of the leaf and progressing back toward the stalk.

- Phosphorus deficiency. This can result in stunted growth and purple leaves early in the growing season. Phosphorus deficiency is often enhanced by cool, wet growing conditions.
- Iron deficiency. This can cause upper leaves to be pale green between the veins. Iron deficiency is more common on high pH and calcareous soils.

- Sulfur deficiency. This can result in stunted plants having pale green leaves, with no distinct pattern on the leaves.

- Herbicide injury. This is not as common now as in the past, but can still occur. Corn is very susceptible to injury from carryover sulfonylurea herbicides which may have been applied to a previous crop, such as wheat. Carryover depends on soil pH, soil texture, application rates, rainfall, and other factors listed on the herbicide labels. Symptoms include stunting, chlorosis, and an overall sickly appearance. Corn will not grow out of this type of injury.

Figure 6. ALS herbicide carryover injury to corn. Photo by Stu Duncan, K-State Research and Extension.

For more details, see "Diagnosing Corn Production Problems in Kansas," K-State publication S-54, at:
http://www.ksre.ksu.edu/bookstore/pubs/S54.pdf

In addition, check the new eBook version of this publication at:
http://www.agronomy.k-state.edu/extension/crop-production/corn/

Also, see "Corn Production Handbook," K-State publication C-560, at:
http://www.ksre.ksu.edu/bookstore/pubs/C560.pdf

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4. Winter canola featured at K-State field days May 24, 25

The latest research and production information on winter canola will be featured at a series of K-State Research and Extension field days on May 24 and 25.

The field days will give producers several opportunities to see winter canola research plots and producer fields. Current research being conducted at the South Central Experiment Field near Hutchinson, as well as canola production fields near Concordia, Haven, and Andale will be on tap. Harvest management will one of the main topics.

With harvest season fast approaching, harvest management is critical for any crop, especially canola. We will talk about how to appropriately stage canola for swathing, desiccating and direct cutting at each location.

The schedule for the field days includes:

May 24. First up is the South Central Kansas Experiment Field spring field day on Tuesday, May 24. The program begins at 5 p.m. at the field headquarters, 10620 S. Dean Road, Hutchinson. Canola topics will include harvest management, a seeding-rate-by-variety-by-row-spacing study and a variety demonstration plot. Ten commercial canola varieties from five different seed suppliers will be on display.

May 25. On Wednesday, May 25, KSRE will partner with Rubisco Seeds to highlight three canola producers in Kansas. "The producers we will visit are growing hybrid canola," Stamm said. "We will be discussing advanced production practices and how those practices have helped make these canola growers successful." Refreshments will be provided by Rubisco Seeds.

The first stop will be at 10 a.m. south of Concordia. From the US-81 and Oat Road junction, drive 4.5 miles east to 200th Road. This field was drilled on 7.5-inch row spacings following double-cropped wheat.

The second stop will be at 2 p.m. east of Hutchinson. From the intersection of US-50 and K61 highways, go 5 miles east on US-50. The field is located at the intersection of US-50 and Kent Road. A second canola field planted after corn and under irrigation will also be included on this stop.

The third stop will be at 5 p.m. in Sedgwick County. From Andale, drive 3 miles west on W 61st St N and 1 ¼ miles south on N 295th St W. In this field, the previous crop residue was burned, then canola was seeded using a no-till planter on 30-inch rows.

For more information, contact Mike Stamm at 785-532-3871 or mjstamm@ksu.edu.

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mjstamm@ksu.edu

5. Spring Field Day, May 26, Garden City

6. Wheat plot tour scheduled at North Central Experiment Field, June 1

The North Central Experiment Field Wheat Plot Tour is scheduled for Wednesday, June 1, starting at 7:30 a.m. The field is located about two miles west of Belleville on Kansas Highway 36. Juice and rolls will be served ahead of the tour.

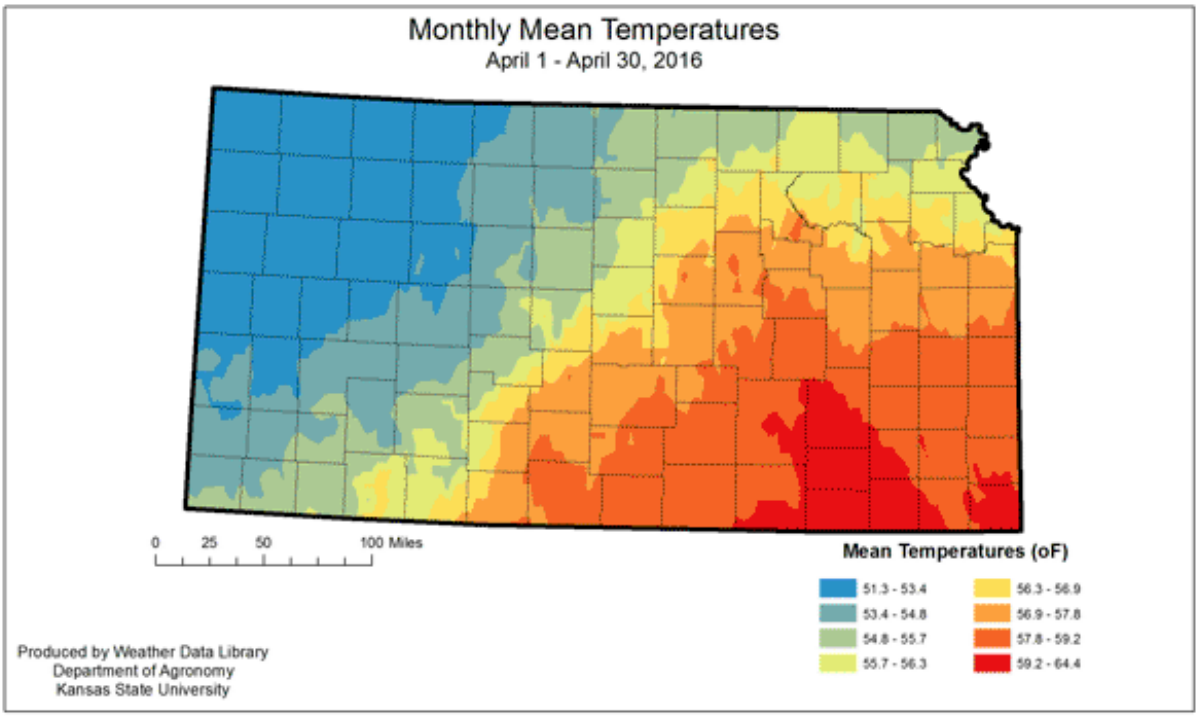
K-State speakers will include Romulo Lollato, Wheat and Forages Specialist; Erick DeWolf, Extension Wheat Disease Specialist; and Stu Duncan, Northeast Area Crops and Soils Specialist. Tour topics include:

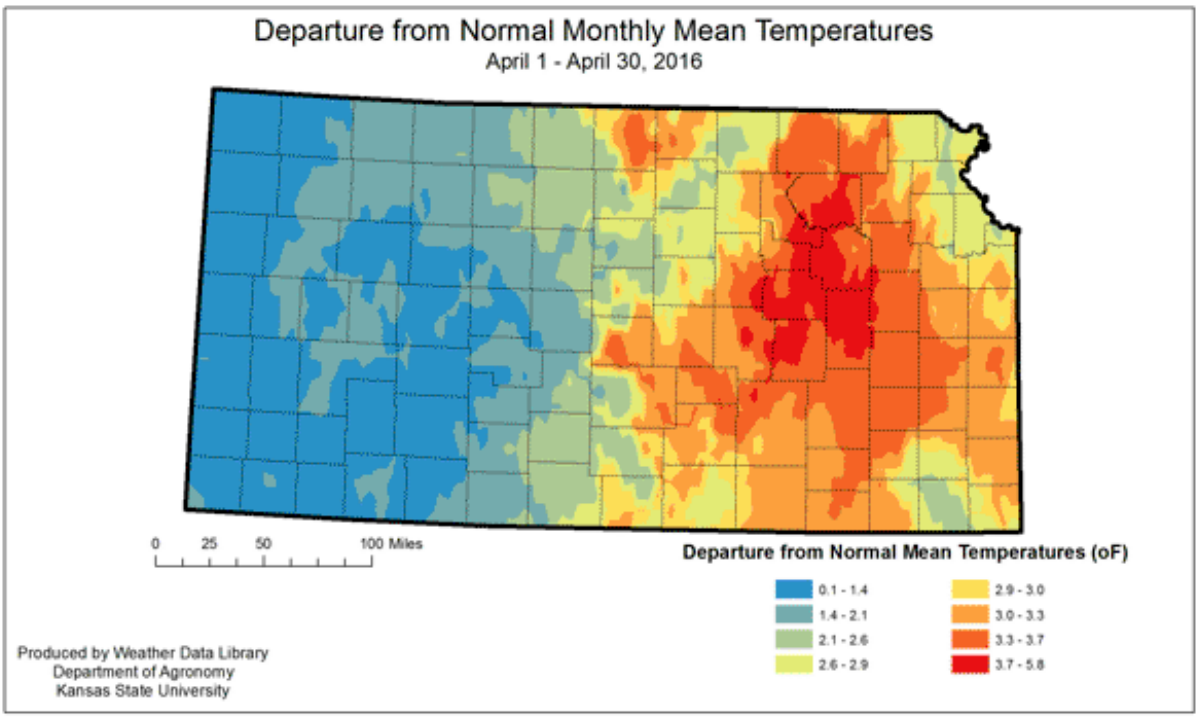
- Wheat Varieties
- Intensive Wheat Management

More information is available by calling the North Central Experiment Field at 785-335-2836 or contacting Andrew Resser, Agronomist-in-Charge, at aresser@ksu.edu.

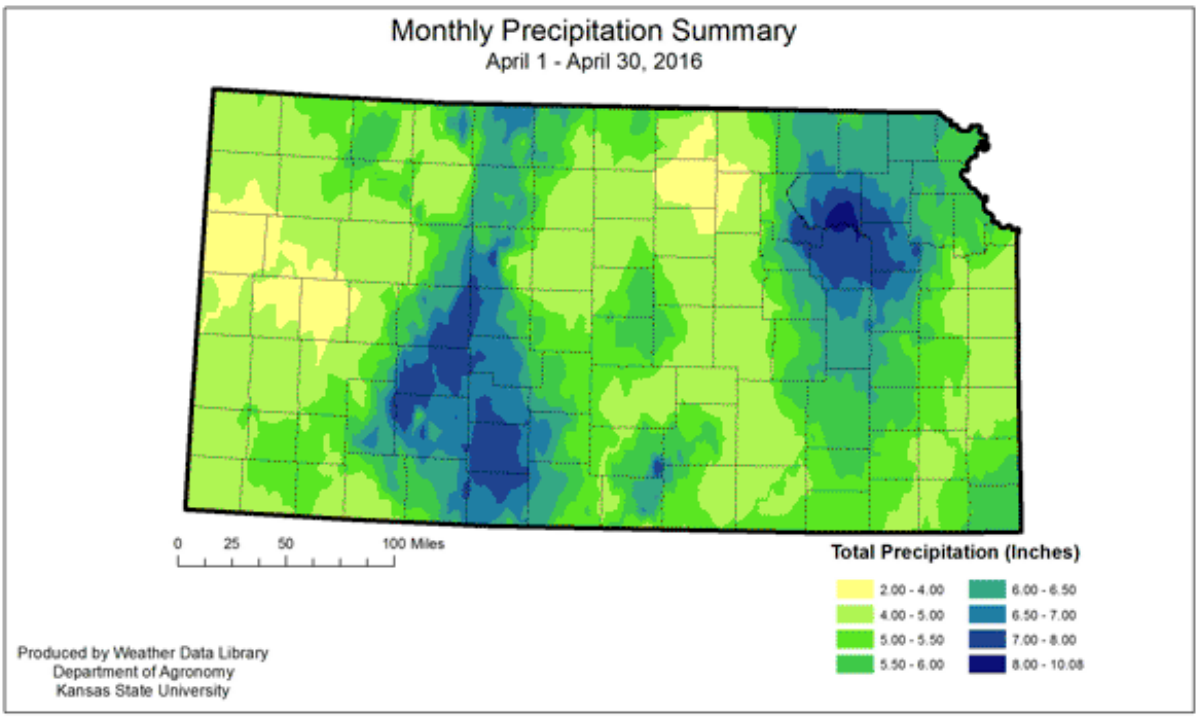
7. Kansas weather summary for April: Change in pattern

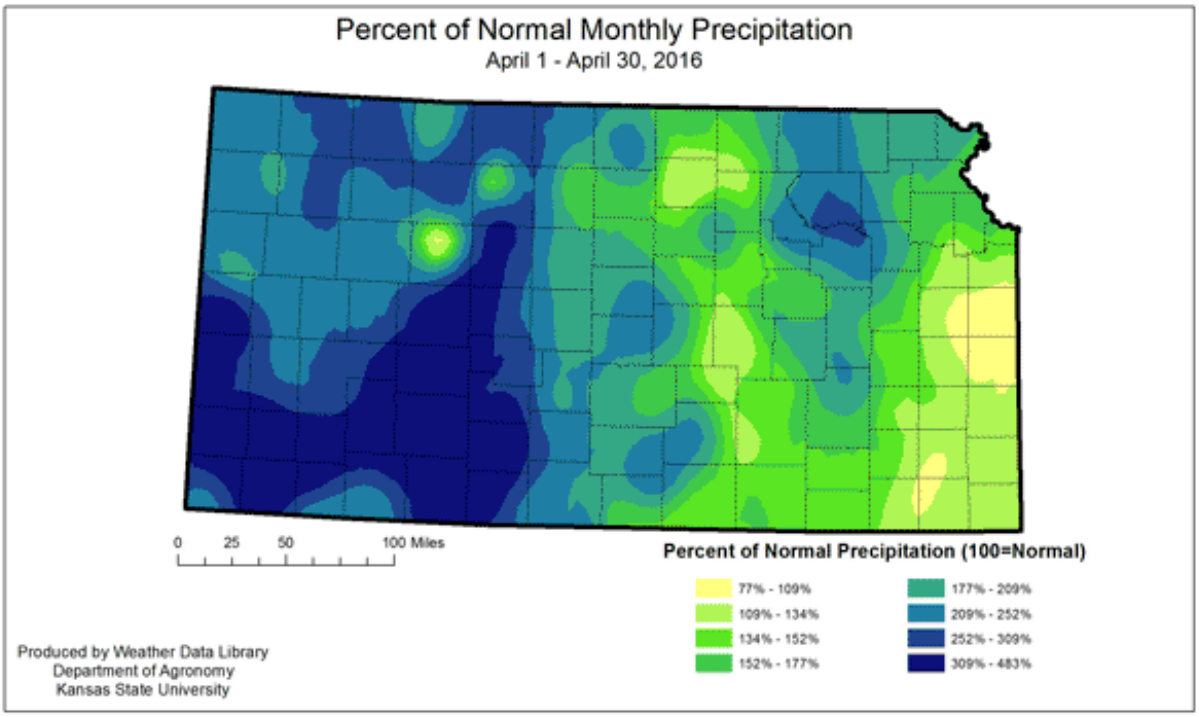
The warm, dry conditions that dominated March continued through the first half of April in Kansas. This resulted in warmer-than-normal conditions for the month as a whole, although not as extreme as last month. The mean temperature for April was 55.6 degrees F which was 1.9 degrees warmer than normal. While on the warm side of the distribution, it was only the 36th warmest since 1895. The South Central Division had the largest departure with a mean temperature of 58.4 degrees F, or 2.8 degrees warmer than average. The West Central Division was closest to normal, with a mean temperature of 52.1 degrees F or 0.9 degrees warmer than normal. The number of record daily highs was fewer than in previous months with only 6 new records. There were just three new record warm minimum temperatures set. The warmest high temperature was 91 degrees F recorded at Ashland (Clark County) on the 4th and at Hudson (Stafford County) on the 26th. There were six new record cold high temperatures. All of these new record cold high temperatures occurred on the 30th of the month, as a cold front brought snow at end the month. These low temperatures so late in the season brought concerns of damage to vegetation that moved out of dormancy early. This was especially true for winter wheat.

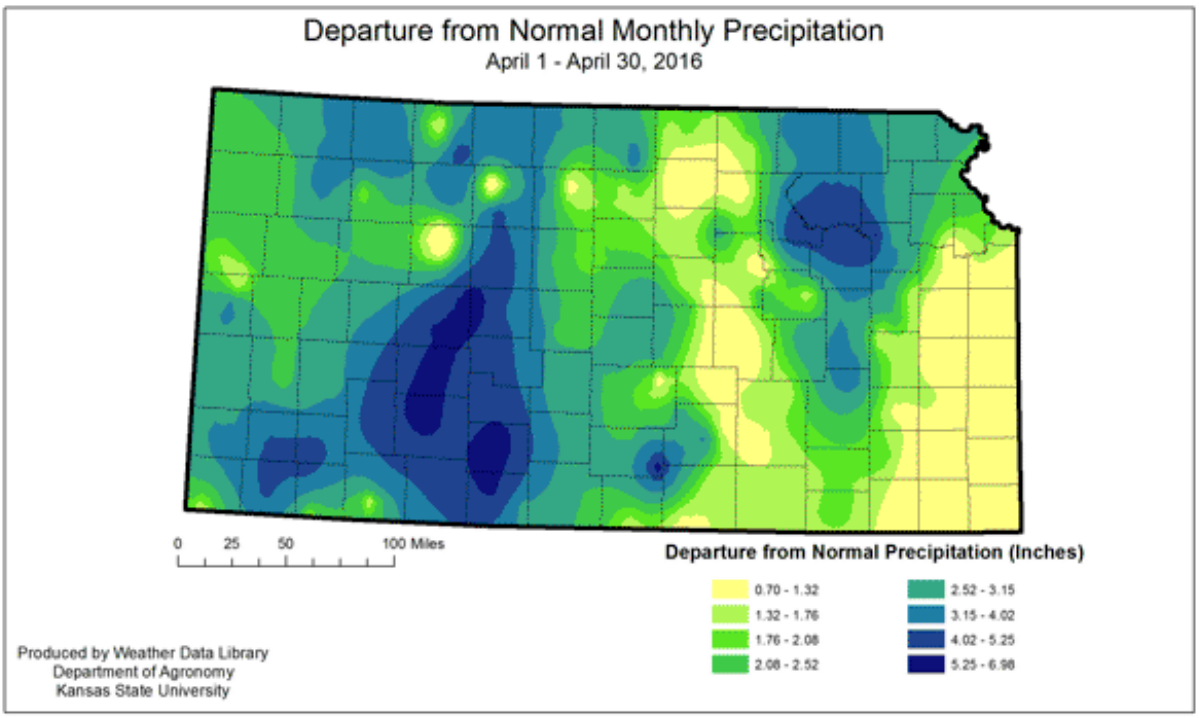


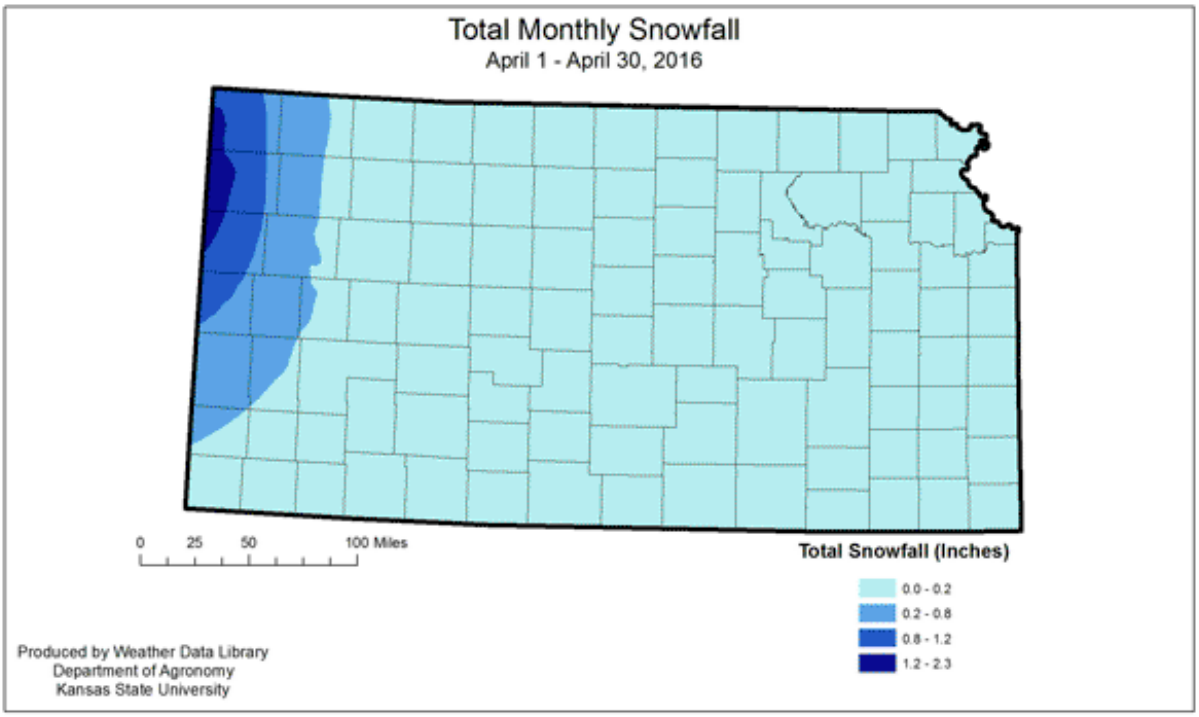


After a dry start to the month, April ended with a wet pattern. The Southeast Division and East Central divisions came closest to normal. The Southeast Division averaged 5.40 inches which was 138 percent of normal; the East Central Division average 5.14 inches which was 142 percent of normal. The remaining divisions ranged from 176 percent of normal in the North Central Division to 335 percent of normal in the Southwestern Division. These rainfall amounts brought year-to-date totals at or above normal for all but the East Central and Southeast Divisions. Dodge City went from one of the driest starts to the year on record to the wettest May on record. The statewide average precipitation was 5.18 inches, or 207 percent of normal. This ranks as the 4th wettest April on record. The greatest monthly total was 9.53 inches at Montezuma, Gray County (NWS). The greatest total for CoCoRaHS stations was 9.68 inches at Dodge City 9.1 WNW, Ford County. There were 159 new daily record precipitation totals. Twenty-one of those were record high amounts for April, and two set all-time daily rainfall records. The all-time records both occurred on April 17th: 5.48 inches at Cedar Bluff Dam, and 5.31 inches at McCracken.


Monthly Precipitation Summary
April 1 - April 30, 2016
0 25 50 100 Miles
Total Precipitation (Inches)
2.00 - 4.00
4.00 - 5.00
5.00 - 5.50
5.50 - 6.00
6.00 - 6.50
6.50 - 7.00
7.00 - 8.00
8.00 - 10.08
Produced by Weather Data Library
Department of Agronomy
Kansas State University


Percent of Normal Monthly Precipitation
April 1 - April 30, 2016
0 25 50 100 Miles
Percent of Normal Precipitation (100=Normal)
77% - 109%
109% - 134%
134% - 152%
152% - 177%
177% - 209%
209% - 252%
252% - 309%
309% - 483%
Produced by Weather Data Library
Department of Agronomy
Kansas State University





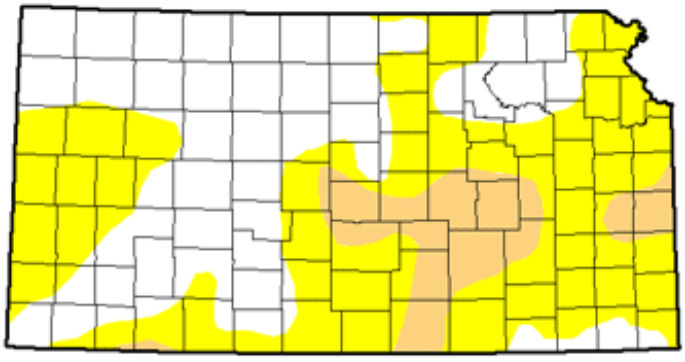
Along with the increased rainfall pattern there was an increase in severe weather reports. There were 7 tornadoes reported, as well as 41 reports of damaging wind. The most common severe weather report was hail. There were 119 reports of hail during the month.

The wet end to the month resulted in dramatic improvements in the drought status. The end of March had only 26 percent of the state as drought-free. The last Drought Monitor issued in April had 43 percent of the state labeled drought-free. Additional improvement will show in the first May map,

as precipitation at the end of April is included in the analysis. The precipitation outlook for May favors wetter-than-average conditions in most of the state, with only the northeast in neutral, with equal chances for above or below normal precipitation. However, the short-term outlooks are for wetter-than-average conditions for the first half of the month statewide.

U.S. Drought Monitor

Kansas



Author:
Richard Heim
NCEI/NOAA

http://droughtmonitor.unl.edu/

April 26, 2016

(Released Thursday, Apr. 28, 2016)
Valid 8 a.m. EDT

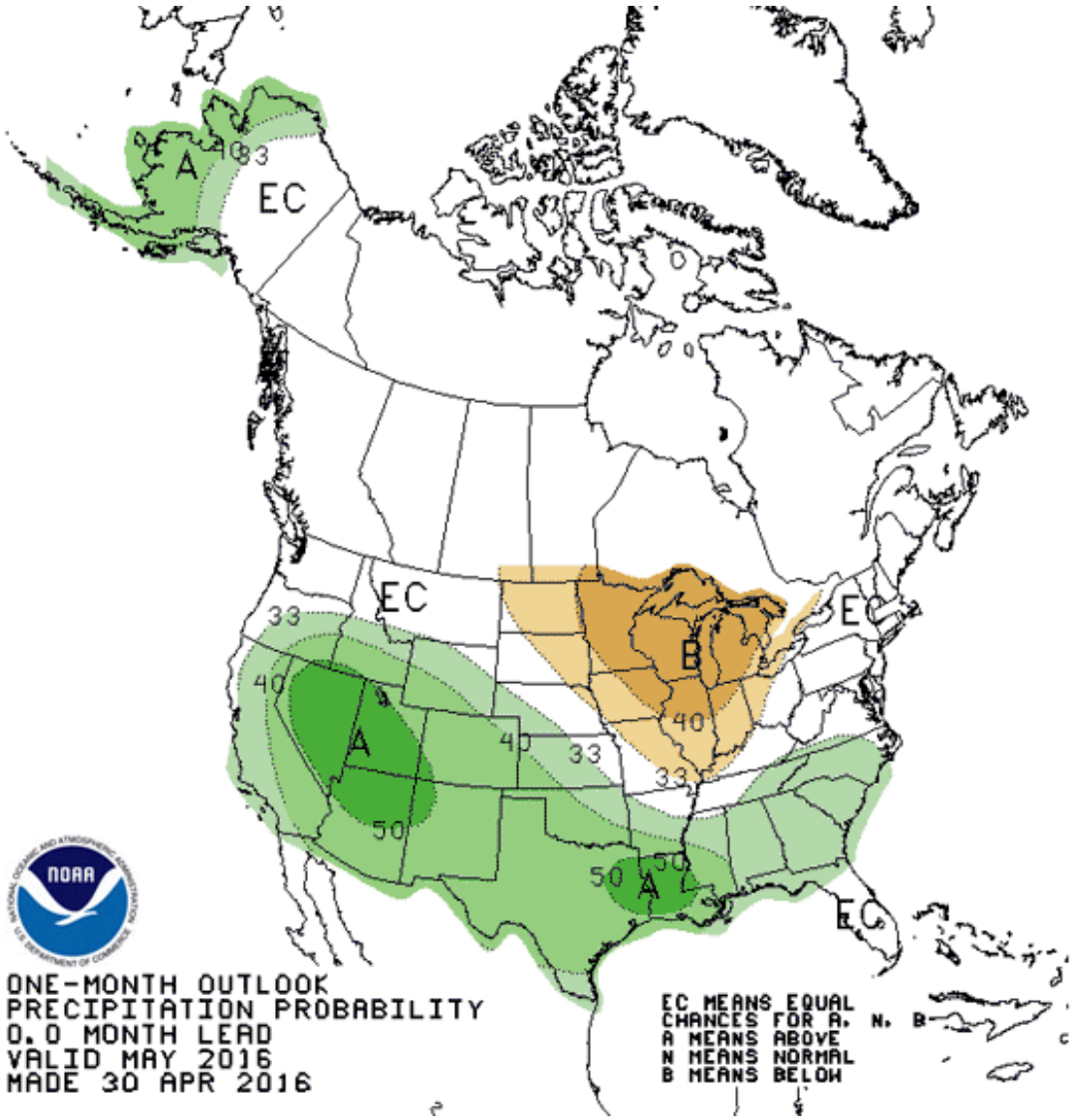
Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	42.54	46.34	11.12	0.00	0.00	0.00
Last Week 4/19/2016	31.74	53.23	15.03	0.00	0.00	0.00
3 Months Ago 1/26/2016	97.84	2.16	0.00	0.00	0.00	0.00
Start of Calendar Year 12/29/2015	97.84	2.16	0.00	0.00	0.00	0.00
Start of Water Year 9/29/2015	80.79	14.72	4.48	0.00	0.00	0.00
One Year Ago 4/28/2015	8.01	24.11	41.71	23.01	3.17	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



Apr 2016

Kansas Climate Division Summary

	Precipitation (inches)						Temperature (°F)			
	Apr- 206			2016 Jan through April					Monthly Extremes	
Division	Total	Dep. [1]	% Normal	Total	Dep. [1]	% Normal	Ave	Dep. [1]	Max	Min

Northwest	4.53	2.42	214	5.91	1.45	132	51.1	1.0	83	22
West Central	4.55	2.62	236	5.88	1.39	128	52.1	0.9	84	21
Southwest	5.62	3.96	335	5.99	1.90	144	54.9	1.1	91	18
North Central	4.39	1.84	176	6.18	0.08	102	55.2	2.0	86	24
Central	5.17	2.48	199	7.14	0.42	109	56.2	2.0	89	22
South Central	5.56	2.83	210	7.26	-0.18	100	58.4	2.8	91	24
Northeast	6.10	2.81	187	8.37	0.77	111	56.4	2.6	87	22
East Central	5.14	1.55	142	7.62	-1.00	87	57.2	2.7	86	23
Southeast	5.40	1.47	138	8.28	-1.76	82	58.6	2.4	87	23
STATE	5.18	2.48	207	6.94	0.31	110	55.6	1.9	91	18

1. Departure from 1981-2010 normal value

Source: KSU Weather Data Library

Mary Knapp, Weather Data Library
mknapp@ksu.edu

8. Comparative Vegetation Condition Report: April 26 - May 2

The weekly Vegetation Condition Report maps below can be a valuable tool for making crop selection and marketing decisions.

The objective of these reports is to provide users with a means of assessing the relative condition of crops and grassland. The maps can be used to assess current plant growth rates, as well as comparisons to the previous year and relative to the 27-year average. The report is used by individual farmers and ranchers, the commodities market, and political leaders for assessing factors such as production potential and drought impact across their state.

The Vegetation Condition Report (VCR) maps were originally developed by Dr. Kevin Price, K-State professor emeritus of agronomy and geography. His pioneering work in this area is gratefully acknowledged.

The maps have recently been revised, using newer technology and enhanced sources of data. Dr. Nan An, Imaging Scientist, collaborated with Dr. Antonio Ray Asebedo, assistant professor and lab director of the Precision Agriculture Lab in the Department of Agronomy at Kansas State University, on the new VCR development. Multiple improvements have been made, such as new image processing algorithms with new remotely sensed data from EROS Data Center.

These improvements increase sensitivity for capturing more variability in plant biomass and photosynthetic capacity. However, the same format as the previous versions of the VCR maps was retained, thus allowing the transition to be as seamless as possible for the end user. For this spring, it was decided not to incorporate the snow cover data, which had been used in past years. However, this feature will be added back at a later date. In addition, production of the Corn Belt maps has been stopped, as the continental U.S. maps will provide the same data for these areas. Dr. Asebedo and Dr. An will continue development and improvement of the VCRs and other advanced maps.

The maps in this issue of the newsletter show the current state of photosynthetic activity in Kansas, and the continental U.S., with comments from Mary Knapp, assistant state climatologist:

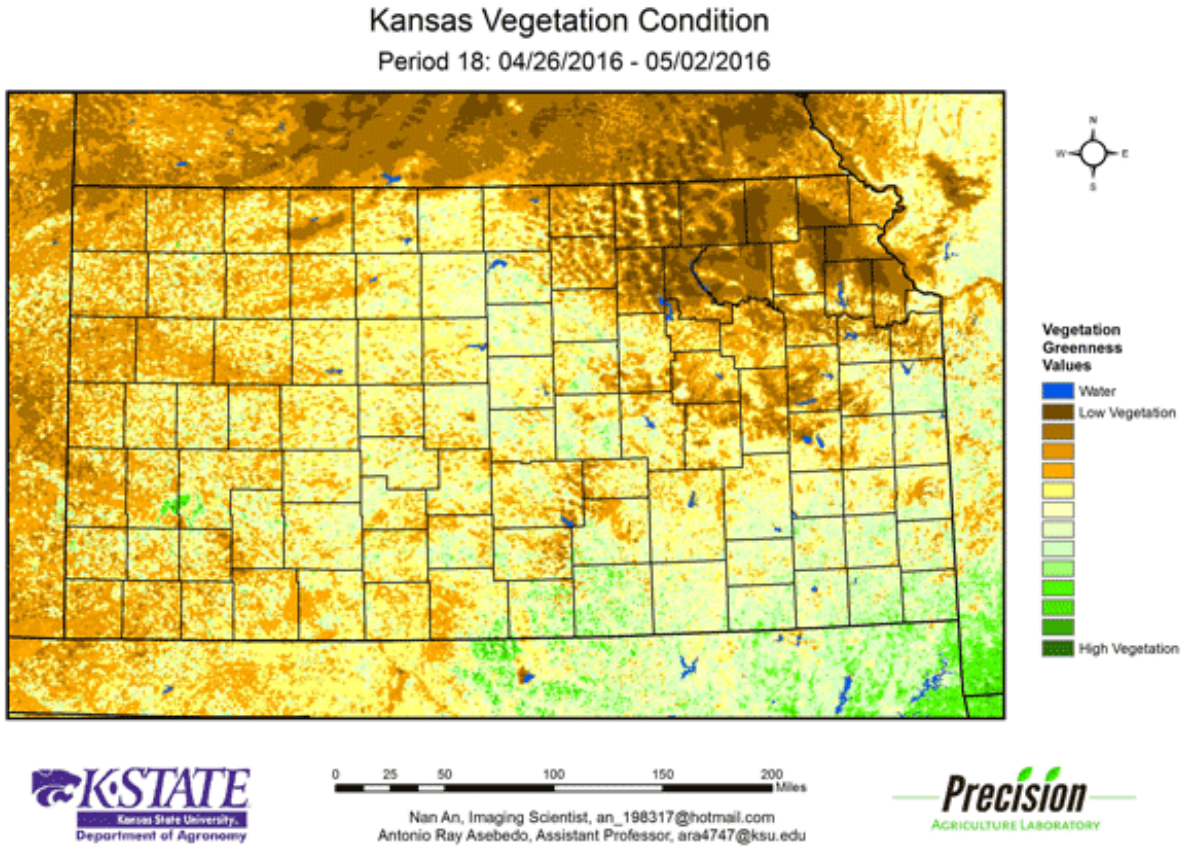


Figure 1. The Vegetation Condition Report for Kansas for April 26 - May 2 from K-State's Precision Agriculture Laboratory continues to show widespread low NDVI values. This is due largely to the rainy pattern that persisted for most of the period. Moderate vegetative activity is visible in the South Central and Southeastern Divisions, where rainfall was less extreme. The Flint Hills continue to show relatively low photosynthetic activity as cool temperatures and cloudy conditions have limited greenup.

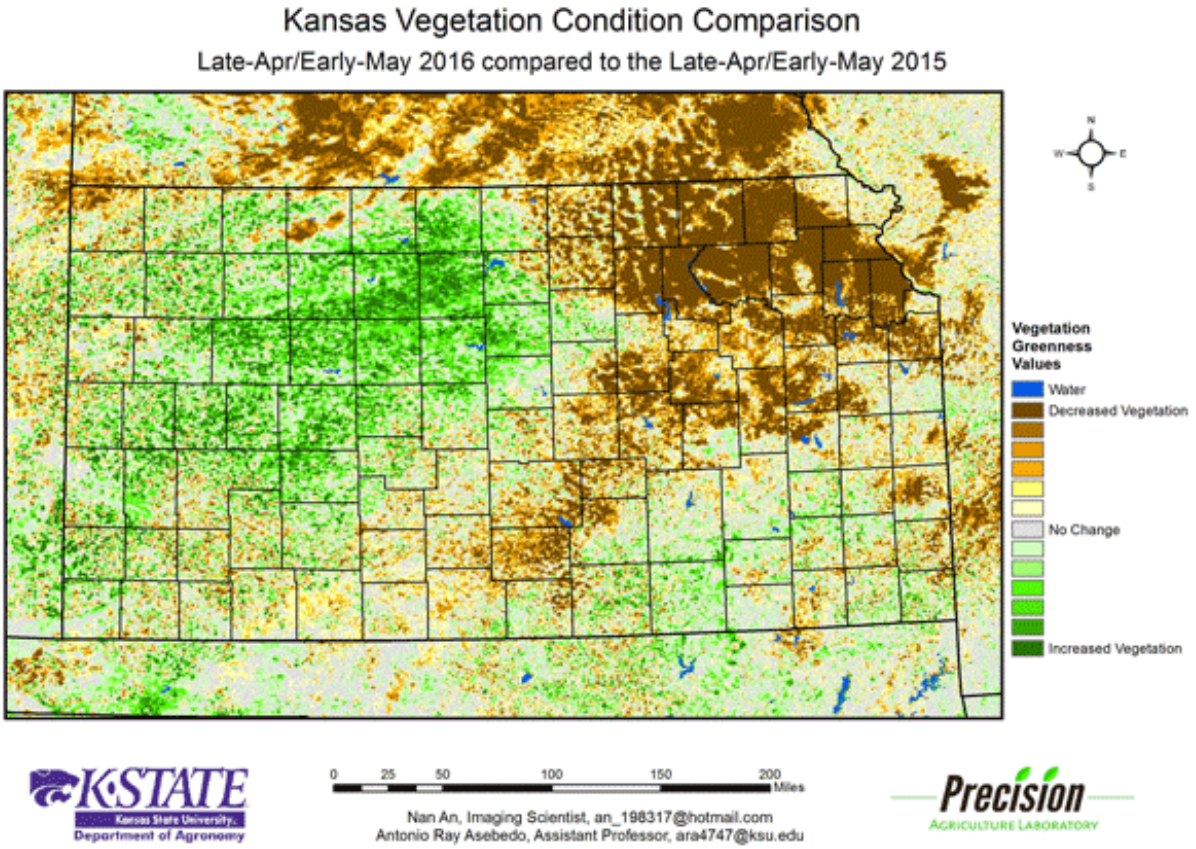


Figure 2. Compared to the previous year at this time for Kansas, the current Vegetation Condition Report for April 26 – May 2 from K-State's Precision Agriculture Laboratory shows vegetative production much lower across the northeast and east central areas of the state. Much of this is due to excessive rainfall this year, as compared to last.

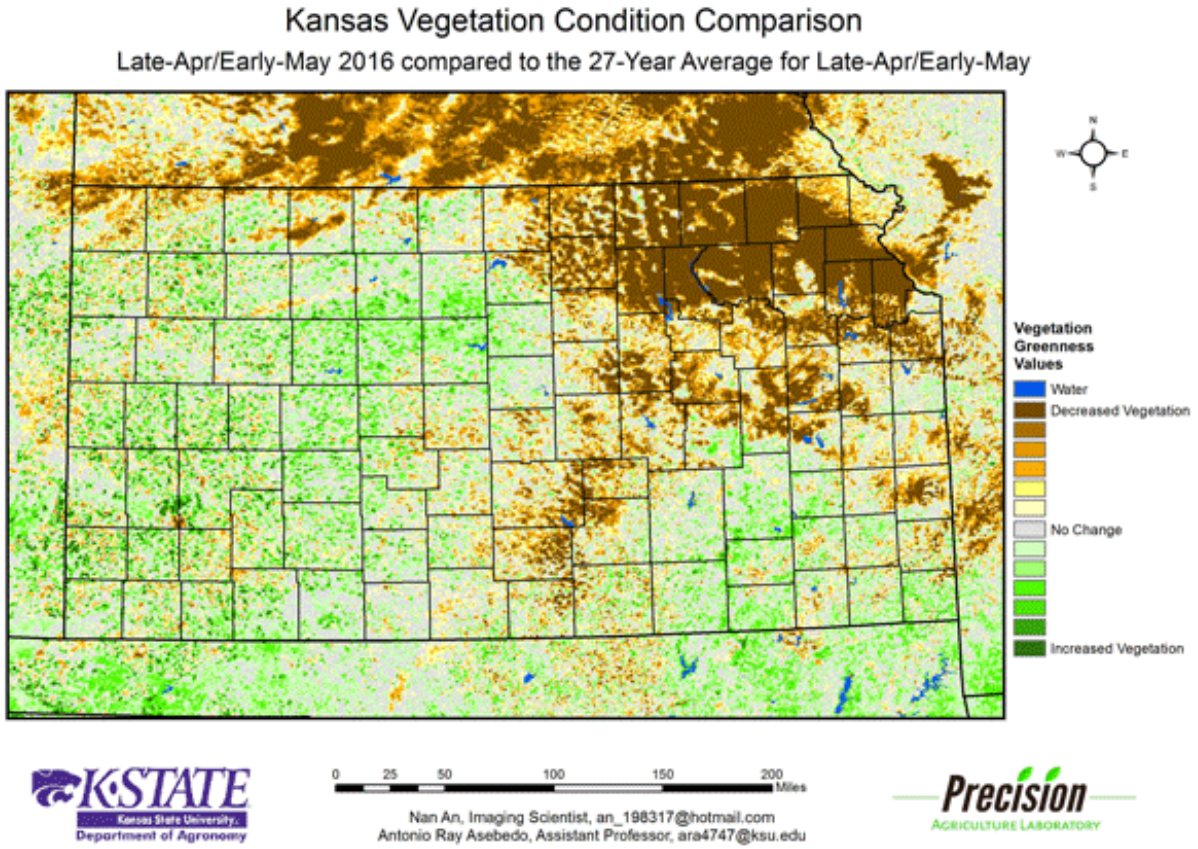


Figure 3. Compared to the 27-year average at this time for Kansas, this year's Vegetation Condition Report for April 26 – May 2 from K-State's Precision Agriculture Laboratory shows main feature is below-average vegetative activity in the northeastern areas of the state. This is largely due to heavy rains and persistent cloud cover in these areas.

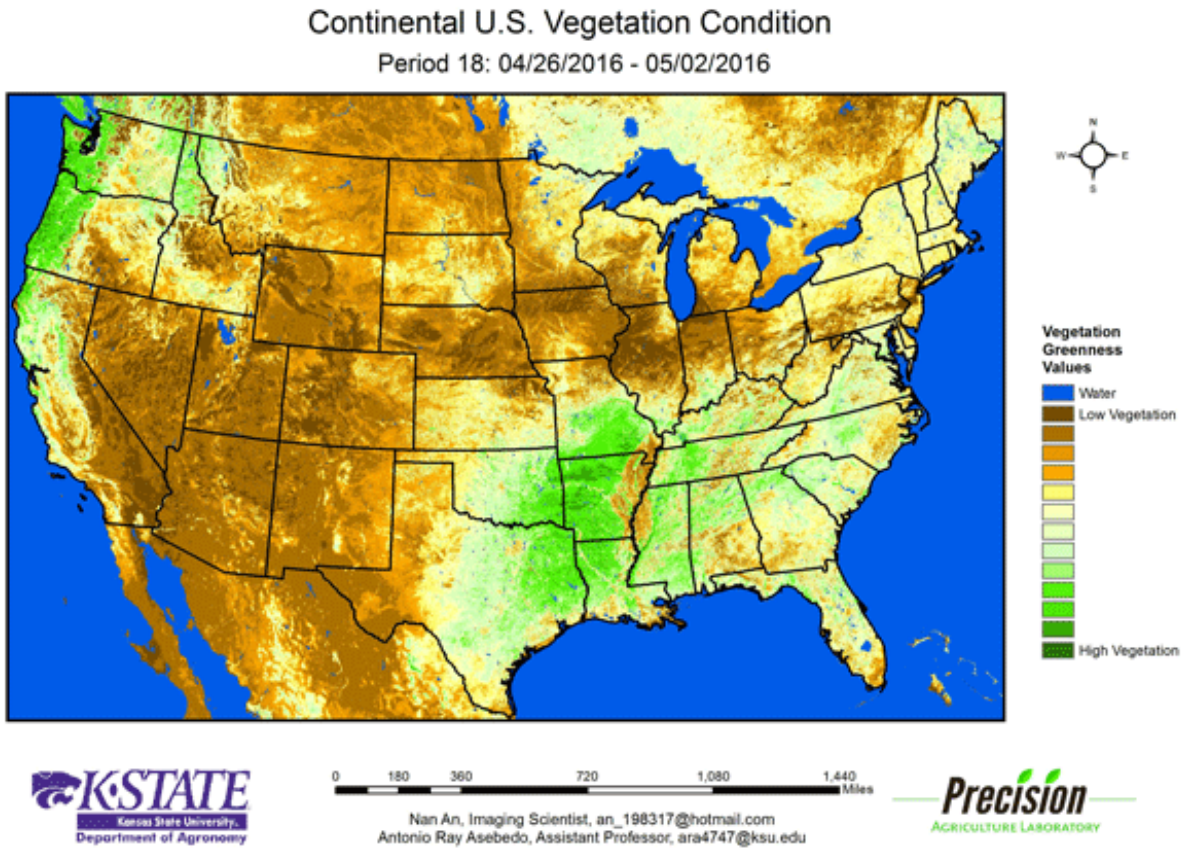


Figure 4. The Vegetation Condition Report for the U.S for April 26 – May 2 from K-State's Precision Agriculture Laboratory shows high NDVI values along much of the West Coast, and in northern Idaho. Favorable moisture continues to drive active photosynthesis in these areas. A pocket of lower photosynthetic activity continues to be visible along the lower Mississippi River, where flooding is an issue. Low photosynthetic activity from the Central Plains through the Ohio River Valley is due to heavy rainfall.

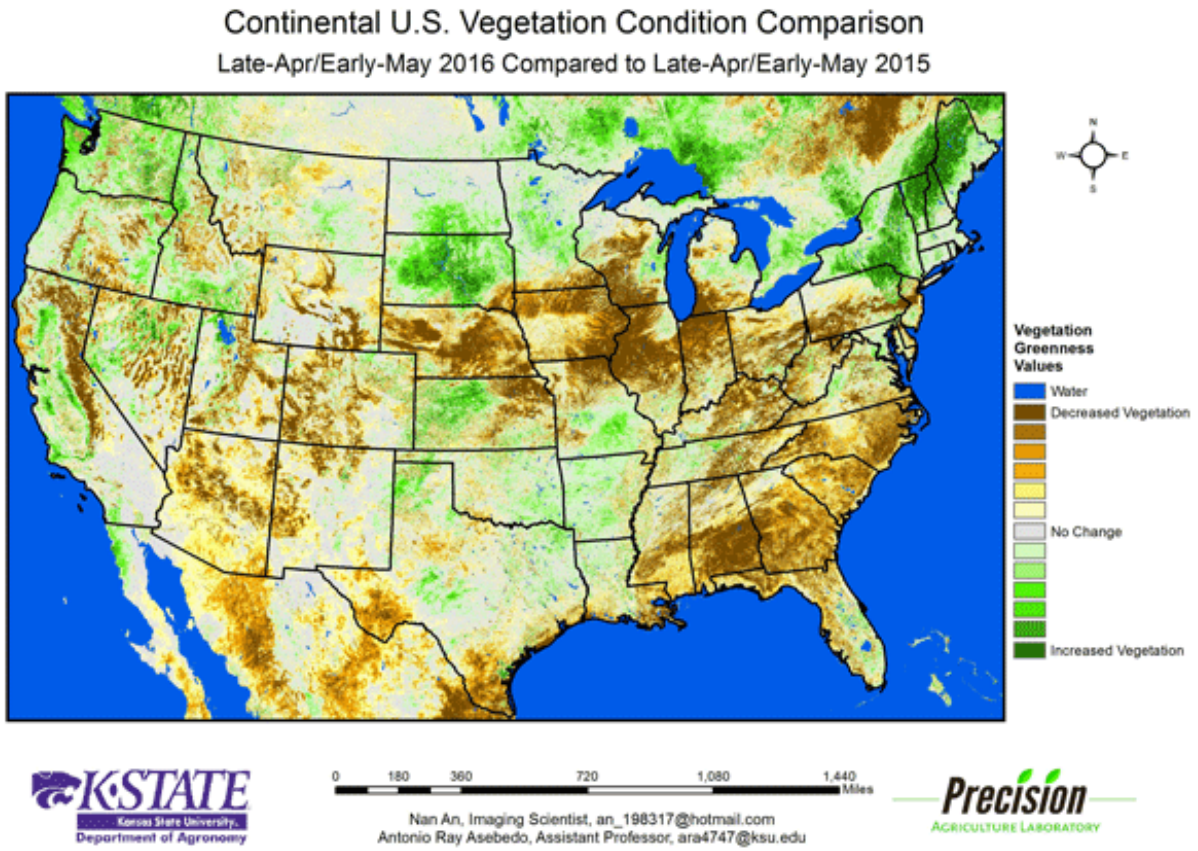


Figure 5. The U.S. comparison to last year at this time for the period April 26 – May 2 from K-State's Precision Agriculture Laboratory shows that lower NDVI values are most evident along the central U.S. through the Southeast. Much of this is due to the higher precipitation in these areas. In contrast, much higher NDVI values are visible in New England, were precipitation was more limited.

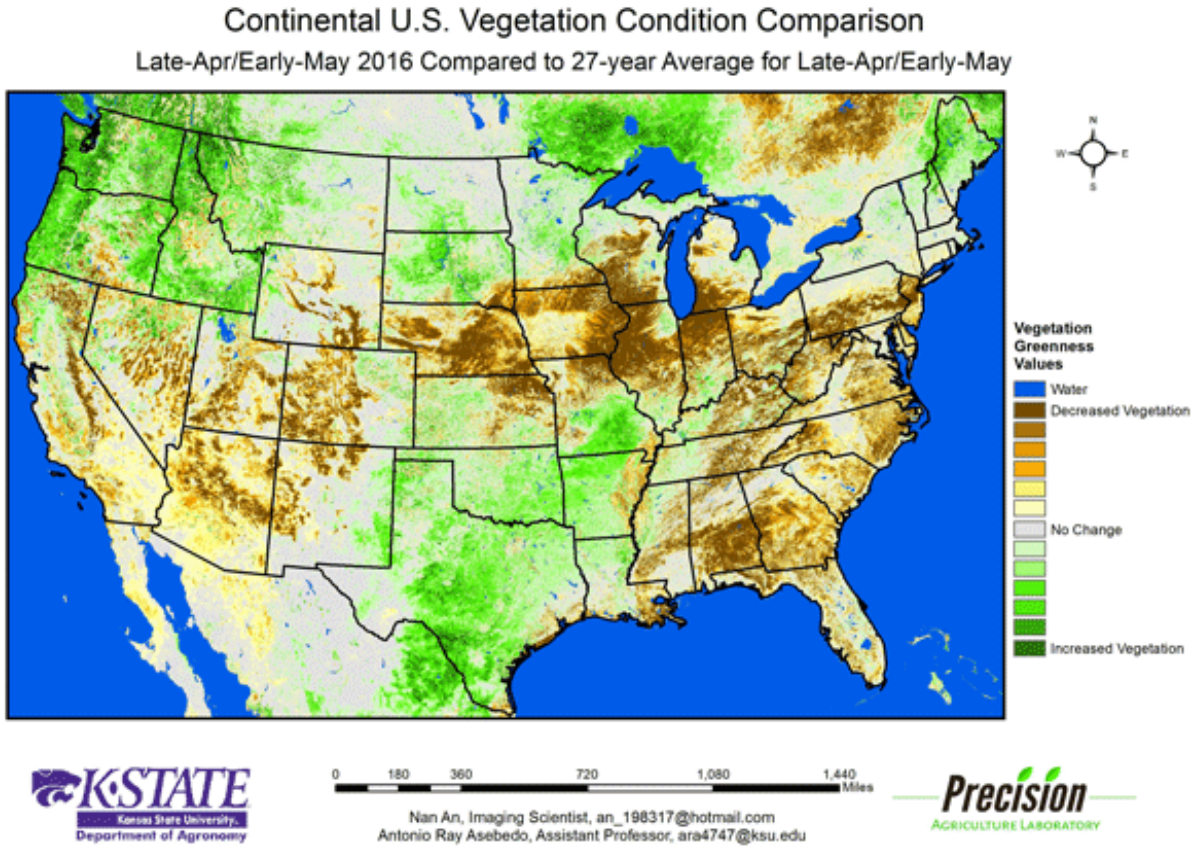


Figure 6. The U.S. comparison to the 27-year average for the period April 26 – May 2 from K-State's Precision Agriculture Laboratory shows above-average photosynthetic activity across the Pacific Northwest, where winter moisture has reduced drought impacts. Snow pack from the late-season storms in the central Rockies has reduced photosynthetic activity in these areas. The heavy rains from last week moved east, and the resulting cloud cover has reduced photosynthetic activity in those areas.

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