



K-STATE
Research and Extension

Extension Agronomy

eUpdate

01/16/2015

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, Jim Shroyer, Crop Production Specialist 785-532-0397 jshroyer@ksu.edu, or Curtis Thompson, Extension Agronomy State Leader and Weed Management Specialist 785-532-3444 cthompso@ksu.edu.

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1. Kochia control in early spring

Producers should begin soon in planning their program for controlling kochia. The spread of glyphosate-resistant kochia populations throughout western Kansas, and the difficulty growers have had controlling these populations, suggest that perhaps control measure should begin prior to emergence of kochia.

Major flushes of kochia emerge in early March and into April. If allowed to emerge, postemergence herbicide applications often will not provide adequate control. Incomplete control of these dense populations (see photo below) is likely in these situations. When the kochia is glyphosate-resistant and complete herbicide coverage is not possible, results can be very poor when trying to use postemergence products to control dense populations. The dense populations may also be stressed, which reduces the effectiveness of postemergence herbicide applications.

The choice of herbicides for effective preemergence control of kochia in late February and early March will vary depending on subsequent cropping intentions. Various cropping scenarios are discussed below.

Note: All charts in this article are based on data from irrigated plots at the K-State Southwest Research-Extension Center at Tribune, and with populations of kochia that are susceptible to triazines. The kochia at this site is a mixed population of glyphosate-resistant and susceptible plants.



Untreated kochia seedlings amid residue. Photo by Curtis Thompson, K-State Research and Extension.

Fields going to corn or sorghum this spring

For fields that will be planted to corn and sorghum this spring, a combination of glyphosate (using a minimum of 0.75 lb ae/acre) with herbicides that have PRE and POST activity on kochia is most valuable. Tank mixing 8 to 16 oz of dicamba with or 1 to 2 pints of atrazine will control small kochia, and other existing broadleaf and grass weeds, and will provide extended preemergence control into May as shown in Figures 1 and 2. An application of Clarity alone, shown in Figure 1, suggests that a pint provides better control than 8 oz, however a combination of atrazine and Clarity is better than Clarity alone.

The best timing for this application is late February to the first week or two of March. The later it gets, the more likely it is there will be some small, emerged kochia, which increases the risk of failure. If producers wait until later to apply the burndown and preemergence herbicide in the same application, the kochia will be larger and most likely will not be controlled. If that occurs, the surviving plants will go on to cause problems throughout the growing season.

Figure 1. Early Preplant herbicides applied March 16, 2012 for kochia control, Tribune, KS.

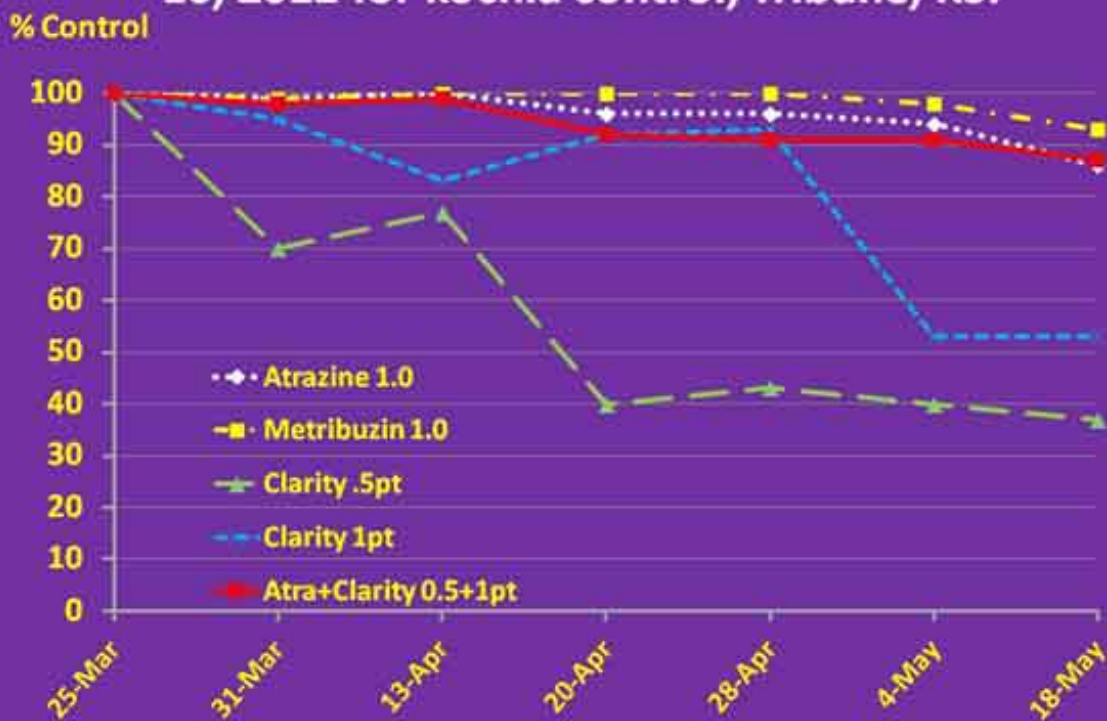
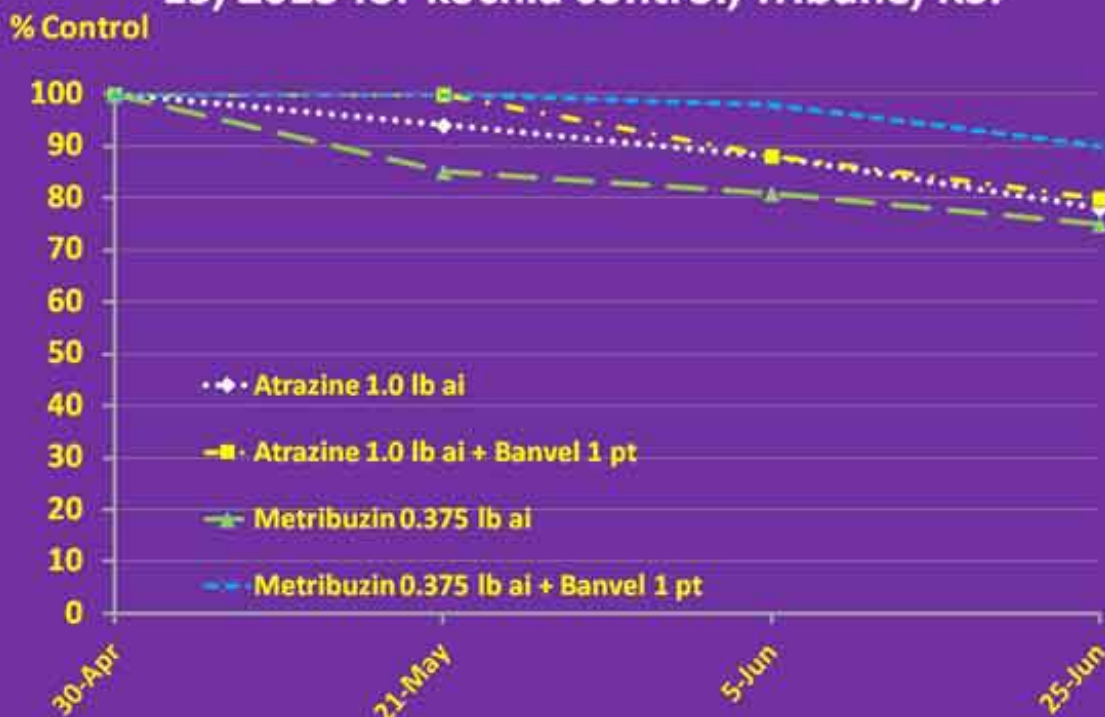


Figure 2. Early preplant herbicides applied March 15, 2013 for kochia control, Tribune, KS.



Other herbicides that could be tankmixed with the glyphosate ahead of corn or sorghum include Lexar EZ or Lumax EZ, or for corn only 3 to 4 fl oz of Corvus, Balance Flexx shown in Figures 3 and 4 or 1.5 to 2.5 oz of Scoparia herbicide. The addition of atrazine is key for most effective control with these herbicides. The addition of Banvel did not increase kochia control with Corvus+atrazine or Balance Flexx+atrazine in 2012, Figure 3. When marginal rainfall is received for the initial activation, Banvel, which is very soluble, is able to be activated and provide significant kochia control while atrazine and other herbicides may not be activated. This buys time for additional rainfall and full activation of all the herbicides.

Figure 3. Early preplant herbicides applied March 16, 2012 for kochia control , Tribune KS.



Fields going to sunflower this spring

Planting sunflower into a clean seedbed is a key step to getting good season-long control of all broadleaf and grassy weeds. But it is especially important for getting good control of any weed populations, such as kochia, that are resistant to glyphosate or ALS-inhibitor herbicides and cannot be controlled with POST applied herbicides in sunflower.

The best approach to kochia control in sunflower is to start in March with a tankmix of glyphosate (using a minimum of 0.75 lb ae/are) and Spartan (sulfentrazone), Spartan Charge (sulfentrazone+Aim), or Broadaxe (sulfentrazone+Dual Magnum) before kochia begin to germinate. The sulfentrazone will provide excellent preemergence control of kochia ahead of sunflower planting. Figure 5 indicates that 6 oz of Spartan controlled kochia very effectively in the Tribune experiments up to early June. It is very possible that as little as 4 oz could have done a similar job at the Tribune location because of the 7.8 pH and 1.8% organic matter soil. The label does not allow a March application of dicamba when intending to plant sunflower. Monitor fields closely as additional glyphosate or Gramoxone SL treatments maybe required prior to sunflower planting. Select preemergence products that are effective on kochia and apply at planting to extend control of kochia and other weeds.

Figure 5. Early preplant herbicides applied March 16, 2012 for kochia control, Tribune, KS.



Fields going to soybeans this spring

The best management strategy for controlling kochia in soybeans is similar to the control strategy for sunflower, but there are more herbicide options in soybeans than in sunflower. Start in March with a tankmix of glyphosate (using a minimum of 0.75 lb ae/acre) and 8 to 16 oz/acre of Clarity. The use of Clarity requires a minimum accumulation of 1 inch of rain and then 28 days prior to planting soybeans. As indicated in the label, Clarity cannot be used as a preplant treatment in soybeans in areas with less than 25 inches of annual rainfall.

Gramoxone Inteon tankmixed with metribuzin (Dimetric, Metribuzin, Sencor) will control very small kochia and metribuzin will provide extended residual control of kochia, as long as the population of kochia is susceptible to triazine herbicides.

Figure 1 shows the effectiveness of a full pound of metribuzin. Figure 2 shows the effectiveness of 3/8 lb of metribuzin alone or with dicamba which provided residual kochia control into May, especially when dicamba was added. Metribuzin can injure soybeans depending on soil texture, organic matter and soil pH, so be sure to follow label guidelines regarding soil characteristics and rate guidelines regarding use rate on soybeans.

Authority-based herbicides that contain sulfentrazone could be considered for use in March to manage an early flush of kochia. It's important to note crop rotation restrictions on these products, however. The Valor-based products have not provided adequate control of kochia (see Figure 5). Other Authority-based products applied in March of 2013 did provide excellent control of kochia well

into June (Figure 6). Also, Zidua has activity on kochia. It appears that more rain is required for activation of Zidua; however, once activated, no additional kochia emerged. For adequate kochia control with Zidua, using maximum labels rates for your soil type would be recommended.

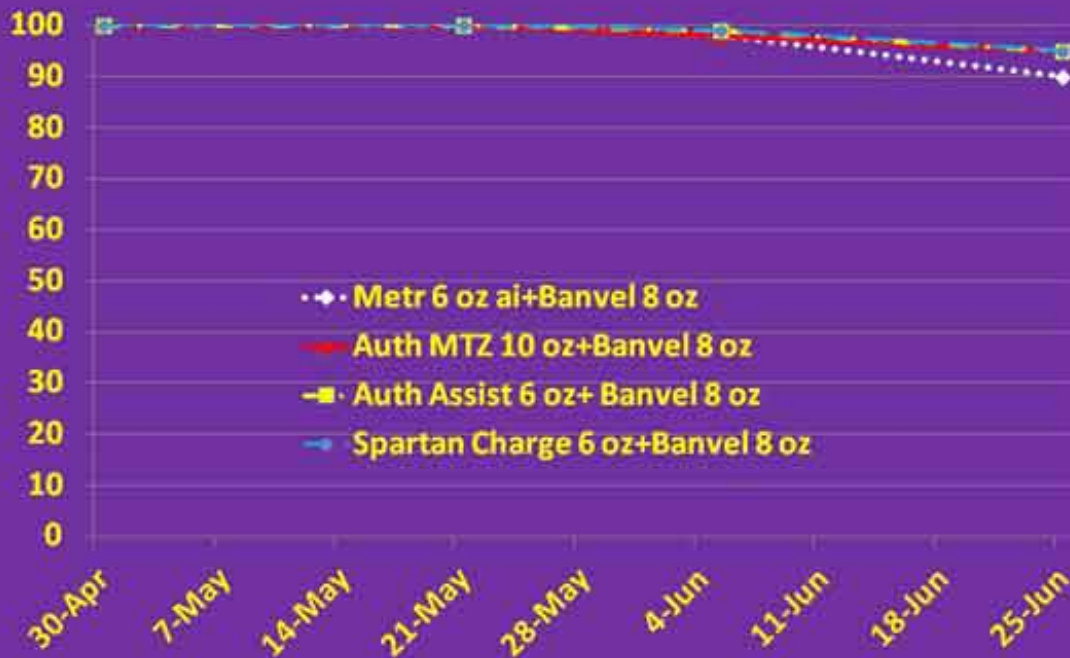
Fields going to wheat this fall

If kochia is emerging in row crop stubble intended to be planted to wheat this fall, herbicide options exist that provide residual kochia control. Atrazine cannot be used in this situation, as this treatment is off-label. The following herbicides could provide effective residual control of kochia for fields to be planted to wheat this fall: dicamba, metribuzin or Dimetric (Dimetric label indicates $\frac{1}{2}$ to $\frac{2}{3}$ of a pound), Corvus, Balance Flexx, Scoparia (equal to Balance Pro), and Lumax EZ. These products allow wheat to be planted 4 months following application. Effectiveness of some of these herbicide treatments is shown in Figures 1, 2, 3, 4, 6, and 7.

These treatments can be effective when made prior to kochia emergence. A November application of 1 lb of atrazine was effective through June 12, however, this treatment is labeled only if corn or sorghum will be planted the following year. The November application of Corvus was not adequate. The addition of metribuzin to Corvus would have improved kochia control. HPPD inhibitors should always be applied with a triazine. Only metribuzin, which is a triazine, can be applied in the late fall or early spring when wheat will be planted in the fall. February and March applications of Corvus and metribuzin were very similar and effective. This suggests that if weather cooperates and a window for application is available in February, getting these early treatments applied at that time could be beneficial.

Figure 6. Early preplant herbicides applied March 15, 2013 for kochia control ahead of soybean, Tribune, KS.

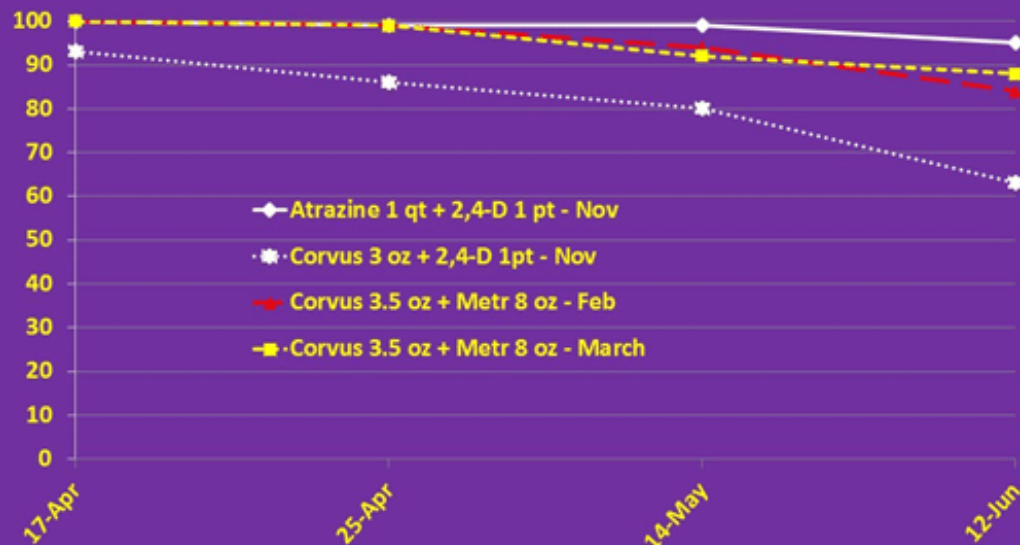
% Control



Banvel can not be used ahead of soybean in areas with less than 25" of annual rainfall.

Figure 7. Herbicides applied Nov 20, 2013 and Feb 16 and March 15 2014 for kochia control in fallow, Tribune, KS.

% Control



Fields of standing wheat

If kochia is emerging in a field of growing wheat, the options for control depend on whether the

population of kochia is susceptible or resistant to ALS-inhibitor herbicides and whether wheat has reached the jointing stage. There are three big challenges to kochia control in wheat:

- There are many populations of kochia with resistance to either ALS-inhibitor herbicides, or glyphosate. There may even be some populations resistant to dicamba.
- A majority of kochia emerges early in the spring, but some emergence can extend over a period of weeks or months. An herbicide applied early in the spring will need to have residual activity to be effective on later-emerging kochia. Several ALS-inhibitor herbicides have good residual activity, but are ineffective on ALS-resistant kochia.
- Dicamba, a non-ALS herbicide is one of the more effective products on most populations of kochia, but must be applied before the jointing stage of wheat.

Many populations of kochia present in wheat in western Kansas are resistant to ALS-inhibitor herbicides, however ALS inhibitor herbicide tank mixtures with dicamba or herbicides containing Starane can be very effective to control kochia. In general, 2,4-D, MCPA, Aim, and Cadet, are not very effective in controlling kochia.

Additional products containing dicamba include Rave (Amber + dicamba) or Pulsar (Starane + dicamba). These products have to be applied before the jointing stage of wheat. Dicamba has some residual soil activity, but not as much as most sulfonylurea herbicides. Rave will have residual activity from the Amber, but since Amber is a sulfonylurea herbicide, it would not provide any residual control of kochia populations that are resistant to ALS-inhibitor herbicides. Both ingredients in Pulsar have limited residual activity.

As mentioned above, another option producers have for kochia control is Starane or other fluroxypyr products. Like dicamba, Starane is a growth regulator herbicide, but it can be applied up to the early boot stage of wheat. Starane also has limited residual activity, so good coverage is still important for control. Starane is weak on mustard control.

Huskie is also effective on kochia. It is a broad-spectrum herbicide effective on most broadleaf weeds in wheat, and can be applied up to the boot stage of wheat. Huskie also has limited residual activity, so producers will need to make sure kochia plants are thoroughly covered with Huskie to get the best control. Ideally, the Huskie should be timed for application after the majority of kochia has emerged, but before the wheat canopy affects good spray coverage.

Buctril can control kochia and can be applied at later stages of wheat development, but is a contact herbicide with no soil residual activity. Consequently, Buctril has the same kind of challenges as Starane and Huskie in terms of getting good coverage. Getting thorough coverage is even more critical with Buctril since it is a true contact herbicide and not translocated in plants. Buctril is effective on very small kochia only.

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2. Winter/spring options for winter annual broadleaf control in wheat

There are several herbicide options for controlling winter annual broadleaf weeds in wheat.

Generally, fall applications will provide the best control of winter annual weeds with any herbicide, as long as the weeds have emerged. The majority of winter annual weeds usually will emerge in the fall, although you can still have some emergence in the spring, especially if precipitation after planting is limited in the fall. However, winter annual weeds that emerge in the spring often are not very competitive with the crop, at least in years when there is a decent crop.

Some herbicides can work well even when applied during the dormant part of the season, while others perform best if the crop and weeds are actively growing. The key difference relates to the degree of soil activity provided by the herbicide. Herbicides that have good residual activity, such as Glean, Finesse, Amber, and Rave can generally be applied in January and February when plants aren't actively growing and still provide good weed control, assuming you have proper conditions for the application. Most other herbicides, which depend more on foliar uptake, will not work nearly as well during the mid-winter months, when the wheat and weeds aren't actively growing, as compared to a fall or early spring application. This may be especially true this year due to the colder temperatures and dieback of foliage this winter.

Spring herbicide applications can be effective for winter annual broadleaf weed control as well, but timing and weather conditions are critical to achieve good control. Spring applications generally are most effective on winter annual broadleaf weeds soon after green-up when weeds are still in the rosette stage of growth, and during periods of mild weather. Once weeds begin to bolt and wheat starts to develop more canopy, herbicide performance often decreases dramatically.

Spring-germinating summer annual weeds often are not a serious problem for a good healthy stand of wheat coming out of the winter. However, if wheat stands are thin and the wheat is very late developing, early-germinating summer annual weeds such as kochia, Russian thistle, and wild buckwheat may be a problem, especially at harvest time. Many of these weeds may be controlled by residual herbicides applied earlier in the season. If not, postemergence treatments should be applied soon after weed emergence and before the wheat gets too large in order to get good spray coverage and achieve the best results.

Another important consideration with herbicide application timing is crop tolerance at different application timings. For example, 2,4-D should not be applied in the fall or until wheat is fully tillered in the spring. On the other hand, any herbicide containing dicamba can be applied after wheat has two leaves, but should not be applied once the wheat gets close to jointing in the spring. Herbicides containing dicamba include Banvel, Clarity, Rave, Pulsar, Agility SG, and several generic dicamba products. Dicamba is one of the most effective herbicides for kochia control, but if the wheat is starting to joint, it shouldn't be applied. At that point, Starane Ultra or other herbicides containing fluroxypyr would be a safer option and could still provide good kochia control. Most other broadleaf herbicides in wheat can be sprayed from the time that wheat starts tillering until the early jointing stages of growth, but the label should always be consulted to confirm the recommended treatment stages before application.

The best advice regarding crop safety with herbicide-fertilizer combinations and application timing is to follow the label guidelines. We generally see minimal crop injury and no yield loss from topdress

fertilizer/residual herbicide applications during the winter months. However, these combinations can often cause considerable burn to the wheat if applied when the crop is actively growing and with warmer weather. The foliar burn is generally temporary in nature and the wheat usually will recover if good growing conditions persist.

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3. Cover Your Acres Conference in Oberlin, January 20-21

K-State Research and Extension is teaming up with the Northwest Kansas Crop Residue Alliance to host the 12th annual Cover Your Acres Winter Conference for crop producers and consultants Jan. 20-21 at the Gateway Center in Oberlin, Kansas. The same program will be offered both days of the conference.

Cover Your Acres is a producer-driven meeting focused on new ideas and research-based updates in crop production in northwest Kansas and the central High Plains.

The conference, which typically draws more than 600 attendees from Kansas and other states, highlights the latest technology, methods and conservation practices to improve crop production in the region. This year it will feature university specialists and industry representatives discussing issues such as kochia control, cover crops and soil microbiology, drought-tolerant corn, wheat growth and development effects on yield, the Ogallala Aquifer, implications of the new farm bill and crop insurance. Registration will begin at 7:45 a.m., with educational sessions ending at 5:00 p.m. followed by a “bull session” on Tuesday evening, where attendees can visit with industry and university specialists.

After Jan. 14, the cost is \$50 per day. The conference fee includes lunch and educational materials. Continuing education unit credits are available for commercial applicators and certified crop advisors.

Mail your registration, with a check payable to KSU, to the Northwest Area Office, ATTN: Cover Your Acres, P.O. Box 786, Colby, KS 67701. To view the conference details and for online registration, visit www.northwest.ksu.edu/coveryouracres. For questions, call 785-462-6281.

Major sponsors of the conference include Bayer CropScience, Frontier Ag, Hoxie Implement, Lang Diesel, Monsanto, National Sunflower Association, Pacleader Technology, Plains Equipment Group, Simplot Grower Solutions, Sims Fertilizer, Simpson Farm Enterprises and Surefire Ag Systems.

4. Kansas Ag Technologies Conference Set for Jan. 22-23 in Salina

The Kansas Ag Research and Technology Association (KARTA) and K-State Research and Extension would like to announce that the 18th Annual Kansas Agricultural Technologies Conference will be held January 22-23, 2015 in Salina at the Ambassador Hotel and Conference Center, 1616 W. Crawford St.

This annual event brings hundreds of agricultural producers and industry leaders for a two-day interactive workshop on the ever-changing precision agriculture industry. Those in attendance at the conference will hear presentations from dynamic speakers on a wide variety of topics dealing with precision agriculture. The two-day event also includes vendor displays, the KARTA Annual Meeting, research presentations from grant recipients, and an interactive evening discussion that is always an attendee favorite.

The conference is co-sponsored by K-State Research and Extension and the Kansas Agricultural Research and Technology Association, whose members are producers, university researchers and industry professionals focused on learning about agricultural production and technological and informational changes on today's farms.

There is a fee for this conference, and you must register. More information, including online registration is available at www.KARTAonline.org. Information is also available by contacting Lucas Haag, K-State Research and Extension Northwest Area Crops and Soil Specialist, at 785-462-6281 or lhaag@ksu.edu

Eighteenth Annual
**Kansas Agricultural
Technologies Conference**
Salina Ambassador Hotel & Conference
Center 1616 W. Crawford St
Salina, Kansas
January 22-23, 2015

The following schedule of events is subject to
change. Visit www.KARTAonline.org for updates.
THURSDAY JANUARY 22nd

8:00 Registration/Coffee & Rolls
8:45 Welcome & Announcements
Steve Arnold, KARTA President
9:00 Precision Ag Perspectives of a
Researcher, Consultant, Farmer
Chad Godbey, Godsey Precision Ag
10:00 Vendor Presentations
10:30 Break
10:45 Inter-Plant and Inter-Row Yield
Variability
Bob Recker, Cedar Valley Innovation
11:45 Vendor Presentation
12:00 Lunch
1:00 Vendor Presentation
1:15 KARTA Research Presentations
2014 Grant Recipients
2:30 Break
3:00 Determining the Economically Optimal
Level of Control on Sprayers & Planters
Craig Smith, Fort Hays State University
4:00 Vendor Presentations
4:30 Break
4:45 KARTA Annual Business Meeting

6:00 Dinner & Social
7:30 Pushing Yield Frontiers
Ignacio Ciampitti, Kansas State
University

FRIDAY JANUARY 23th

8:00 Coffee & Rolls
8:30 Sensing Plant Stress with Thermal
Imagery: Developments at KSU
Devin Mangus & Ajay Sarda,
K-State Bio & Ag Engineering
9:30 Vendor Presentations
10:00 Break
10:15 Putting vJAV's to Work
Troy Grimes, A+ Ag Consulting
11:15 KARTA Research Presentations
2014 Grant Recipients
12:15 Lunch
1:15 Spatial Perspectives of Soil Testing
Lucas Haag, K-State Research & Extension
1:45 Automated Soil Testing
ProducerPanel
2:15 Break
2:30 KARTA Research Presentations
2014 Grant Recipients
3:45 Conference Wrap-Up & End Statement

CCA CREDITS

CCA credits will be applied for.

2014 RESEARCH PROJECTS

Possible Research Presentation Topics
No-Till Irrigated Corn Population & Density
Ascend on Corn
Twin Row Irrigated Corn in Northwest
Kansas
Wheat Seeding Population Study
Milo Seeding Rate
Ascend on Wheat (3)
Honey Soil Test Evaluation
Oat Cover Crop Before Soybeans
Cover Crop Mix Before Corn
Winter Canola Population
Pop-Up Fertilizer on Corn

CONNECT WITH US
We exist to help ensure a bright future for the
agricultural industry, and we need YOU to join
the conversation.
✉ media@kartaonline.org
🌐 www.KARTAonline.org

REGISTRATION FORM

Name: _____
Organization: _____
Address: _____
City, St. _____
Phone: _____
Email: _____

Please make the appropriate registration selection.
Fees include lunch both days, dinner on Thursday,
and refreshments during the breaks for one person.
No refunds after January 15, 2015.

\$225 \$225 Conference Registration
Make payable to Kansas Ag Research
& Technology Association (KARTA)

\$50 Discount if Postmarked before
January 15, 2015

If you would like to obtain or renew a KARTA
Membership, please mark the following:

\$100 2015 KARTA Membership

\$50 Discount for KARTA Members

Total Enclosed

KARTA Complete and return by mail
KARTA
6009 K Rd.
Ness City, KS 67560

OR try ONLINE REGISTRATION
www.KARTAonline.org

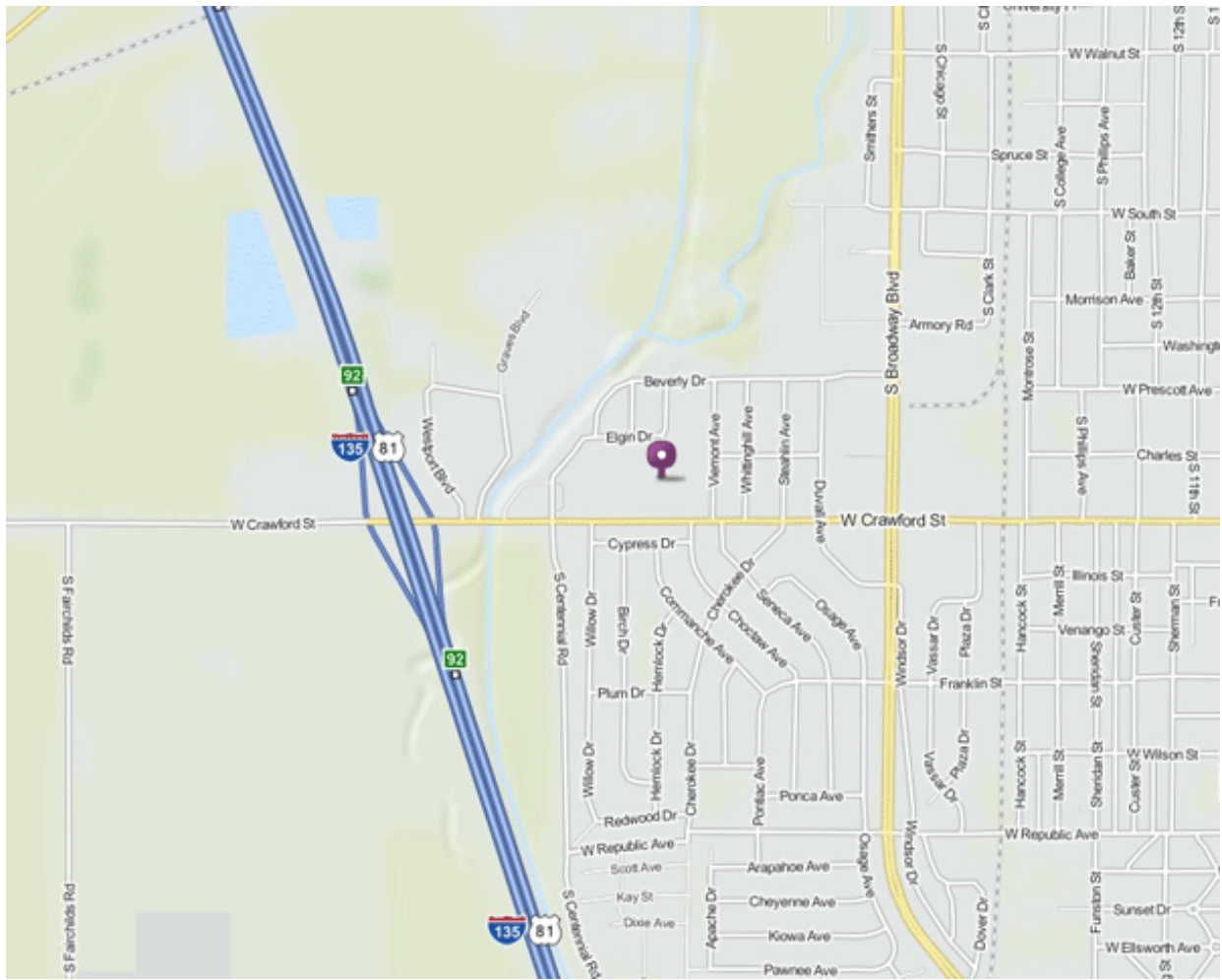


Figure 1. Location of Ambassador Hotel and Conference Center in Salina.

5. North Central Kansas Field Day in Courtland, January 30

K-State Research and Extension will host the North Central Kansas Experiment Field Winter Update Jan. 30 from 9:30 until noon.

The update, to be held at the Courtland Arts Center, 421 Main St. in Courtland, will be followed by a complimentary lunch.

The program includes:

- Introduction of New Agronomist and Research Plans
- Targeting High Soybean Yields
- What Have We Learned About Cover Crops
- Herbicide-resistant Weed Update

RSVP by Tuesday, Jan. 27 by calling 785-335-2836 or emailing Andrew Esser at aesser@ksu.edu

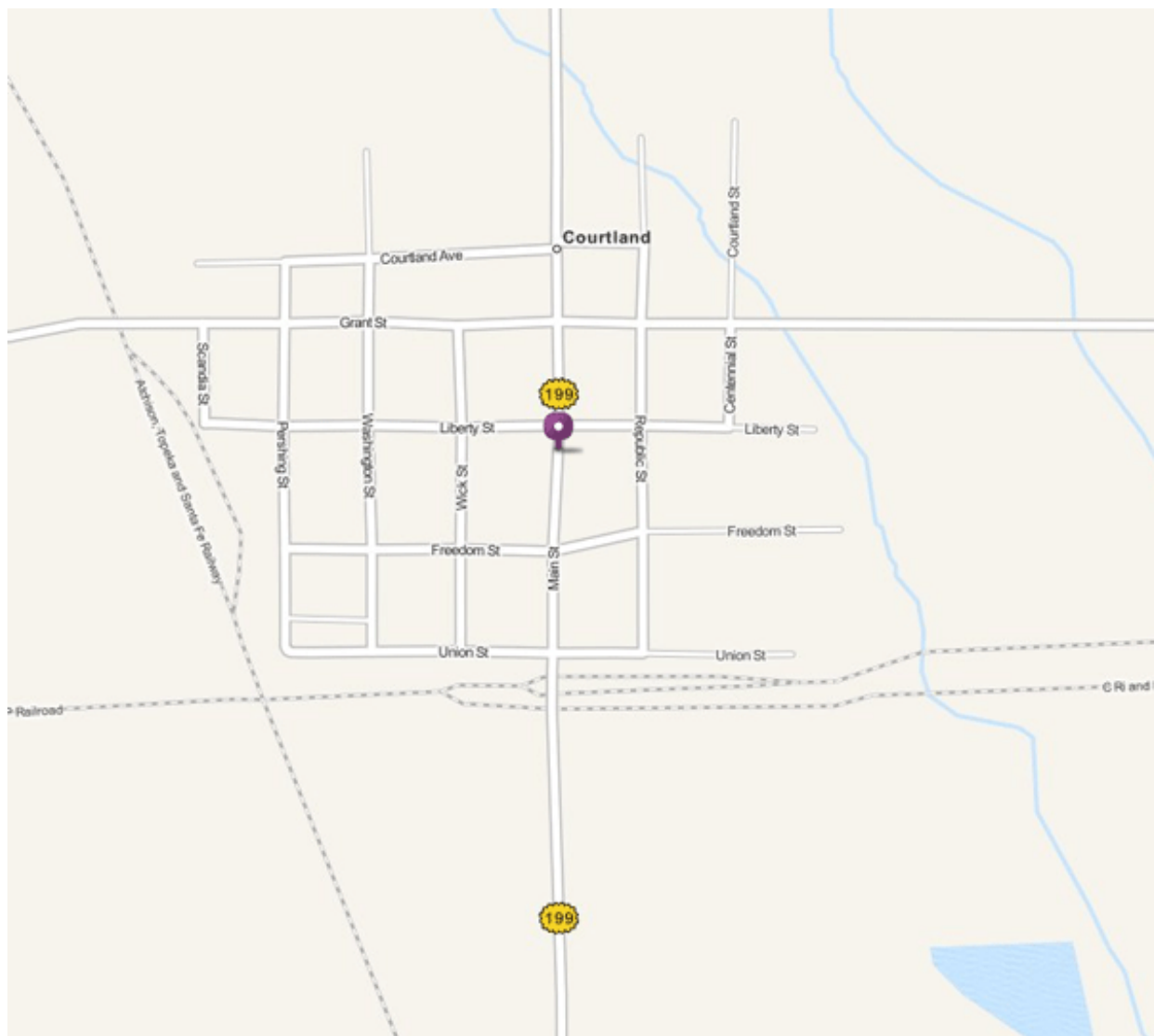


Figure 1. Location of in Courtland Arts Center in Courtland.

6. K-State Soybean Production Schools scheduled for early February



A series of four K-State Soybean Production Schools will be offered in early February 2015 to provide in-depth training targeted for soybean producers and key stakeholders. The schools will be held at four locations around the state. The schools are sponsored by Kansas Soybean Commission, DuPont, Monsanto, Bayer CropScience, and BASF.

The one-day schools will cover a number of issues facing soybean growers: production practices; soil fertility; weed control; insect and disease management; and risk management.

The dates and locations are:

- Feb. 3 – Salina – Ambassador Hotel, 1616 W. Crawford St.

Contact Information: Tom Maxwell, Central Kansas Extension District.
tmaxwell@ksu.edu - phone 785-309-5850

- Feb. 4 – Derby – Derby Welcome/Senior Center, 611 N Mulberry Rd.

Contact Information: Zach Simon, Sedgwick County Extension.
zsimon@ksu.edu - phone 316-660-0100

- Feb. 5 – Independence – Civic Center, 410 North Penn Ave.

Contact Information: Jeri Sigle, Wildcat Extension District.
jlsigle@ksu.edu - phone 620-331-2690

- Feb. 6 – Sabetha – North Ridge Church, 316 Lincoln St.

Contact Information: David Hallauer, Meadowlark District
dhallaue@ksu.edu - phone 785-863-2212
and Matthew Young, Brown County Extension
mayoung@ksu.edu - phone 785-742-7871

There is no charge for the schools and lunch will be provided, courtesy of the Kansas Soybean Commission.

To see the content of last-year's K-State Soybean Schools, see:

<http://www.agronomy.k-state.edu/extension/crop-production/soybeans/soybean-schools/2014-soybean-school/index.html>

Ignacio Ciampitti, Crop Production and Cropping Systems Specialist
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Doug Shoup, Southeast Area Crops and Soils Specialist
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Stu Duncan, Northeast Area Crops and Soils Specialist
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7. K-State Sorghum Production Schools scheduled for mid-February



A series of four K-State Sorghum Production Schools will be offered in mid-February 2015 to provide in-depth training for sorghum producers. The schools will be sponsored by Kansas Grain Sorghum Commission.

The one-day schools will cover issues facing sorghum producers: weed control strategies, crop production practices, soil fertility and nutrient management, insect control, irrigation, and risk management.

The dates and locations are:

- Feb. 10: Garden City, Clarion Inn, 1911 E Kansas Ave

Local Research and Extension office contacts:

Andrea Burns, Ford County, aburns@ksu.edu 620-227-4542

Barbara Addison, Finney County, baddison@ksu.edu 620-272-3670

- Feb. 11: Oakley, Buffalo Bill Center, 3083 U.S. 83

Local Research and Extension office contact:

Julie Niehage, Golden Prairie District, Oakley, julienie@ksu.edu 785-671-3245

- Feb. 12: Hutchinson, Hutchinson Community College, 1300 N Plum St

Local Research and Extension office contact:

Darren Busick, Reno County, darrenbusick@ksu.edu 620-662-2371

- Feb. 13: Ottawa, Neosho County Community College, 900 E Logan St

Local Research and Extension office contact:

Darren Hibdon, Frontier District, dhibdon@ksu.edu 785-229-3520

Registration for each school is at 8:30 a.m. The program begins at 9 a.m. and adjourns at 3:30 p.m.

Lunch will be provided, courtesy of the Kansas Grain Sorghum Commission. There is no cost to attend, but participants are asked to pre-register by Feb. 4. Online registration is available at [K-State Sorghum Schools \(http://bit.ly/KStateSorghumSchools\)](http://bit.ly/KStateSorghumSchools) or by emailing or calling the nearest local K-State Research and Extension office for the location participants plan to attend.

Presentations from the 2014 K-State Sorghum Schools can be seen at:
<http://bit.ly/KStateSorghumSchools>

For more information, contact: Ignacio Ciampitti, K-State Crop Production and Cropping Systems Specialist, ciampitti@ksu.edu 785-532-6940.

8. Canola College 2015 in Enid, February 19

The latest developments in canola production and marketing will be highlighted at the Canola College 2015, "Taking Canola Production to the Next Level."

The conference will be held February 19 at the Chisholm Trail EXPO Center, 111 W. Purdue, in Enid, Oklahoma. This conference is sponsored by K-State, Oklahoma State University, Great Plains Canola Association, and partners from the canola industry.

There was excellent participation at the Canola College in 2014 and we have every reason to believe that the crowd will be even larger in 2015.

This is the premier canola education/training event in the region. The hard work of so many is paying off as the canola industry continues to gain momentum. Anyone with an interest in canola production will want to be a part of this event."

Attendees will be able to share ideas and experiences with canola experts and more than 300 new and veteran canola producers and industry partners.

There will be an opening session and four concurrent breakout sessions with the following topics covered by experts in their areas:

- Moving Forward with Winter Canola – Mike Stamm, K-State
- Basic Production Practices – Mike Stamm and Heath Sanders, Great Plains Canola Association
- Advanced Production Practices – Bob Schrock, Grower, Kiowa, Kan., and Chad Godsey, Godsey Precision Ag, Eckley, Colo.
- Canola Economics – Eric DeVuyst, OSU Extension Agricultural Economist and Josh Bushong, OSU Extension Canola Specialist
- Soil Fertility and Soil Health – Dr. Brian Arnall, OSU Extension Soil Fertility Specialist and Jason Warren, OSU Extension Soil Management Specialist

Every attendee will have the opportunity to hear from every speaker. In addition, OSU pest management experts Dr. Angela Post (weeds), Dr. Tom Royer (entomology), and Dr. John Damicone (plant pathology) will be available to provide advice and answer questions. They will be located at a special booth convenient for visiting with attendees.

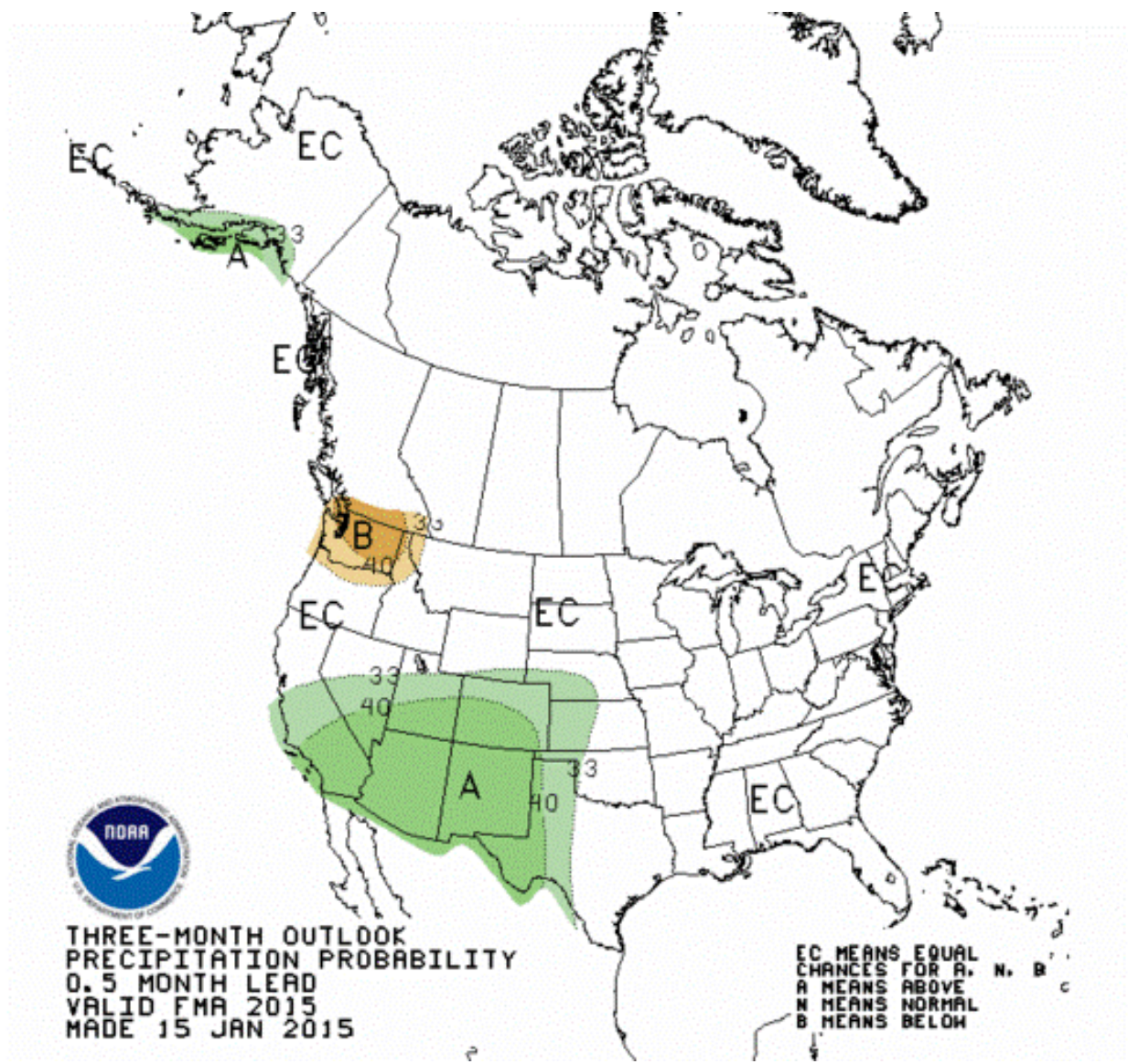
A meal and coffee breaks are being sponsored by members of the canola industry. Time will be allotted on the program for attendees to meet with Canola College sponsors at their booths.

Register for Canola College 2015 at: www.canola.okstate.edu

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

9. Spring weather outlook

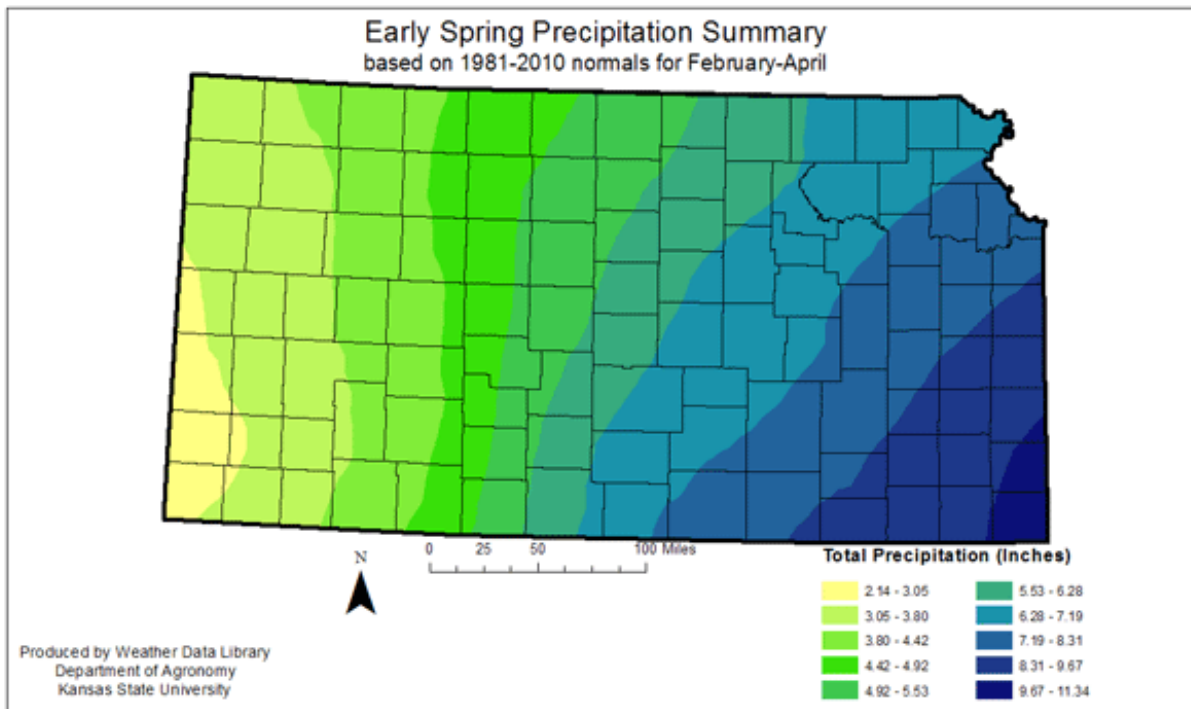
The National Weather Service's Climate Prediction Center has released its latest outlook, which covers the February through April time period. Since this period marks the beginning of the wetter portion of our year, it is of great interest. Unfortunately, the precipitation outlook is neutral for most of the state. That means it is equally likely to fall in any of the three categories: above normal, normal or below normal. Only the western portions of the state have an increased chance of above normal precipitation. While this would be welcome, even above-normal precipitation will result in limited improvement to the drought situation in the region. In extreme southwest Kansas the average precipitation amount for this 3-month period is less than 3 inches. In contrast, in southeast Kansas, average precipitation for the period can be more than 10 inches.



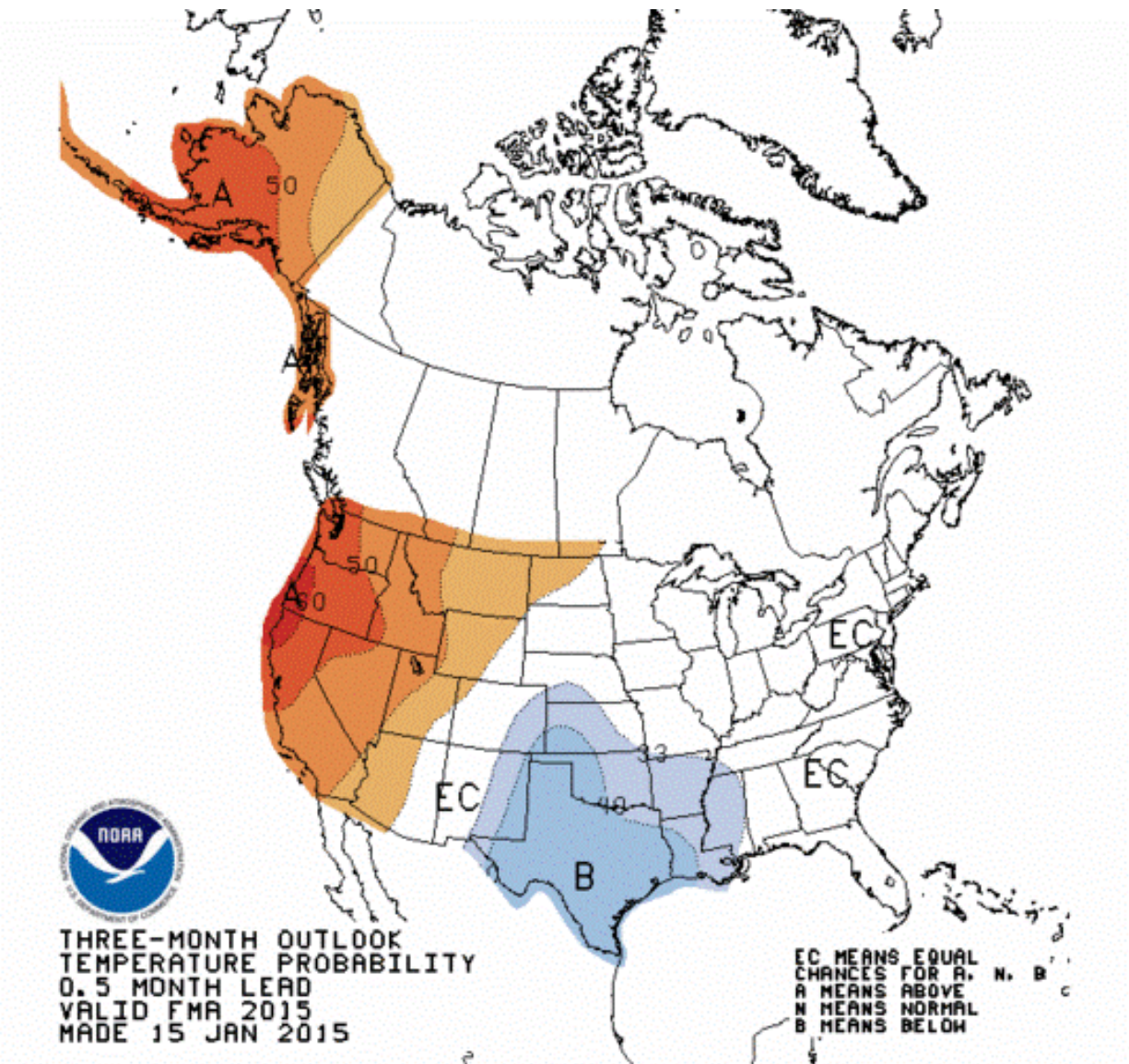
Kansas State University Department of Agronomy

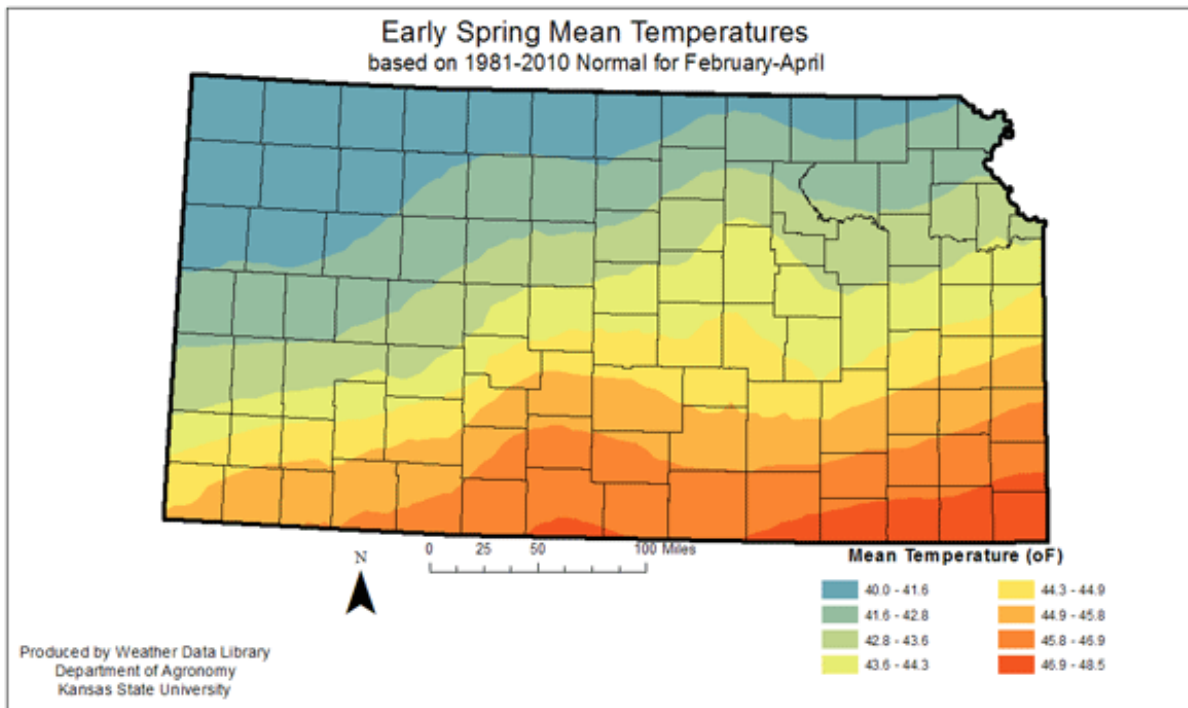
2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506

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Chances for an El Niño continue to fade. This is less of an issue as we move into the spring when other factors can have greater influence on local conditions. Warm temperatures over the weekend (Jan. 16-18) are not expected to last. The 6-10 day, 8-14 day, and 3-month outlooks are all showing an increased probability of cooler-than-normal temperatures. This does not mean that the excessively cold temperatures of early January will be repeated. The most favorable pattern would be to have the cold weather dominate in February rather than April.





Mary Knapp, Weather Data Library
mknapp@ksu.edu

10. Comparative Vegetation Condition Report: December 30 - January 12

K-State's Ecology and Agriculture Spatial Analysis Laboratory (EASAL) produces weekly Vegetation Condition Report maps. These maps can be a valuable tool for making crop selection and marketing decisions.

Two short videos of Dr. Kevin Price explaining the development of these maps can be viewed on YouTube at:

<http://www.youtube.com/watch?v=CRP3Y5Nlggw>

<http://www.youtube.com/watch?v=tUdOK94efxc>

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 26-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.

NOTE TO READERS: The maps below represent a subset of the maps available from the EASAL group. If you'd like digital copies of the entire map series please contact Nan An at nanan@ksu.edu and we can place you on our email list to receive the entire dataset each week as they are produced. The maps are normally first available on Wednesday of each week, unless there is a delay in the posting of the data by EROS Data Center where we obtain the raw data used to make the maps. These maps are provided for free as a service of the Department of Agronomy and K-State Research and Extension.

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

Kansas Vegetation Condition

Period 02: 12/30/2014 - 01/12/2015

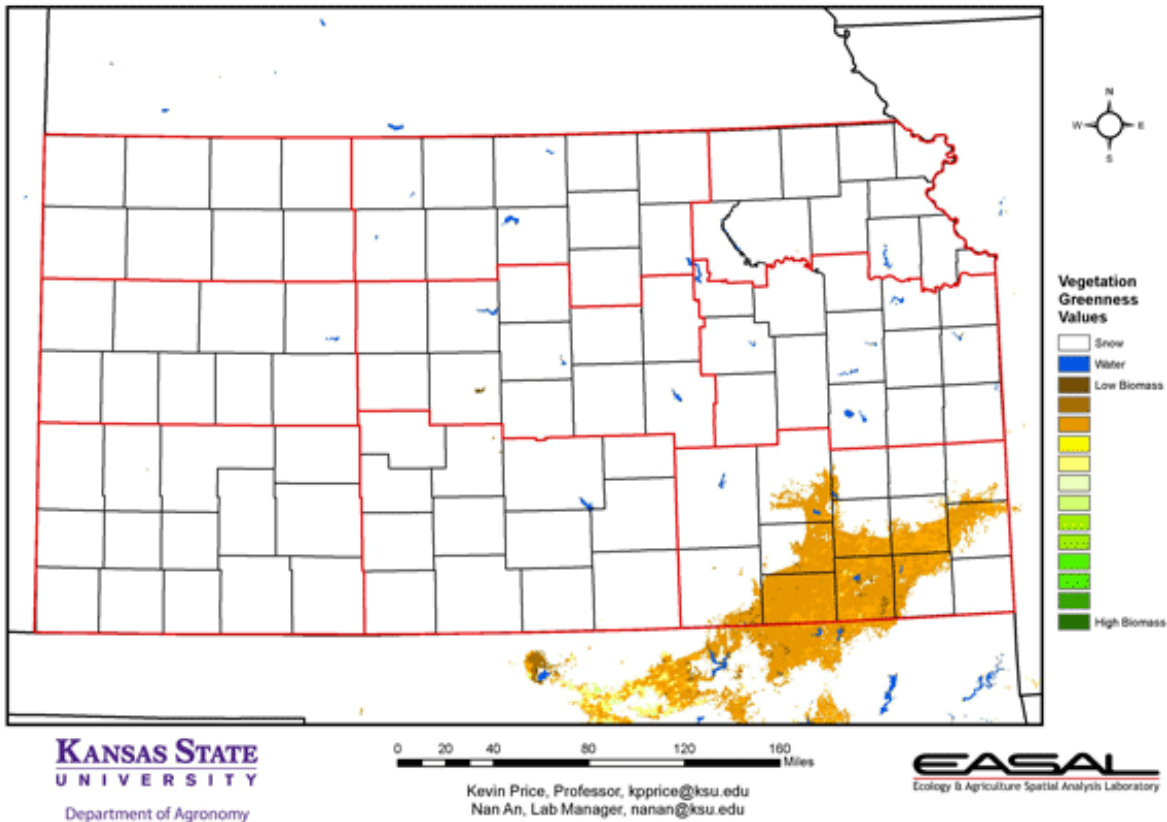


Figure 1. The Vegetation Condition Report for Kansas for December 30 – January 12 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that all but southeast Kansas had snow during the period. For much of the state, the amounts were limited. On the 8th of January, the greatest depths were along the eastern edges of the western divisions into central and south central Kansas. By the end of the period only trace amounts were present statewide.

Kansas Vegetation Condition Comparison
Early-January 2015 compared to the Early-January 2014

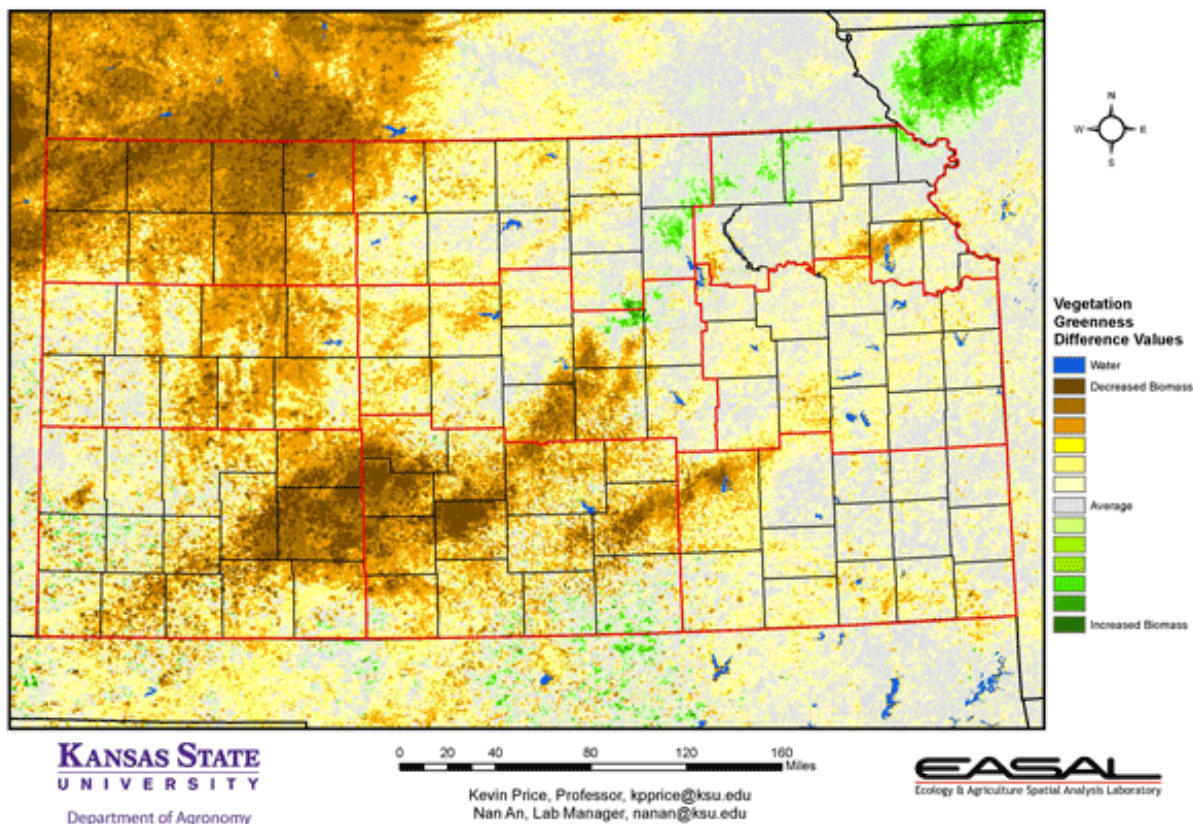


Figure 2. Compared to the previous year at this time for Kansas, the current Vegetation Condition Report for December 30 – January 12 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that lower NDVI values were most common in northwest and parts of southwest and south central Kansas. Higher values are seen in northeast Kansas. Last year the deeper and more persistent snow cover was in northeast Kansas.

Kansas Vegetation Condition Comparison
Early-January 2015 compared to the 26-Year Average for Early-January

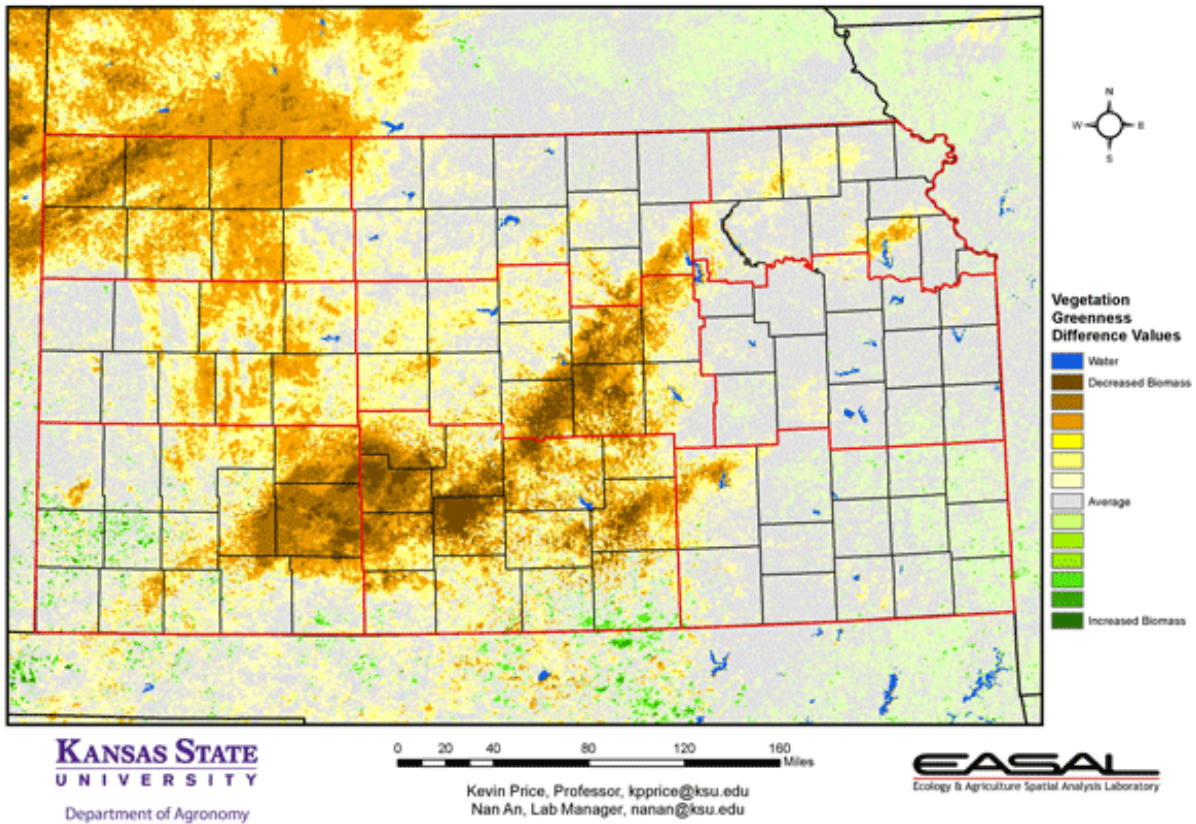


Figure 3. Compared to the 26-year average at this time for Kansas, this year's Vegetation Condition Report for December 30 – January 12 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the greatest departure is in the areas from Ford County east and north through Clay County. These are also the areas with the greatest snowfall during the period.

U.S. Corn Belt Vegetation Condition

Period 02: 12/30/2014 - 01/12/2015

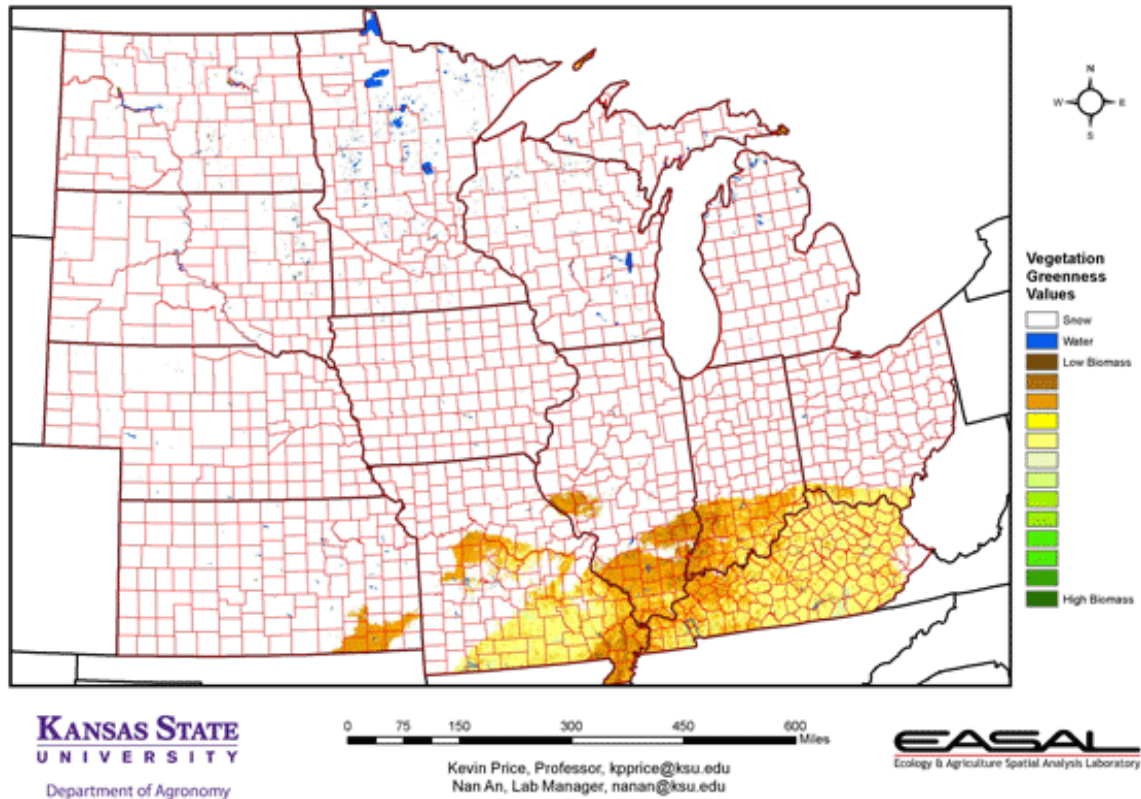


Figure 4. The Vegetation Condition Report for the Corn Belt for December 30 – January 12 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that only the extreme southeastern portion of the region missed out on snowfall. However, the snow distribution was limited. The Central Illinois weather office reported 3 inches of snow on the ground at the end of the period. Bridgeport, in the Nebraska Panhandle, had 7 inches.

U.S. Corn Belt Vegetation Condition Comparison
Early-January 2015 Compared to Early-January 2014

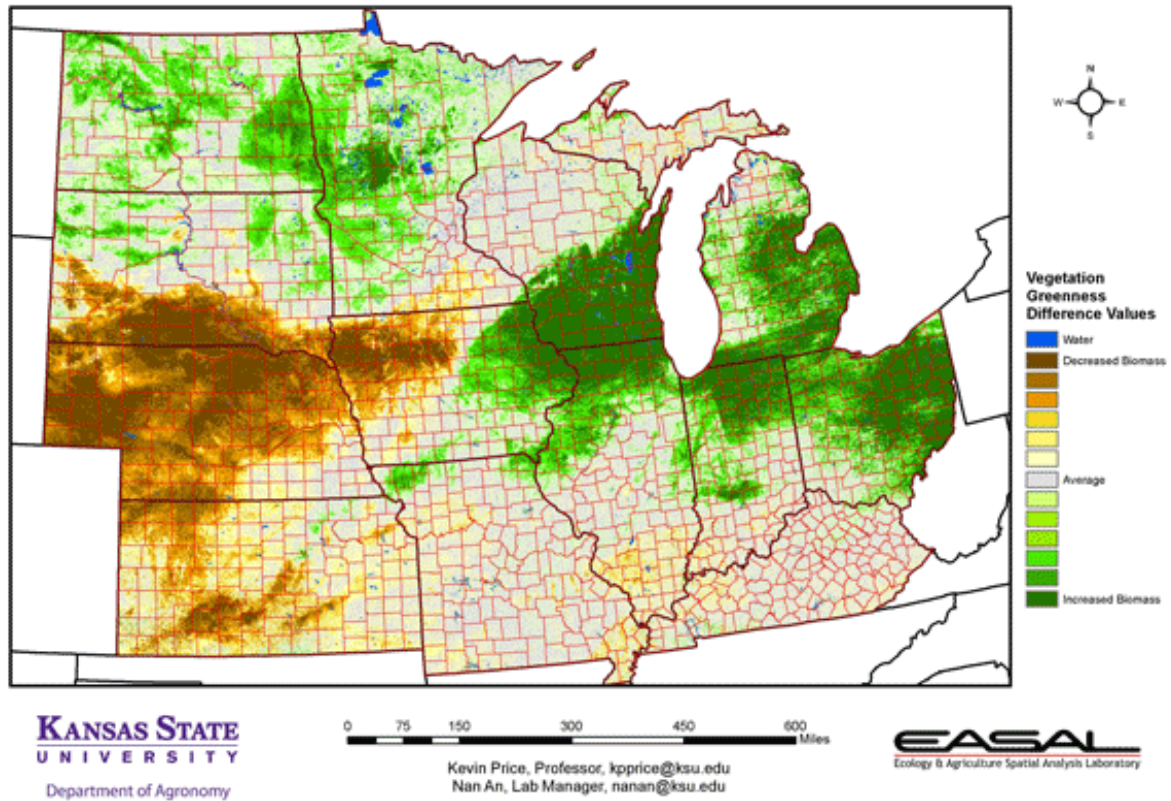


Figure 5. The comparison to last year in the Corn Belt for the period December 30 – January 12 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that the western portion of region has higher NDVI values than the eastern areas. Snow cover was higher this year in the western parts of the region. Last year, the Arboretum at Madison, Wisconsin had twice the snow cover reported this year.

U.S. Corn Belt Vegetation Condition Comparison
Early-January 2015 Compared to the 26-Year Average for Early-January

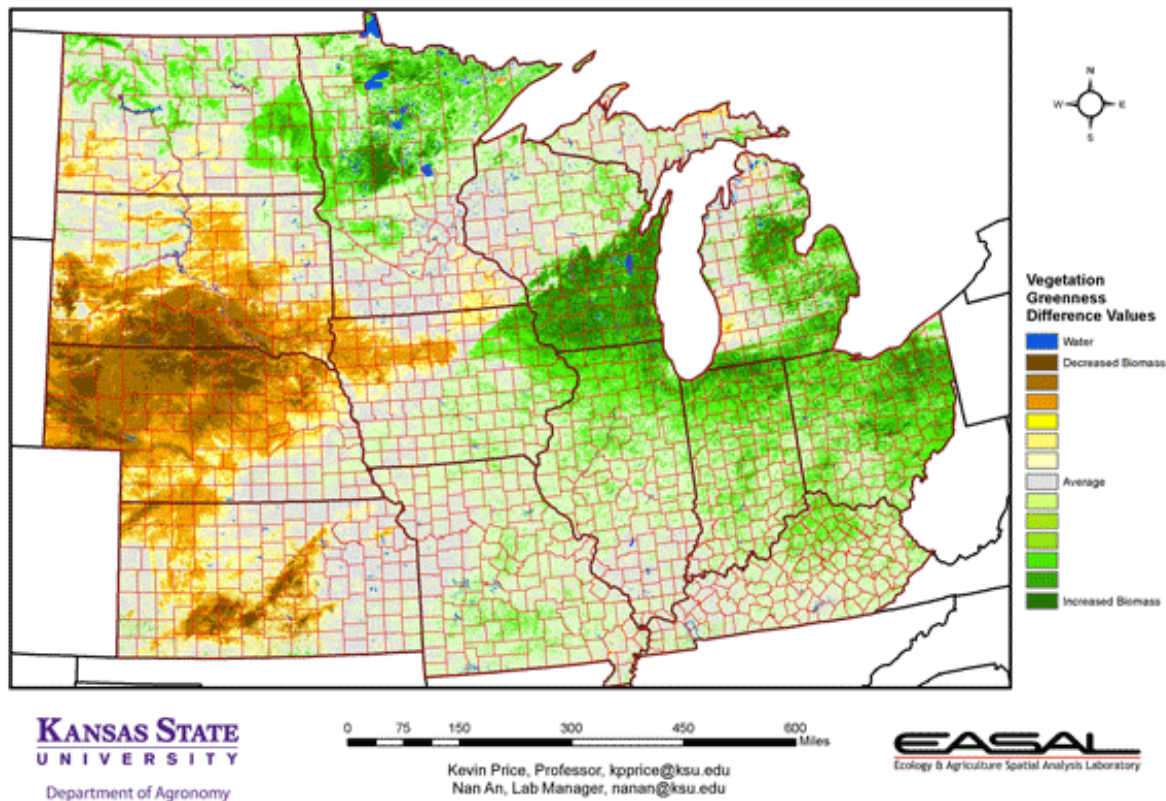
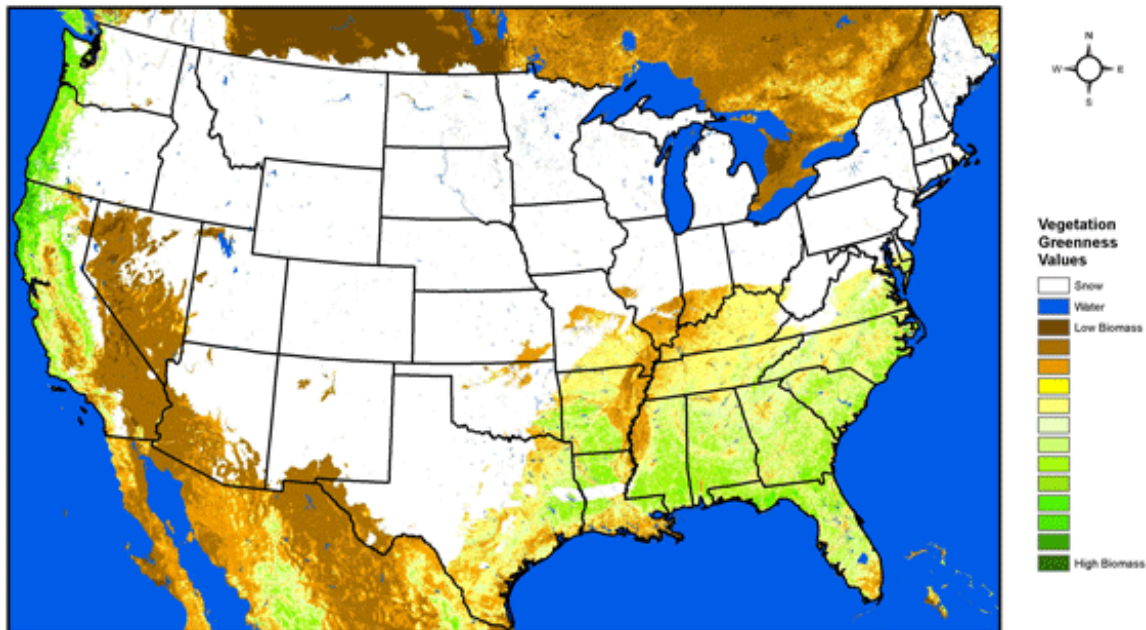


Figure 6. Compared to the 26-year average at this time for the Corn Belt, this year's Vegetation Condition Report for December 30 – January 12 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that higher-than-average NDVI values are most common in the eastern portion of the region. Persistent snow cover and colder-than-average temperatures have limited NDVI readings in the western sections. This is most notable example of this is in northwestern Nebraska and southern South Dakota.

Continental U.S. Vegetation Condition

Period 02: 12/30/2014 - 01/12/2015



KANSAS STATE
UNIVERSITY
Department of Agronomy

0 180 360 720 1,080 1,440 Miles

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Nan An, Lab Manager, nanan@ksu.edu

EASAL
Ecology & Agriculture Spatial Analysis Laboratory

Figure 7. The Vegetation Condition Report for the U.S. for December 30 – January 12 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that snow made a brief incursion as far south as Texas and Louisiana. These areas had snow for only a short period, although freezing temperatures extended to the Gulf Coast. This may cause problems in future weeks.

Continental U.S. Vegetation Condition Comparison
Early-January 2015 Compared to Early-January 2014

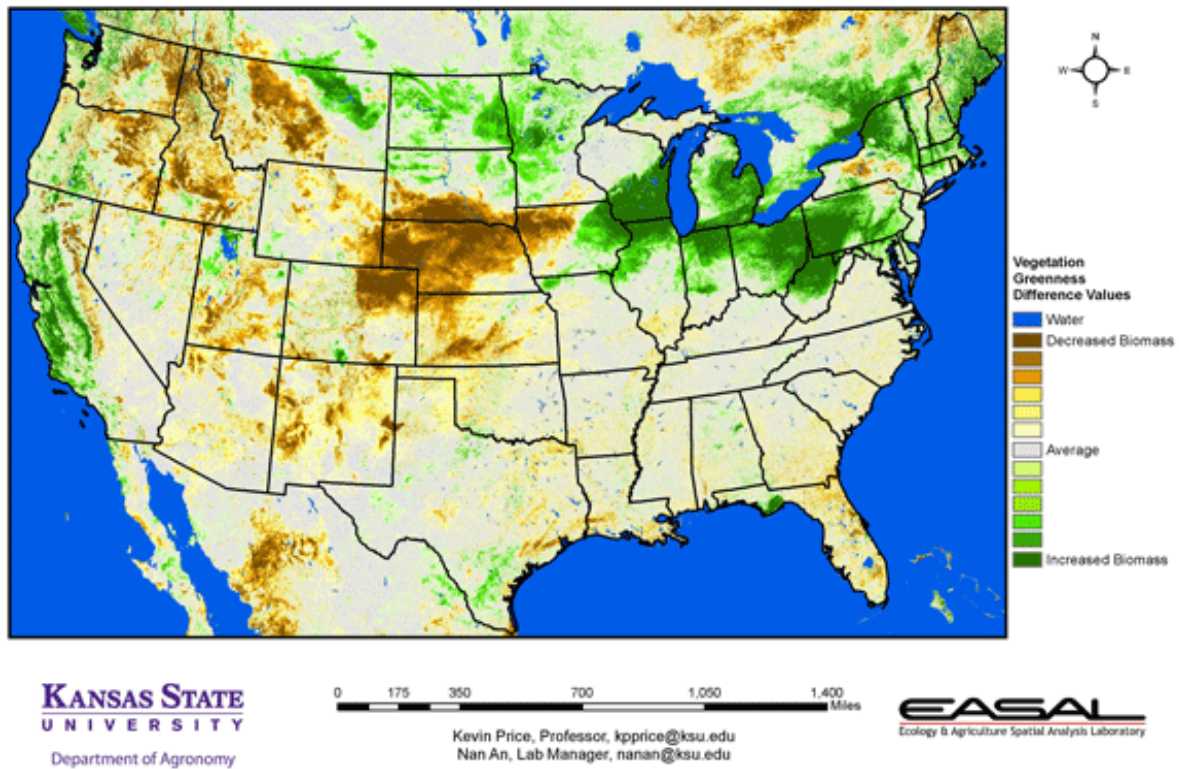


Figure 8. The U.S. comparison to last year at this time for the period December 30 – January 12 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that there is a split, with higher NDVI values to the east and lower values to the west. Snow cover is a major factor in these differences.

Continental U.S. Vegetation Condition Comparison
Early-January 2015 Compared to 26-year Average for Early-January

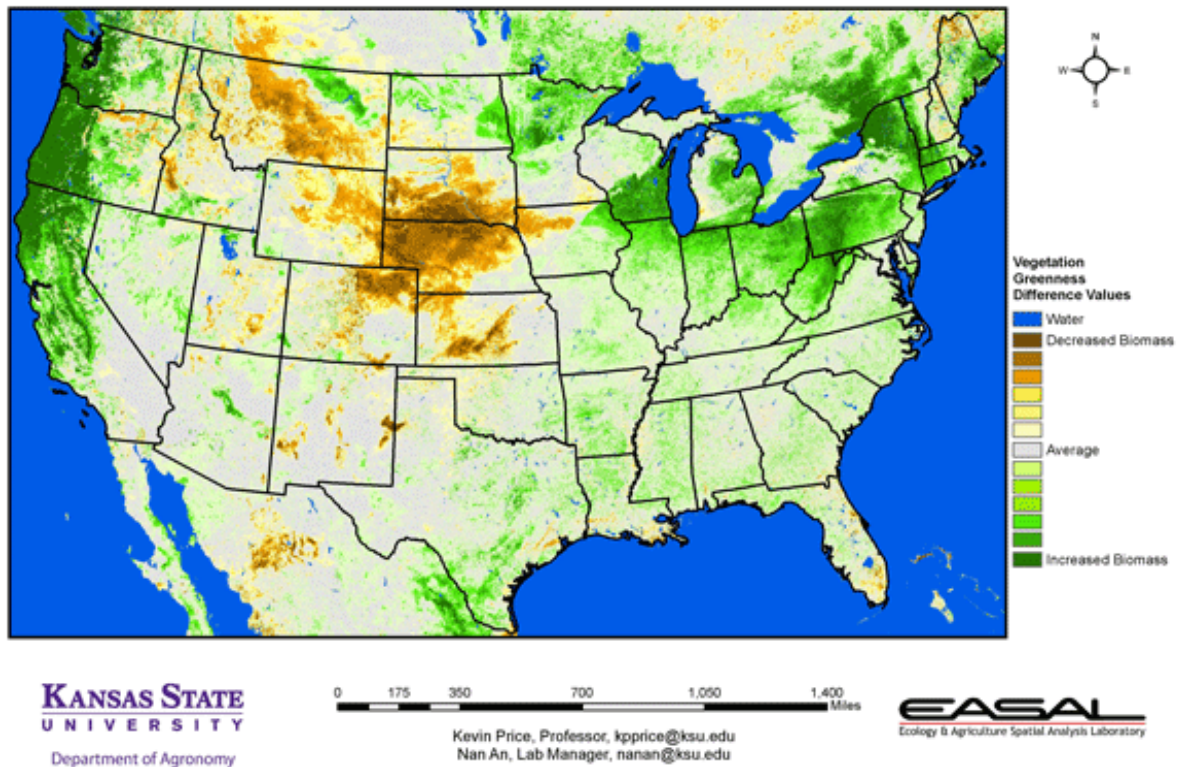


Figure 9. The U.S. comparison to the 26-year average for the period December 30 – January 12 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that the greatest departure is along the Pacific Coast. Wet conditions in December have resulted in increased photosynthetic activity in the region.

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