Issue 587

K-STATE Research and Extension

Extension Agronomy

eUpdate

08/26/2016

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. Basal bark and cut-stump herbicide applications for control of woody plants on rangeland

Late summer and fall can be an excellent time to treat unwanted stands of woody plants. Scattered stands of individual trees should either be treated individually using the basal bark method (for labeled plants less than 4-6 inches in diameter) or the cut stump treatment method. The basal bark and cut stump treatments will not be effective if the plants cannot be treated down to the soil line. Avoid conditions where water (or snow later in the season) prevents spraying to the ground line.

Producers can treat smaller diameter susceptible woody plants individually this fall by spraying the basal stem parts with triclopyr plus diesel fuel. The lower 12-15 inches of the stems or trunks of susceptible small trees should be thoroughly wetted on all sides with a triclopyr-diesel mixture. Triclopyr goes by the tradenames Remedy Ultra and Pathfinder II. Remedy Ultra is a 4 lb/gallon product.

The labeled recommendations for Remedy Ultra are 20-30% solution in diesel. Pathfinder II is a ready-to-use product and does not have to be mixed with diesel. PastureGard HL is a premix of triclopyr and fluroxypyr, and can be applied as a basal bark or cut-stump treatment as a 25% solution in diesel. Crossbow, a mixture of triclopyr and 2,4-D, can also provide control of certain woody plants as a 4% solution in diesel. Milestone, with the active ingredient aminopyralid, is effective on black and common honeylocust. Mix Milestone 5% v/v with a compatible basal oil.

If the woody plant is greater than 6 inches in diameter, the best method is to cut it off at ground level and treat the cut surface with triclopyr and diesel fuel within 30-60 minutes, before the sap seals over the exposed area. Spray the cambium and light-colored sapwood to insure translocation of the herbicide. Treat any exposed trunk or exposed roots.

The stump of ash, cottonwood, elm, oaks, persimmon, and Russian olive can be treated with a 1:1 ratio of dicamba (Banvel, Clarity) in water instead of triclopyr if desired. The stumps of Eastern red cedar do not need to be treated since, unlike many woody brush plants, this species does not root sprout. Simply cutting Eastern red cedar below the lowest green branch will kill it. Common trees in Kansas that resprout after cutting include ash, cottonwood, elm, oaks, osage orange (hedge), persimmon, black and common honey locust, saltcedar, and Russian olive. In sprouting species, new shoots arise from dormant buds at or below the ground often resulting in a multi-stemmed clump.

Table 1. Cut-Stump Herbicides

Herbicide	Active ingredients per gallon	Rate
Crossbow[1]	2 lb 2,4-D + 1 lb triclopyr	4% in diesel
Remedy Ultra	4 lb triclopyr	20-30% in diesel
Pathfinder II	0.75 lb triclopyr	Ready to use
PastureGard HL	3 lb triclopyr + 1 lb fluroxypyr	25% in diesel
Milestone	2 lb aminopyralid	10% in water

Banvel/Clarity	4 lb dicamba	25-50% in water
Roundup PowerMax	5.5 lb glyphosate	50-100% in water
Arsenal	2 lb imazapyr	10% in water

[1] Trade names are used to help identify herbicides. No endorsement is intended, nor is any criticism implied of similar products not mentioned.

Common honeylocust can resprout from a wide diameter area around the main plant because of root suckers. One option is to make a basal bark treatment with triclopyr-containing products to kill the entire plant in the fall. Then the main plant can be cut down in subsequent years once the tree is dead. Cut-stump applications of Milestone as a 10% solution in water has been effective on common honeylocust.

Table 2. Cut-Stump Treatments

Species	**Herbicides**
Ash	Crossbow, Pathfinder II, Banvel/Clarity, Arsenal
Common honeylocust	Remedy Ultra, Pathfinder II, PastureGard HL, Milestone, Banvel/Clarity
Cottonwood	Crossbow, Remedy Ultra, Pathfinder II, Banvel/Clarity
Elm	Crossbow, Remedy Ultra, Pathfinder II, PastureGard HL, Banvel/Clarity, Arsenal
Oaks	Remedy Ultra, Pathfinder II, PastureGard HL, Banvel/Clarity, Roundup PowerMax, Arsenal
Osage orange (hedge)	Remedy Ultra, Pathfinder II, PastureGard HL,
Persimmon	Remedy Ultra, Pathfinder II, PastureGard HL, Banvel/Clarity, Arsenal
Russian olive	Crossbow, Pathfinder II, Banvel/Clarity, Arsenal
Salt cedar	Remedy Ultra, Pathfinder II, PastureGard HL, Roundup Power Max, Arsenal

Tordon RTU and Pathway can be used on cut surfaces in noncropland areas such as fence rows, roadsides, and rights-of-way. However, Tordon RTU, and Pathway are not labeled for use on range and pasture. Glyphosate labels vary on what sites are labeled for cut-stump application on rangeland. Roundup PowerMax can be applied on any terrestrial site. Roundup WeatherMax can only be applied as a cut-stump treatment on non-cropland. Be sure to check the label as rangeland is sometimes included as a site under non-cropland on some glyphosate labels.

Application equipment for cut-stump application includes pressurized hand sprayers, small backpack sprayers, sprayer mounted on ATV with handheld gun, hydraulic tree shears or saws with an attached spray nozzle, or even a paint brush. Two of the more common pieces of equipment for cutting the woody plants are the turbo saw and the hydra clip.

Figure 1. Turbo saw on left and hydra clip on right.

Although exposure to animals is reduced by basal and cut-stump treatments, grazing and haying restrictions still need to be followed. There are no grazing restrictions before grazing with any of the herbicides discussed. Check labels for restrictions for use prior to hay harvesting, removal of animals before slaughter, and for use around lactating dairy animals.

Application tips for using cut-stump treatments:

- Always follow directions on the herbicide label.
- Before spraying, brush any sawdust or debris off cut surface.
- Apply herbicide to freshly cut stump.
- Spray cut surface and stump to ground level.
- Spray exposed roots above soil surface.
- The cambium layer is the critical area to spray.
- Apply enough liquid that it pools on cut surface.

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2. Soybean pests update

(Note: The following article is from K-State's "Kansas Insect Newsletter," August 25, 2016: http://entomology.k-state.edu/doc/extension-newsletters/2016/KSInsectNewsletter25.pdf – Steve Watson, Agronomy eUpdate Editor)

Green cloverworm larvae have been rapidly increasing all throughout the eastern two-thirds of Kansas. These worms are very well camouflaged and usually feed on the underside of leaves; thus, they are not always evident until holes start showing up in leaves.

Figure 1. Green cloverworm larva and feeding damage. Photos courtesy of Dept. of Entomology, K-State Research and Extension.

There has been concern about this leaf feeding, but generally an insecticide application may not be justified until the density reaches 10-12 larvae/ row ft. with about 30% defoliation, and larvae are still small (1/2 inch or less). However, in past years when those cloverworm densities have been achieved there has been an entomopathogenic fungus that rapidly decimates the populations.

This seems to be starting this year, as the first fungal-infected green cloverworm larvae were noticed on August 23 in several counties in Kansas. This fungus causes the green cloverworm larvae to stop feeding after 12-24 hours of infection and causes death 24-48 hours later. Sometimes, these infected larvae still look alive even in death, which is one of the characteristics of this fungus. There will probably be at least one more generation of green cloverworms to come.

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Don't forget to continue monitoring for adult bean leaf beetles, stink bugs, and podworms, all of which may feed on pods and/or seeds. There will probably be one more generation of podworms this year. For more information on soybean pests please see *Soybean Insect Management 2016*, available here: https://www.bookstore.ksre.ksu.edu/pubs/MF743.pdf

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3. Sorghum pests update

(Note: The following article is from K-State's "Kansas Insect Newsletter," August 25, 2016: http://entomology.k-state.edu/doc/extension-newsletters/2016/KSInsectNewsletter25.pdf – Steve Watson, Agronomy eUpdate Editor)

Double cropped sorghum may still have some fall armyworm "ragworm" feeding during the whorl stage. In addition, there will probably be at least one more generation of headworms. Thus, later-planted sorghum needs to be monitored for headworms between flowering and soft dough, when it is vulnerable.

Also, continue monitoring for aphids as there still seems to be a mixture of greenbugs, corn leaf aphids, yellow sugarcane aphids, and sugarcane aphids on sorghum. Some of the fields treated for headworms have reduced numbers of beneficials so the beneficials may not be present in sufficient numbers to help control these aphids. However, some of the fields sampled this week (Aug. 22-25) that were sprayed for headworms at least 2 weeks ago had pretty good populations of beneficials already building back up.

Photos courtesy of Dept. of Entomology, K-State Research and Extension.

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4. 2016 Kansas Wheat Seed Book now available

The *2016 Kansas Wheat Seed Book* is now available. In this book, you will find a recap of the 2015-16 wheat crop, with a detailed discussion of factors that may have played an important role in the record-breaking yields observed across the state. More importantly, the results of the 2016 wheat variety performance tests are also shown.

Producers and crop consultants can use this resource to help select wheat varieties for their operation by checking for varieties that show a consistently good performance in their region. After selecting a few, well-adapted varieties, just flip to the second half of the book to find the contact for certified seed producers who carry the seed of the varieties you would like to plant.

Click here to access the online version of the variety performance test results, or here for the certified seed directory. For a hard copy, please contact your local extension office.

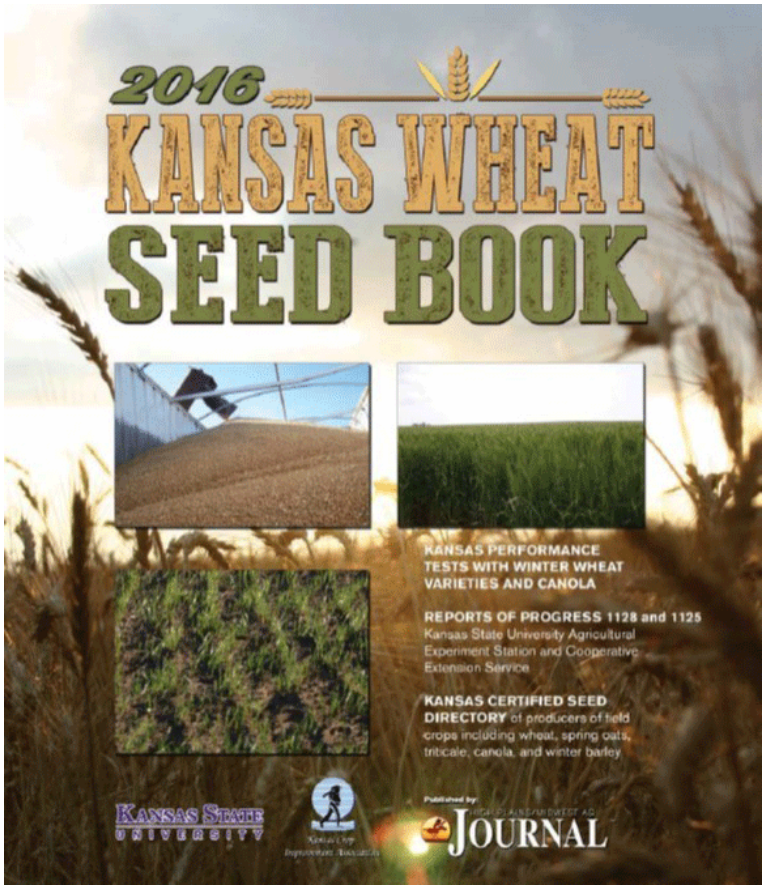

Figure 1. The 2016 Kansas Wheat Seed Book **is now available, with the report of the 2016 wheat variety performance tests and the certified seed directory.**

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5. Pre-plant wheat schools, August 30

Two pre-plant wheat schools will be held on Aug. 30. K-State speakers will discuss production practices, yield results, and variety selection. For more details on each school contact the local extension agent host.

August 30, Wilson, Made from Scratch Café, 10:00 a.m. – Noon, lunch served, register by August 26. Contact Michelle Buchanan, 785-472-4442, mbuchanan@ksu.edu

August 30, Great Bend, American Ag Credit, 2:30 p.m. Contact Alicia Boor, 620-793-1910, aboor@ksu.edu

6. South Central Kansas Experiment Field fall field day, August 30

The South Central Kansas Experiment Irrigation Field near Hutchinson will host its fall field day on Tuesday, August 30. The field day begins at 5 p.m. with registration. A complimentary meal will be served after the presentations, courtesy of Agri-Business Committee of the Hutchinson/Reno County Chamber of Commerce and Dow AgroSciences, LLC. Pre-registration to obtain a head count for the meal is requested by Friday, August 26 by contacting Gary Cramer at 620-662-9021 or gcramer@ksu.edu.

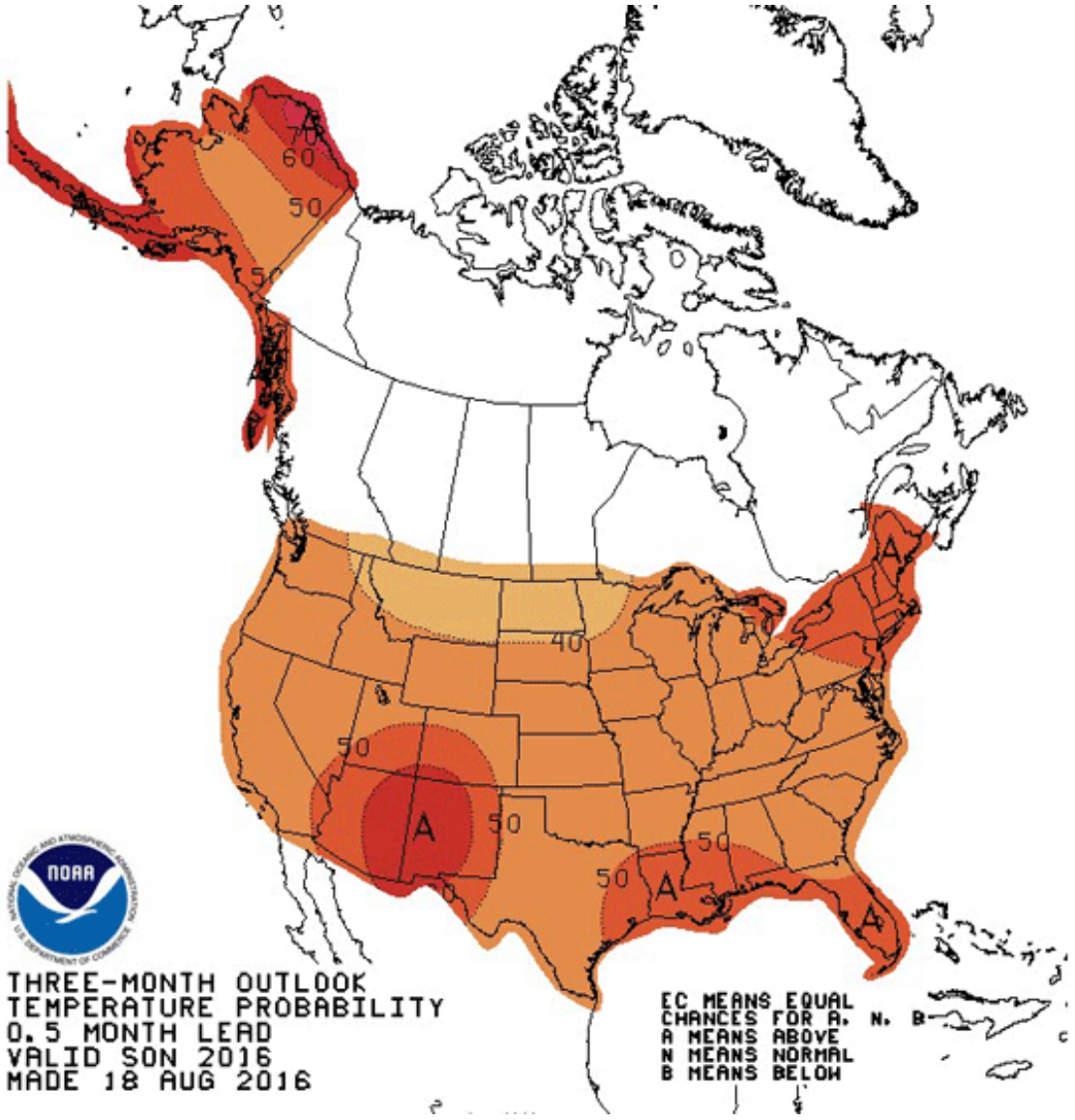
Field day topics and presenters include:

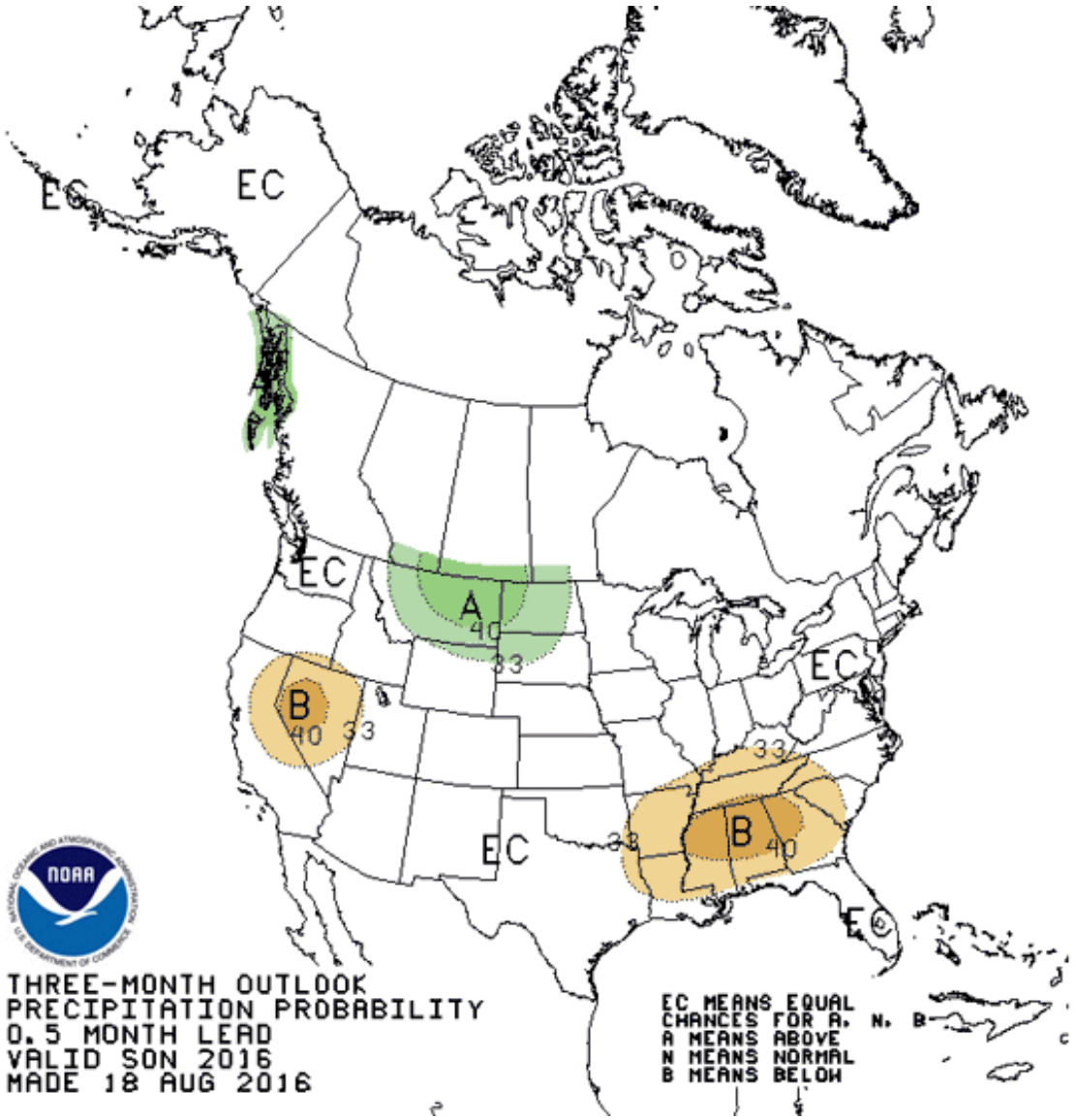
- Review of Growing Season Conditions – Gary Cramer, Agronomist-in-Charge, South Central Kansas Experiment Field
- Atrazine registration review and comment period – Greg Krissick, CEO, Kansas Grain Sorghum
- Development of optical sensor based nitrogen recommendations for corn-- Ashley Lorence, Agronomy Graduate Student
- Weed Control Program in Enlist Corn – Gary Cramer, South Central Kansas Experiment Field
- Update on Enlist products from Dow AgroSciences – Kristin Rosenbaum, Dow AgroSciences
- Re-evaluation of recommended corn seeding rates in corn – Ignacio Ciampitti, Crop Production and Cropping Systems Specialist
- Herbicide programs for Inzen grain sorghum – Curtis Thompson, Weed Management Specialist

The field day will be held at the irrigation field, approximately 2 miles south of Partridge on Highway 61, at the intersection of Highway 61 and Red Rock Road, on the east side of the road. The field address is 9314 W. K-61 Highway.

7. Fall weather outlook

As August fades, interest is growing in the fall weather outlook. The National Oceanic and Atmospheric Administration's Climate Prediction Center has just released its September-November outlook:





The strongest signal is in the temperature outlook. However, there are several difficulties with this forecast. First is that this forecast is the average for the 3 months of September, October, and November. If temperatures are warmer than normal in September, but cooler than normal in November, you could still see a warmer-than-normal 3-month average. Another difficulty is that the outlook doesn't indicate the degree of departure. Warmer-than-normal conditions could be by just a tenth of a degree, or the departure could reach 10 degrees (although the latter is not likely). The third difficulty is most visible in the precipitation outlook, where equal chances dominate. Autumn is a shoulder season, where we switch dominate weather patterns, and these are the most difficult patterns to forecast accurately.

An additional difficulty is that one of the major global patterns that helps increase the accuracy of the forecast is in a neutral phase. That, of course, is the ENSO -- El Niño Southern Oscillation. The ENSO, which currently shows sea surface temperature below normal, is expected to develop into La

Niña conditions by late fall. However, the La Niña isn't expected to be strong, and its influence in Kansas during the winter is only weak.

Changes in the forecast and outlooks can be found on the Climate Prediction Website: http://www.cpc.ncep.noaa.gov/

Updates on Kansas climate can be found at http://climate.k-state.edu/

And updates on current weather can be found at http://mesonet.k-state.edu/

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8. Comparative Vegetation Condition Report: August 16 - 22

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:

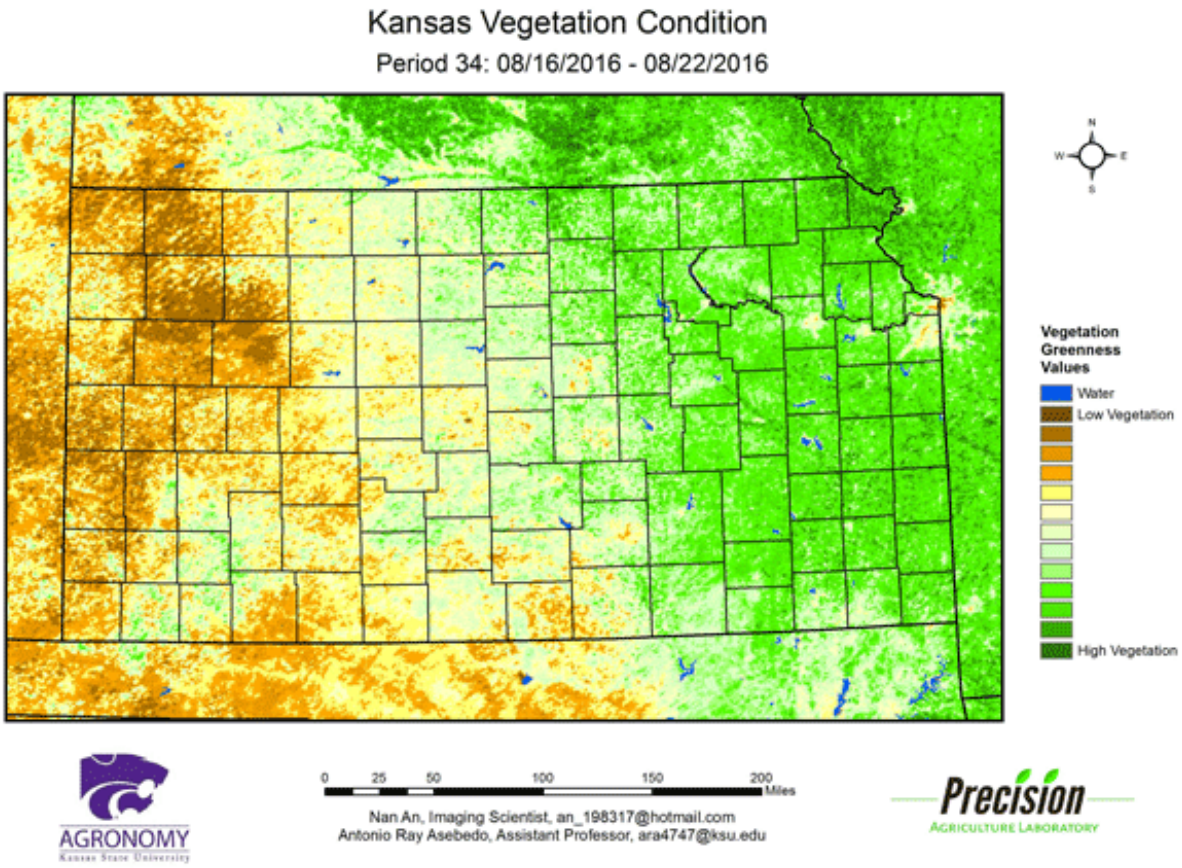

Figure 1. The Vegetation Condition Report for Kansas for August 16 – August 22, 2016 from K-State's Precision Agriculture Laboratory continues to show high NDVI values across the eastern third of the state. Low NDVI values are most visible in parts of northwest and west central Kansas. The latest drought monitor has introduced moderate drought in Rawlins County.

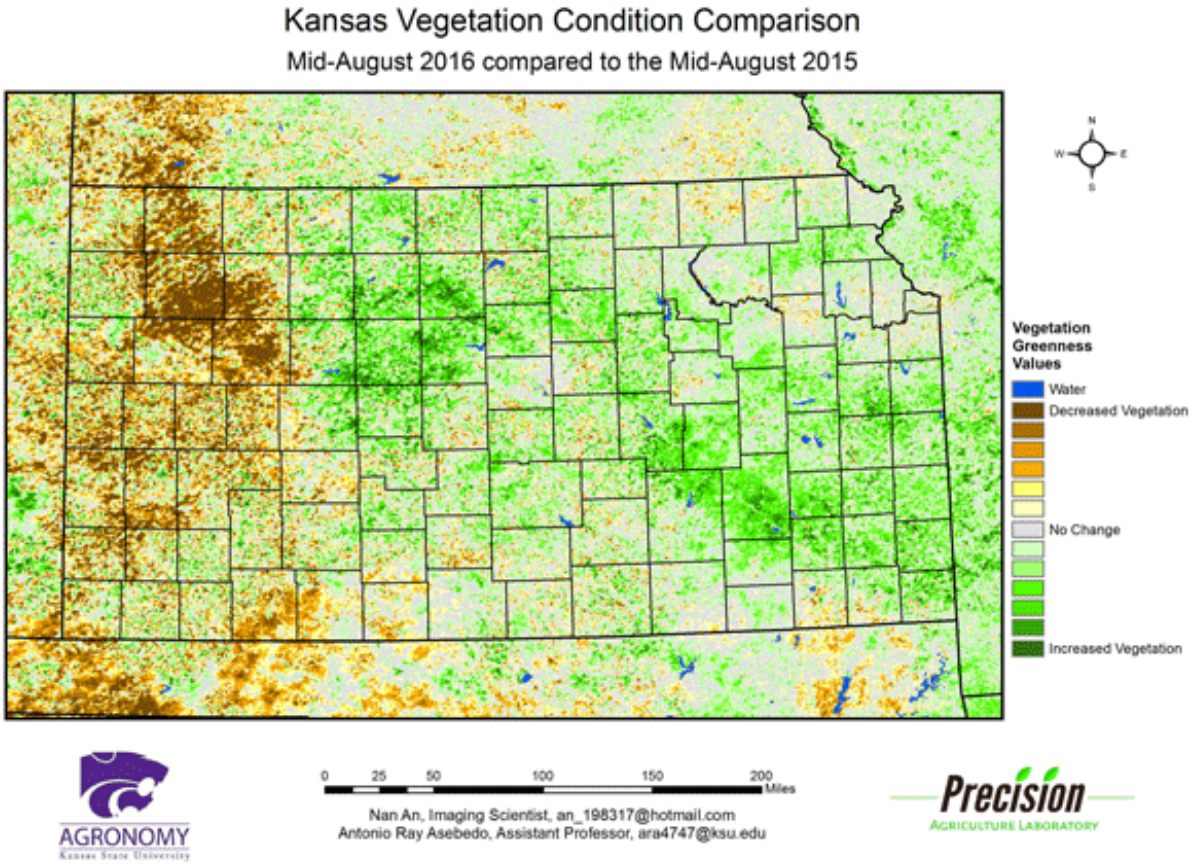

Figure 2. Compared to the previous year at this time for Kansas, the current Vegetation Condition Report for August 16 – August 22, 2016 from K-State's Precision Agriculture Laboratory shows vegetative production is much higher across most of the state. Photosynthetic activity is lower, however, in northwest Kansas. Despite recent cool weather, crops are ahead of last year's development.

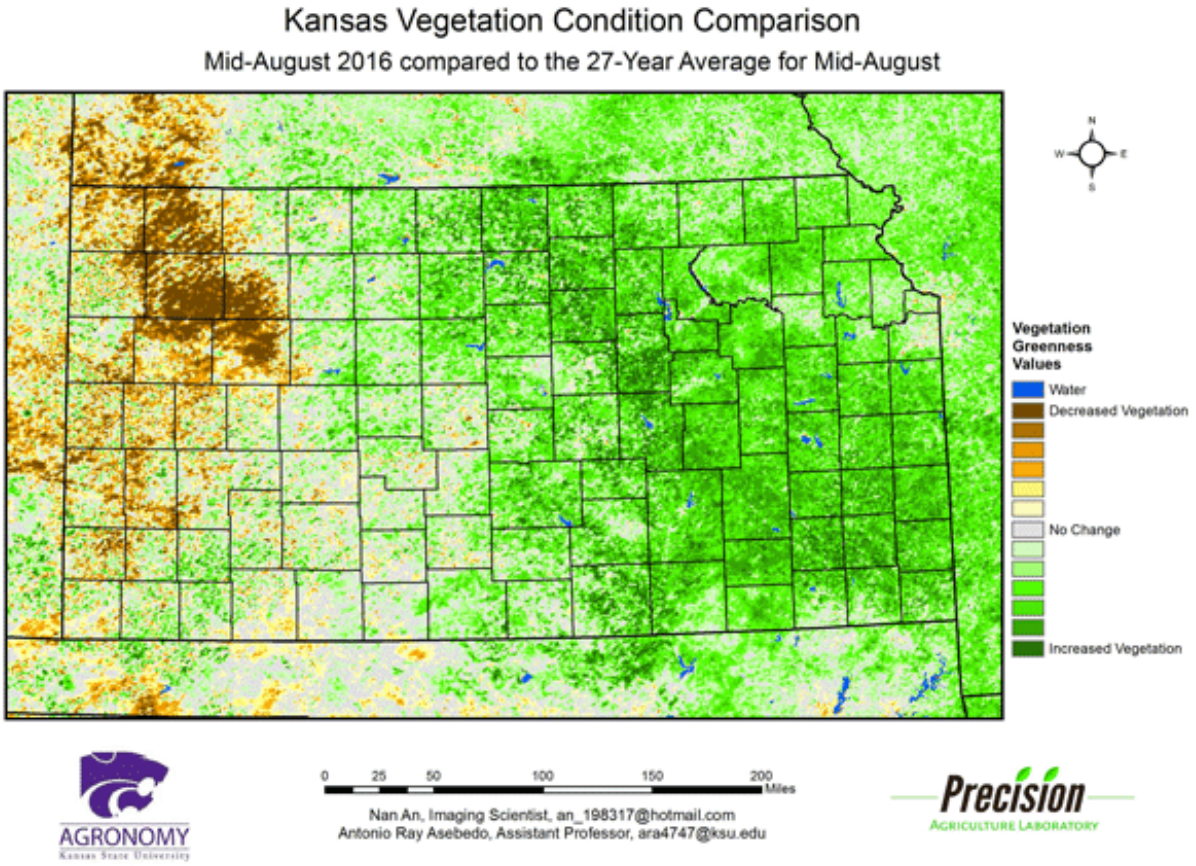

Figure 3. Compared to the 27-year average at this time for Kansas, this year's Vegetation Condition Report for August 16 – August 22, 2016 from K-State's Precision Agriculture Laboratory shows below-average vegetative activity continues to be most evident in Rawlins, Thomas, and Sheridan counties in northwest Kansas. Moderate temperatures and seasonal rainfall have favored plant growth across most of the state.

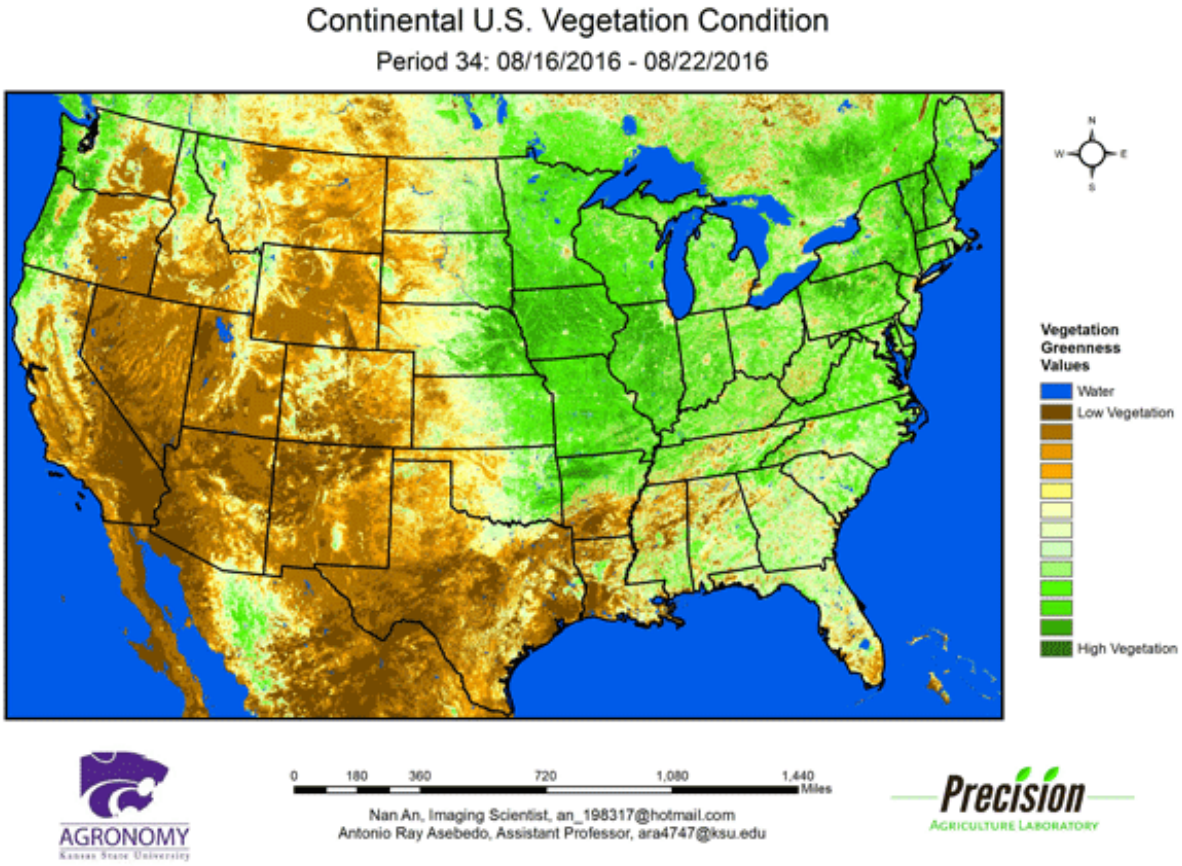

Figure 4. The Vegetation Condition Report for the U.S for August 16 – August 22, 2016 from K-State's Precision Agriculture Laboratory shows high NDVI values in the western Corn Belt, particularly Iowa and eastern Nebraska. Favorable rainfall and more seasonal temperatures continue to favor photosynthetic activity across the region. The low NDVI values from northwest Arkansas through the Ohio River Valley are due to excessive rains in the region, as are the low vegetative growth values in southern Louisiana. The region is still experiencing high waters/flooding from the recent rains.

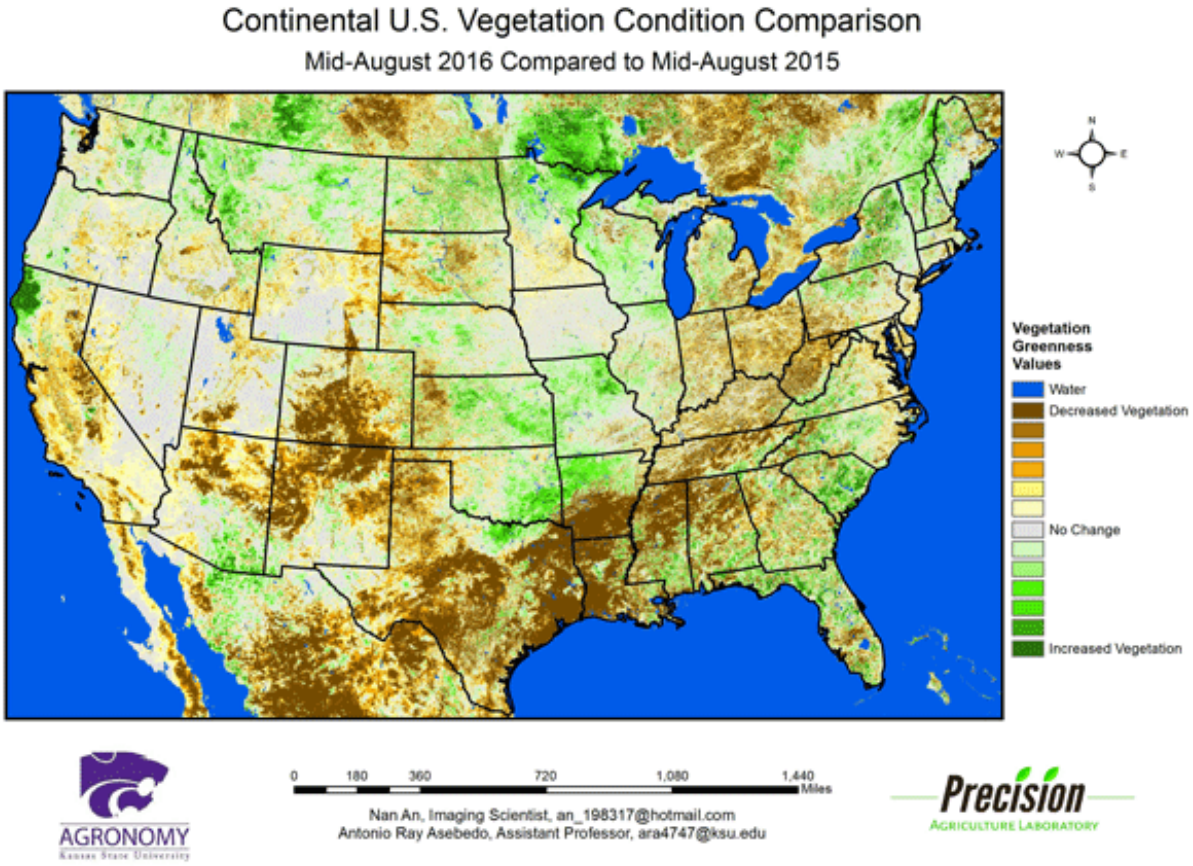

Figure 5. The U.S. comparison to last year at this time for August 16 – August 22, 2016 from K-State's Precision Agriculture Laboratory shows that lower NDVI values continue across much of the Southern U.S. west of the Rockies. Persistent cloud cover and rain continues to mask vegetative activity in the region. In contrast, the low NDVI values in eastern Wyoming, western Nebraska, and much of South Dakota are due to the increasing drought in these areas. There is a small pocket of much higher vegetative activity in northern California, where favorable rains have reduced some of the long-term drought impacts in the region.

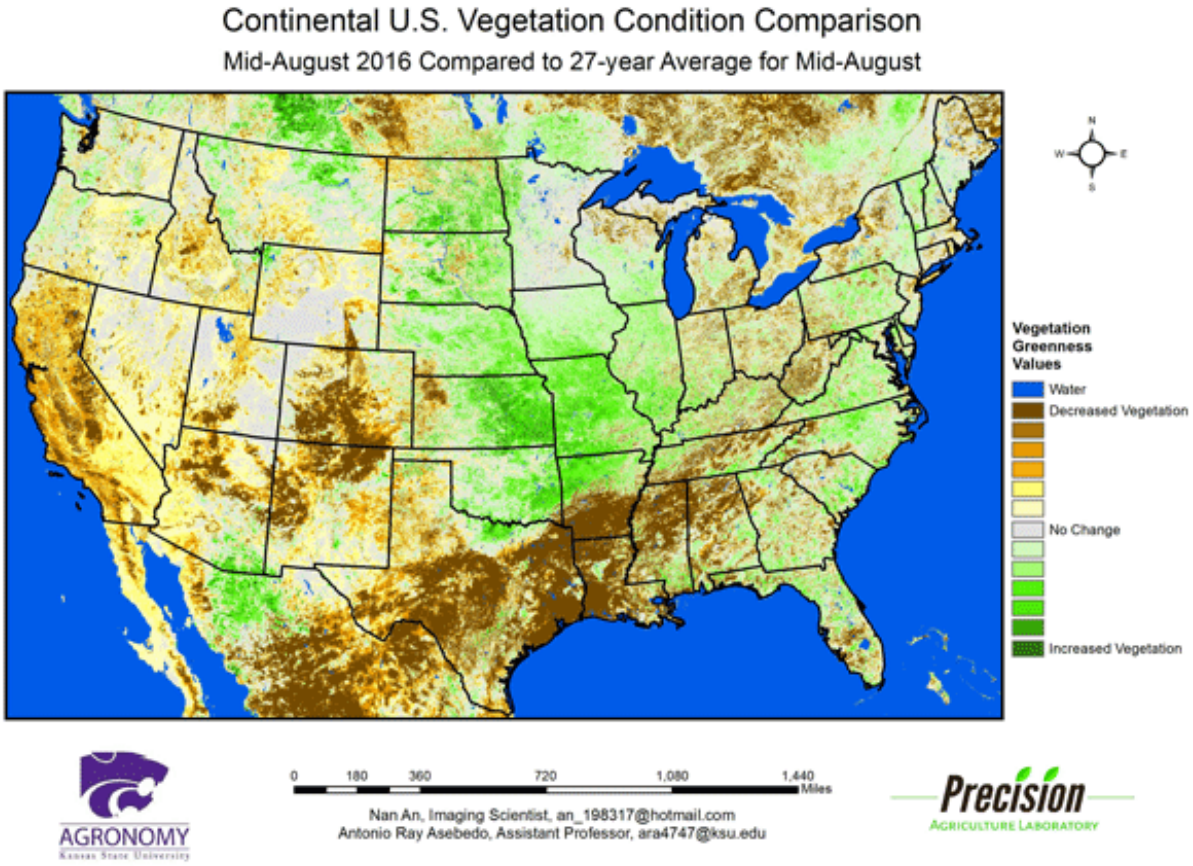

Figure 6. The U.S. comparison to the 27-year average for the period August 16 – August 22, 2016 from K-State's Precision Agriculture Laboratory shows areas of below-average NDVI readings in the Desert Southwest. Onset of the monsoon season has resulted in heavy rains and persistent clouds in the area. Similar patterns can be seen along the Gulf Coast and the mid-Atlantic. Flooding continues to be an issue in Louisiana. Concerns are increasing that continued wet weather will result in harvest delays in the Corn Belt.

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