extension AGRONOMY e-Updates

Number 393
March 15, 2013

1. Plan now for good marestail control in soybeans

Controlling marestail in soybeans has been a big challenge for Kansas no-till producers. Last season, because of the dry fall and spring, there were generally much fewer marestail that germinated and survived the winter. From scouting fields this winter it appears there will be a more significant population of marestail than last year and it will need to be addressed. Because soybeans are generally planted later in the season, and marestail generally germinates in the fall or early spring, application timing and weed size are critical factors to successful control.

In the early spring, using a growth regulator herbicide like 2,4-D or dicamba is an inexpensive and effective option to control rosette marestail. In addition, using a herbicide with residual control of marestail helps with weeds that germinate between the fall and early spring burndown and soybean planting. Products that include Canopy EX, Classic, FirstRate, Sharpen, or Valor can help provide residual control against several broadleaf species including marestail. Consult the herbicide labels for the required preplant intervals prior to planting soybeans.

As soybean planting nears, marestail control can become difficult because plants will have bolted and be considerably larger. Herbicides to apply as a burndown prior to planting include tank mixes of glyphosate with FirstRate, Classic, Sharpen, Optill, or 2,4-D. Be very careful to follow label directions when using 2,4-D prior to soybean planting because the plant-back restriction with these herbicides ahead of soybean can be from 7-30 days. Sharpen is a relatively new herbicide that has provided good marestail control and can be applied any time before soybean emergence. Maximize marestail control by applying Sharpen in combination with methylated seed oil and at spray volumes of 15 gallons per acre or more.

One additional herbicide to consider as a rescue burndown application to control bolting marestail prior to soybean planting is Liberty. Although, it would be better to control marestail at an earlier stage of growth, Liberty has been one of the most effective herbicides to control bolting marestail. Liberty also has broad spectrum non-selective activity on other broadleaf and grass species if treated at a young growth stage. Liberty, is primarily a contact herbicide, so a spray volume of 15 gpa or greater

generally provides the most consistent weed control. Liberty tends to work best under higher humidity and warm sunny conditions at application.

Controlling marestail in the growing soybean crop can be the biggest challenge for producers. Glyphosate alone is often not effective on larger or glyphosate-resistant marestail. The most successful treatments for large marestail in Roundup Ready soybeans have been with combinations of glyphosate + FirstRate, glyphosate + Classic, or glyphosate + Synchrony. Another option to control marestail in soybean is to plant Liberty Link soybeans and use Liberty herbicide. It is important to remember that Liberty can only be applied postemergence on Liberty Link soybeans.

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2. Early spring control of weeds in thin stands of wheat

Some areas of Kansas have unusually thin wheat stands because of dry conditions last fall and early winter. Thin, late-developing wheat is likely to have excessive weed problems because of the open space and canopy, but treatment decisions can be difficult. Residual herbicide products such as Finesse, Ally, Rave, or Amber probably will provide the best weed control because they have both foliar and soil residual activity. These types of products may be the best option is you are committed to keeping the wheat crop for grain harvest.

However, these herbicides all have crop rotation restrictions, so if there is a crop failure, you may not have a lot of recrop options. Make sure to check the recrop guidelines on all herbicides before planting a subsequent crop. If you want to keep your options open for planting a summer crop, you probably need to consider using a short-residual herbicide such as MCPA, 2,4-D, dicamba, or Affinity, but realize that these products will not provide much residual control of later-germinating weeds.

Winter annual weed control

Some wheat fields may have heavy winter annual weed infestations if moisture was received after planting last fall. There are several options available to control these weeds now. In general, the sooner this is done, and the smaller the weeds, the better the results will be. 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.

When applying herbicides at this time of year, near jointing, there are some timing issues related to the growth stage of wheat that producers will have to take into account.

Dicamba can be applied to wheat between the 2-leaf and jointing stages of wheat. Application of dicamba after wheat reaches the jointing stage of growth causes severe prostrate growth of wheat and significant risk of yield loss. Dicamba is effective for control of kochia, Russian thistle, and wild buckwheat, but is not good for control of mustard species. Kochia, Russian thistle, and wild buckwheat are summer annual weeds that may emerge before or after wheat starts to joint, so timing of dicamba for control of these weeds can sometimes be difficult. Fortunately, dicamba provides some residual

control of these weeds following application. Herbicides containing dicamba include Banvel, Clarity, Rave, Pulsar, Agility SG, and several generic dicamba products.

Other herbicides that must be applied prior to jointing include Agility SG, Beyond (on Clearfield varieties only), Olympus, Olympus Flex, Orion, PowerFlex, Pulsar, Rage D-Tech, and Rave.

MCPA and 2,4-D have different application guidelines. In general, MCPA is safer on wheat than 2,4-D, especially when applied prior to tillering. We recommend that 2,4-D not be applied to wheat until it is well-tillered in the spring. Application of 2,4-D prior to tillering hinders the tillering process, causes general stunting and can result in significant yield loss.

Stunting from an application of 2,4-D to wheat prior to tillering. Photo by Dallas Peterson, K-State Research and Extension.

2,4-D is labeled for application to wheat from the full-tiller stage until prior to the boot stage of growth, but is probably safest between full-tiller and jointing stages of growth. Wheat will sometimes exhibit prostrate growth from 2,4-D applications applied in the jointing stage of growth, but yields generally are not significantly affected if applied before the boot stage of growth.

MCPA is relatively safe on young wheat and can be applied after the wheat is in the three-leaf stage (may vary by product label) until it reaches the boot stage of growth. Consequently, MCPA would be preferred over 2,4-D if spraying before wheat is well-tillered. Neither herbicide should be applied once the wheat is near or reaches the boot stage of growth, as application at that time can result in malformed heads, sterility, and significant yield loss.

Malformed heads from an application of 2,4-D at boot stage. Photo by Dallas Peterson, K-State Research and Extension.

Both 2,4-D and MCPA are available in ester or amine formulations. Ester formulations generally provide a little better weed control than amine formulations at the same application rates, but are more susceptible to vapor drift. Ester formulations generally are compatible for use with fertilizer carriers, while amine formulations often have physical compatibility problems when mixed with liquid fertilizer.

Other herbicides used in the spring on wheat can be applied up to the time the flag leaf is visible, or later. Affinity BroadSpec, Affinity TankMix, Ally Extra SG, Express, Harmony + 2,4-D or MCPA, Harmony Extra, and Supremacy must be applied before the flag leaf is visible. Huskie and WideMatch can be applied through the flag leaf stage. Herbicides that can be applied later in the spring – prior to the boot stage -- include Ally + 2,4-D, Amber, Finesse, Starane Ultra, and Starane Plus Salvo.

Potential for summer annual weeds in wheat

Winter annual weeds are not the only concern where 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 also become 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.

Dicamba is one of the most effective herbicides for kochia control, but as mentioned earlier, 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.

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3. Zidua: New registration for use in soybeans

Following up on the registration of Fierce in soybeans, Zidua has now been registered for use in soybeans as well. Zidua is sold by BASF and contains the active ingredient pyroxasulfone. Fierce, on the other hand, is a premix of pyroxasulfone and Valor herbicides.

Pyroxasulfone is a new chemical that was first registered for use in corn last year. It has a similar mode of action to the acetamide herbicides such as Dual, Outlook, and Harness, but is more active at lower rates, provides longer residual control, and has better activity on some broadleaf weeds than the acetamides.

Zidua can be applied as a preplant, preemergence, or postemergence treatment in soybeans. Preplant and preemergence rates range from 1.5 to 3.5 oz/acre depending on soil type, with lower rates recommended for coarse-textured soils, and higher rates for heavier soils. Postemergence rates range from 1.0 to 3.5 oz/acre, depending on soil type. The maximum use rate on coarse-textured soils is 2.1 oz/acre.

It is important to understand that Zidua has limited foliar activity and won't control emerged weeds, so preplant treatments won't provide any burndown activity. Postemergence applications would be primarily for later-season residual control. Postemergence applications are only allowed between the V1 and V3 leaf stages. Postemergence treatments prior to the V1 stage may result in crop injury.

Zidua has provided good residual control of small-seeded annual grasses and pigweeds. It can also provide some preemergence control of other broadleaf weeds such as kochia, velvetleaf, and morningglory, but may not be adequate by itself on those species. As with all preemergence herbicides, precipitation is required for herbicide activation. Also keep in mind that the earlier a residual herbicide is applied, the earlier it will start to wear out in the summer. Wheat can be planted 4 months after application of Zidua at 3 oz/acre or less.

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4. February weather summary for Kansas: Winter storms provide moisture

Two major winter storms were the main feature of the month. The first hit February 21st to 22nd with statewide impacts, and widespread snowfall amounts over 6 inches. The heaviest snowfall for the month was reported as 17 inches on the 22nd at Sun City in Barber County.

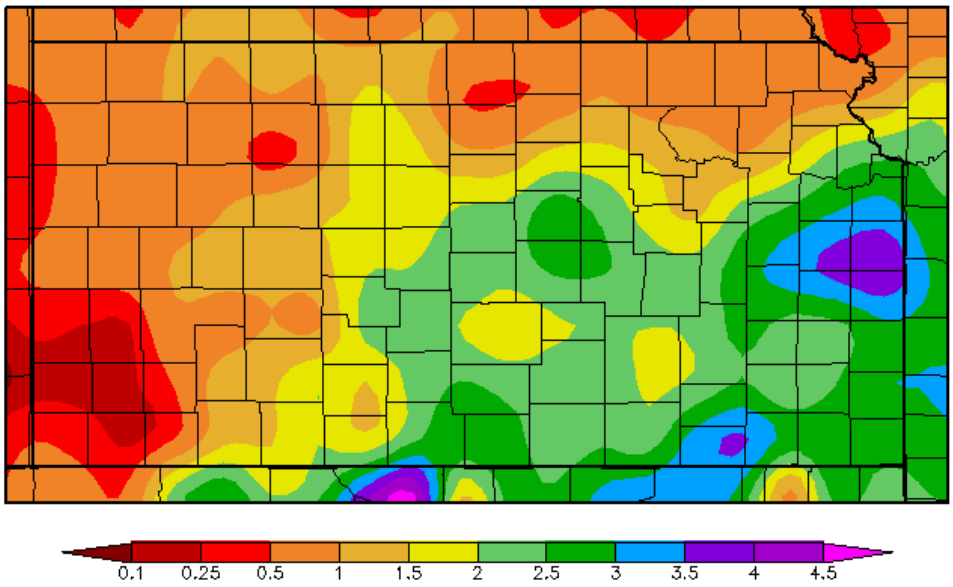
Not surprisingly, the heavy snow contributed to higher-than-average precipitation for the month in most areas of the state. All divisions, except the northeast, saw above average precipitation. The highest average precipitation was in the Southeastern Division at 2.59 inches, which is 149 percent of normal. Statewide average precipitation for February was 1.48 inches, or 143 percent of normal.

Statewide temperatures averaged 32.5 degrees F, which is 1.5 degrees below average. The coldest reading for the month was reported as -6 degrees F at Brewster (Thomas County) on February 22.

With all the moisture, the latest Drought Monitor shows some improvement. Extreme drought now covers 69.75 percent of the state, with just over 21 percent of the state in exceptional drought. Normal precipitation in February is low, so even the areas with above-normal moisture in February have had only minimal improvement. All of the state is still in severe drought or worse. The latest Drought Outlook indicates drought conditions are expected to continue through May.

The El Niño/Southern Oscillation (ENSO) is expected to remain neutral. That means the signal for increased winter precipitation will also be weaker. The jet stream is expected to shift northward. For March, chances are equally likely for precipitation to be above or below normal statewide. The temperature outlook calls for cooler-than-normal temperatures for much of the state. This does not indicate how much cooler conditions might be, and does not exclude the possibility of significant warm weather in the period.

Precipitation (in)
2/1/2013 - 2/28/2013



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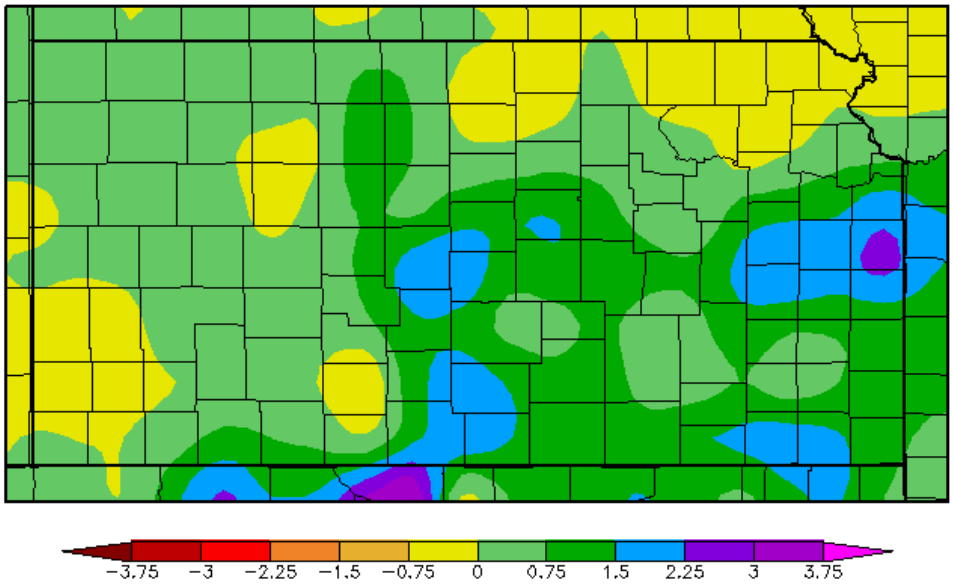
Regional Climate Centers

Departure from Normal Precipitation (in)
2/1/2013 - 2/28/2013



Generated 3/1/2013 at HPRCC using provisional data.

Regional Climate Centers

Feb 2013
Kansas Climate Division Summary

	Precipitation (inches)						Temperature (°F)			
	Feb 2013			Jan through Feb 2013					Monthly Extremes	
Division	Total	Dep. [1]	% Normal	Total	Dep. [1]	% Normal	Ave	Dep. [1]	Max	Min
Northwest	0.80	0.26	148	1.03	0.04	105	30.7	-1.0	69	-6
West Central	0.74	0.15	124	1.03	-0.07	93	31.8	-1.2	71	-2
Southwest	0.61	0.06	107	1.11	0.09	106	34.4	-1.1	73	-1
North Central	1.20	0.38	141	2.22	0.77	149	30.9	-1.2	70	-2
Central	1.89	0.88	185	2.79	1.09	163	31.9	-2.3	73	-2
South Central	2.17	1.01	183	2.84	0.85	142	33.8	-2.7	72	-3
Northeast	1.04	-0.08	90	1.81	-0.11	90	31.1	-1.2	66	-1
East Central	1.97	0.64	145	2.87	0.59	121	32.8	-0.9	68	1
Southeast	2.59	0.87	149	4.47	1.50	146	35.3	-1.3	69	3
STATE	1.48	0.49	143	2.30	0.57	125	32.5	-1.4	73	-6

1. Departure from 1981-2010 normal value

2. State highest temperature: 73 oF at Ashland (Clark Co.), Hays (Ellis Co) on the 18th.
3. State lowest temperature: 6 oF at Brewster (Thomas County) on the 22nd.

4. Greatest 24hr rainfall: 2.03 inches at Claflin, Barton County; 2.50 inches at Geneseo, Ellsworth County
Source: KSU Weather Data Library

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5. Comparative Vegetation Condition Report: February 26 – March 11

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.

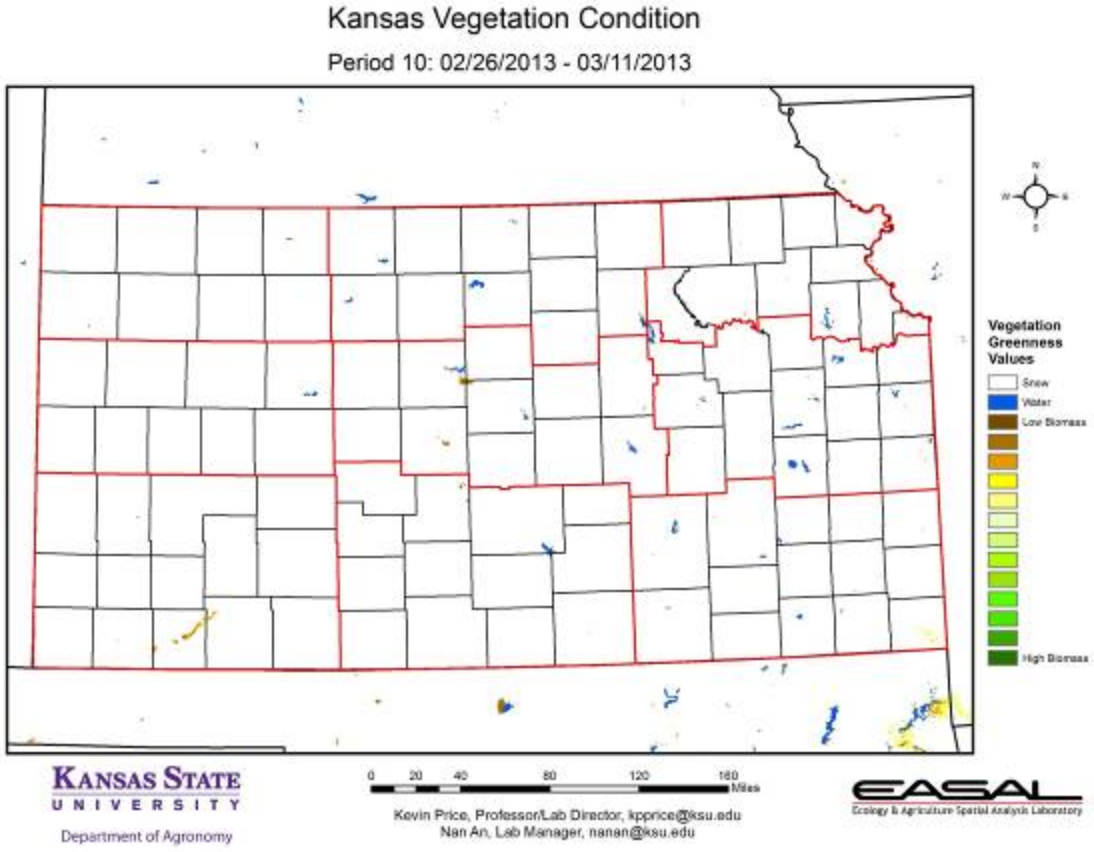
Two short videos of Dr. Kevin Price explaining the development of these maps can be viewed on YouTube at:
http://www.youtube.com/watch?v=CRP3Y5NIggw
http://www.youtube.com/watch?v=tUdOK94efxc

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 24-year average. The report is used by individual farmers and

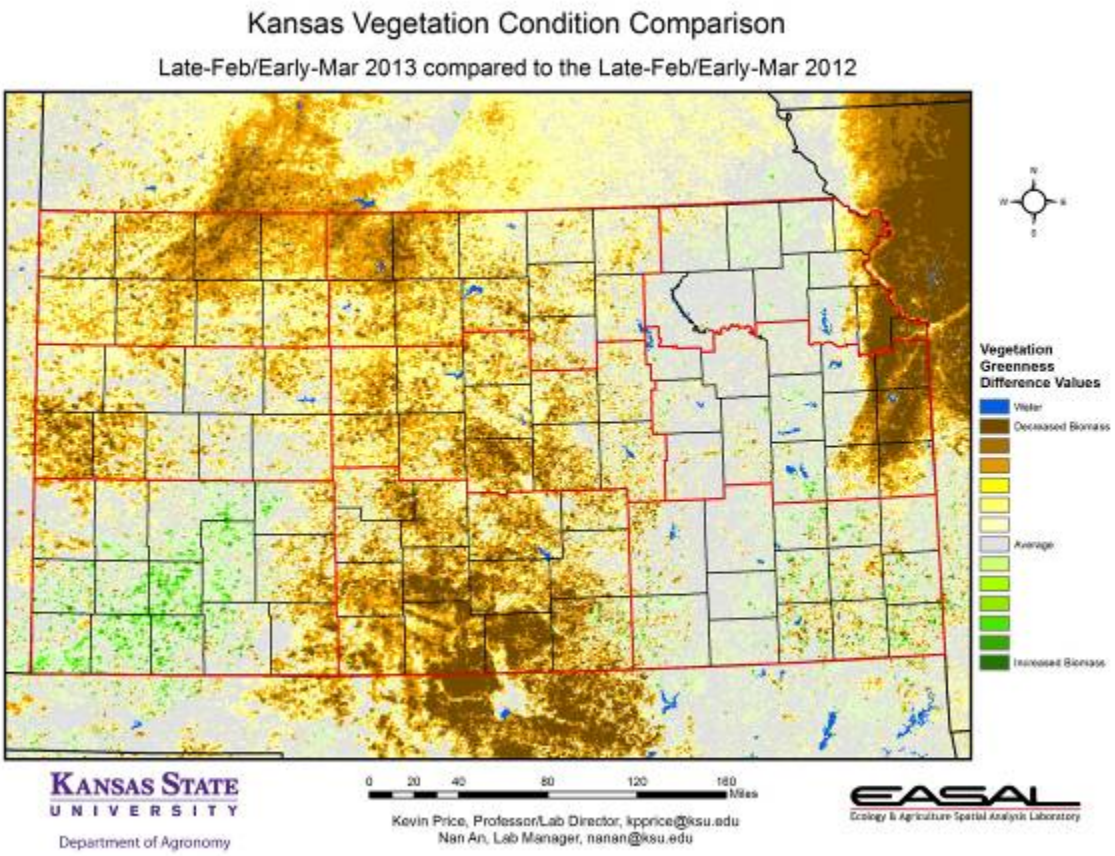
ranchers, the commodities market, and political leaders for assessing factors such as production potential and drought impact across their state.

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 Kevin Price at kpprice@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.

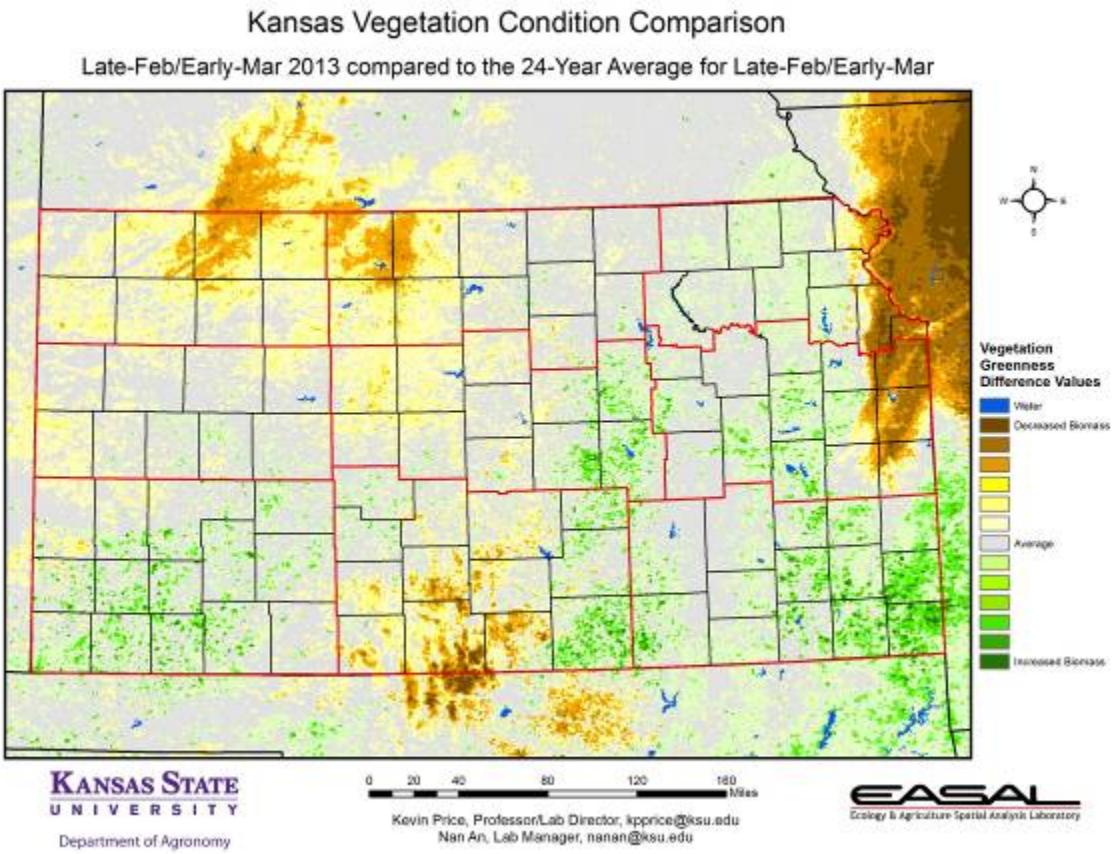
The maps in this issue of the newsletter show the current state of photosynthetic activity in Kansas, the Corn Belt, and the continental U.S, with comments from Mary Knapp, state climatologist:



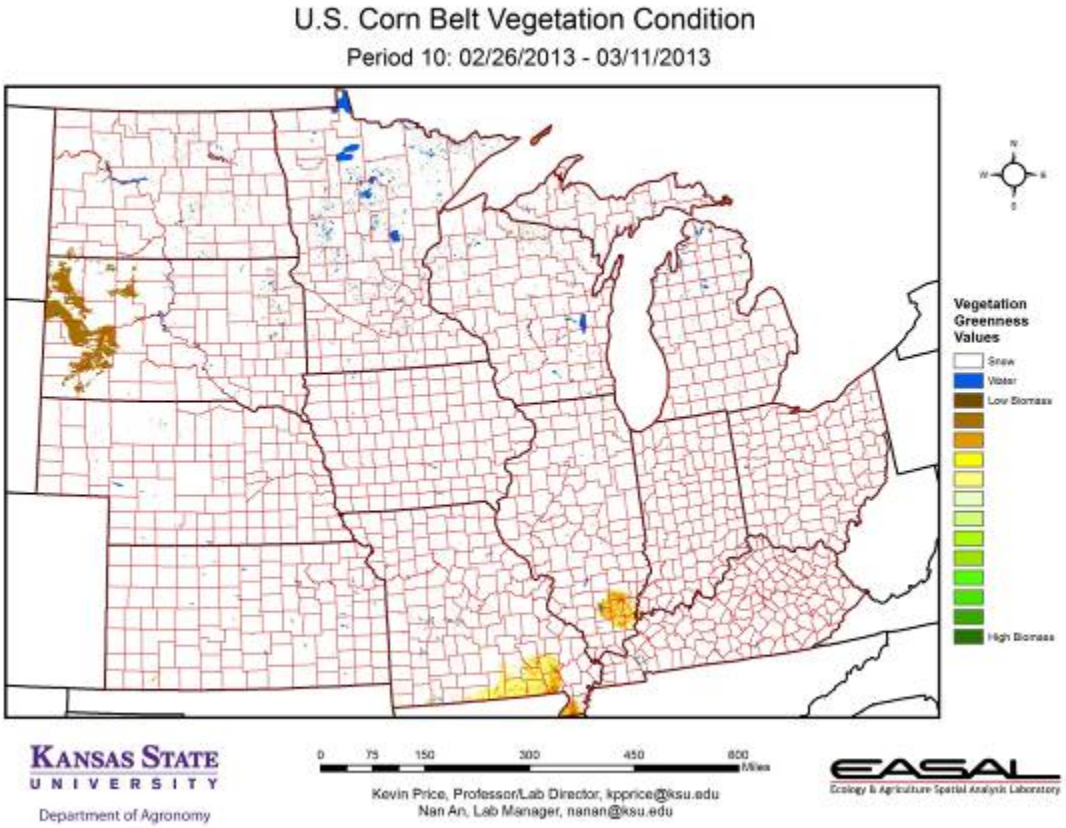
Map 1. The Vegetation Condition Report for Kansas for February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that snow was again a feature across the state. Most of this snow occurred during the first half of the period. Currently, snow cover is limited to drifts.



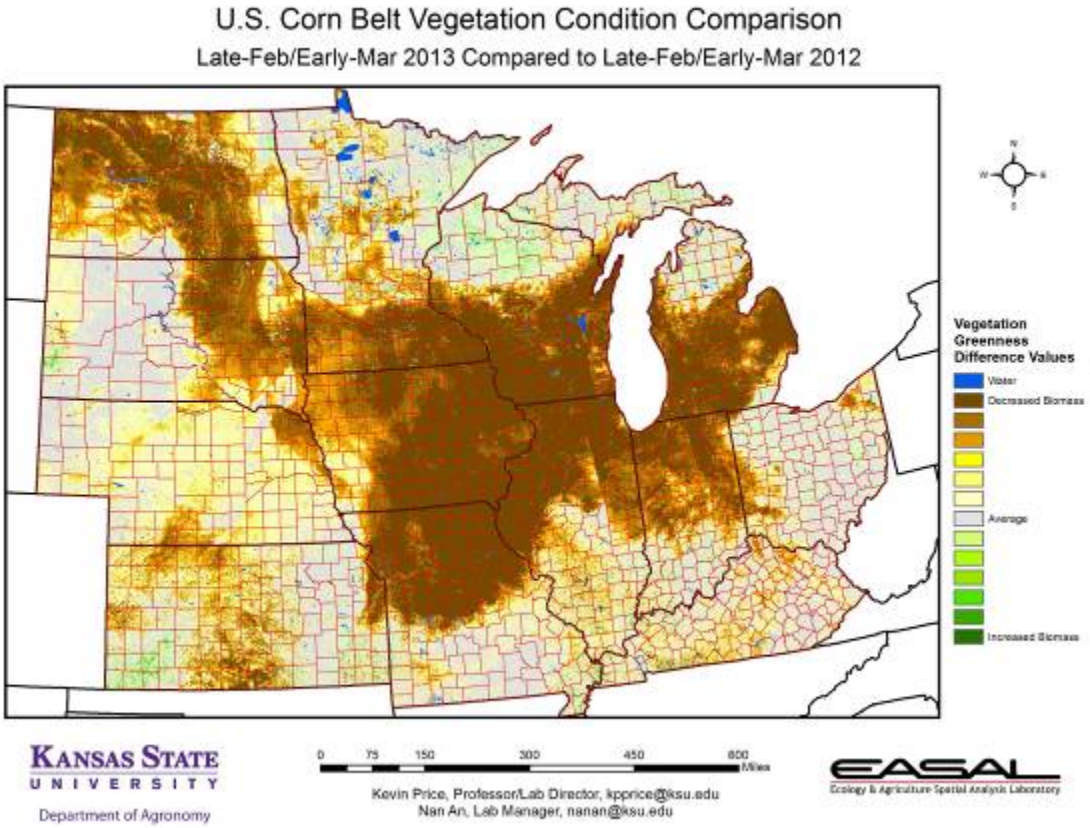
Map 2. Compared to the previous year at this time for Kansas, the current Vegetation Condition Report for September February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that only the Southwestern and Southeastern Divisions have greater photosynthetic activity. In the southwest, milder temperatures have resulted in slightly better conditions for the winter wheat. In the southeast, the picture is mixed and mainly dependent on what point the individual fields are at in their crop rotation.



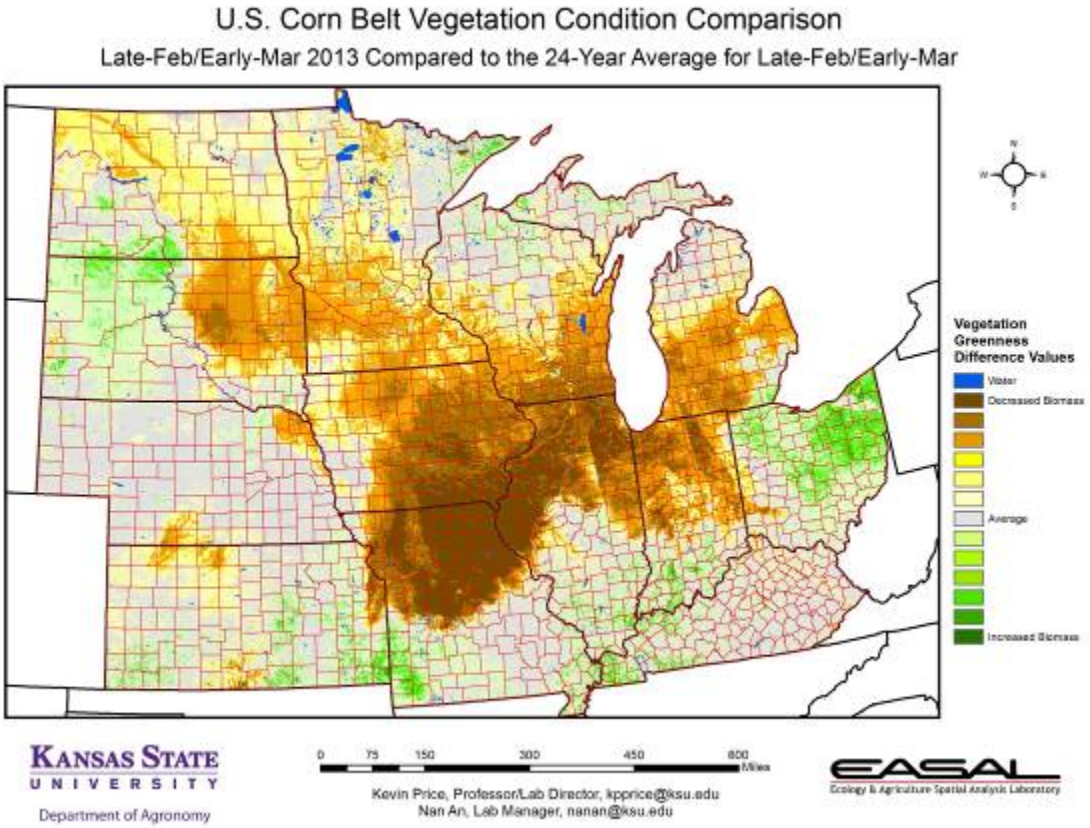
Map 3. Compared to the 24-year average at this time for Kansas, this year's Vegetation Condition Report for February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows areas of below-normal productivity in the northwest and south central. Much of this departure is due to drier-than-average conditions. In the extreme eastern portion of the state, the delay in production is mainly due to cooler-than-average soil temperatures at this time.



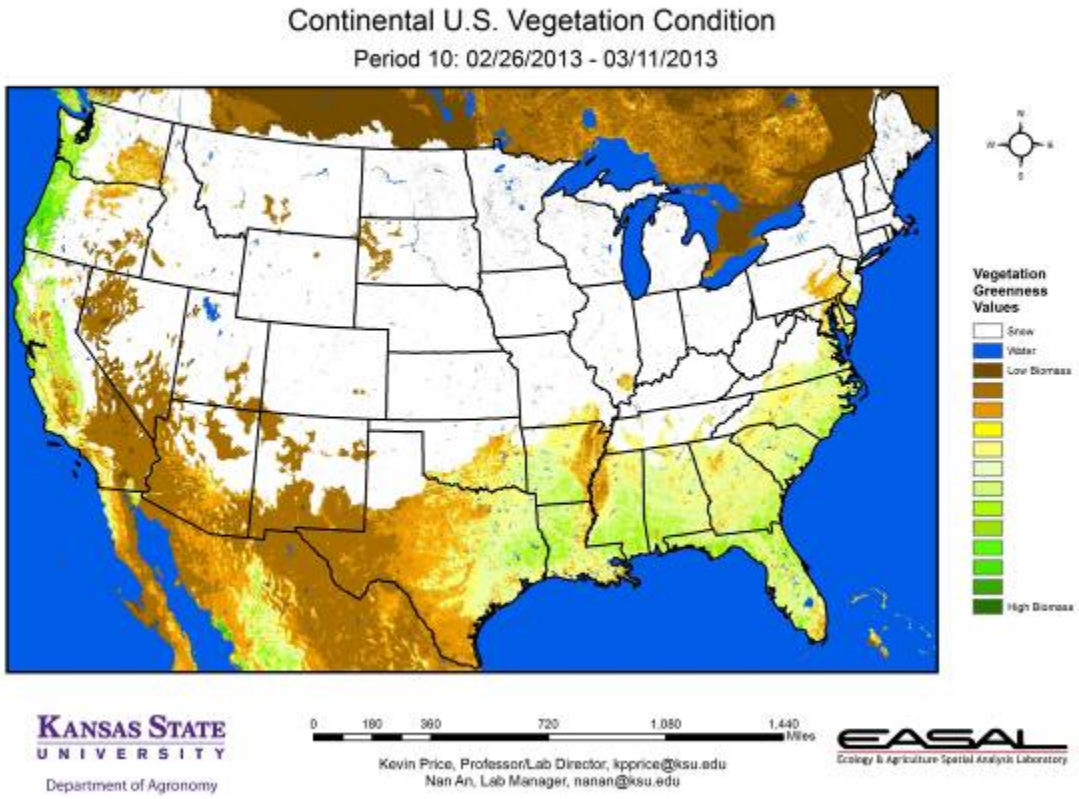
Map 4. The Vegetation Condition Report for the Corn Belt for February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that most of the region had snow during the period. The northern areas continued to have snow pack at the end of the period. Soil temperatures are still below freezing in the northern portions of the area and as a result, snow melt has resulted in runoff rather than in soil moisture recharge.



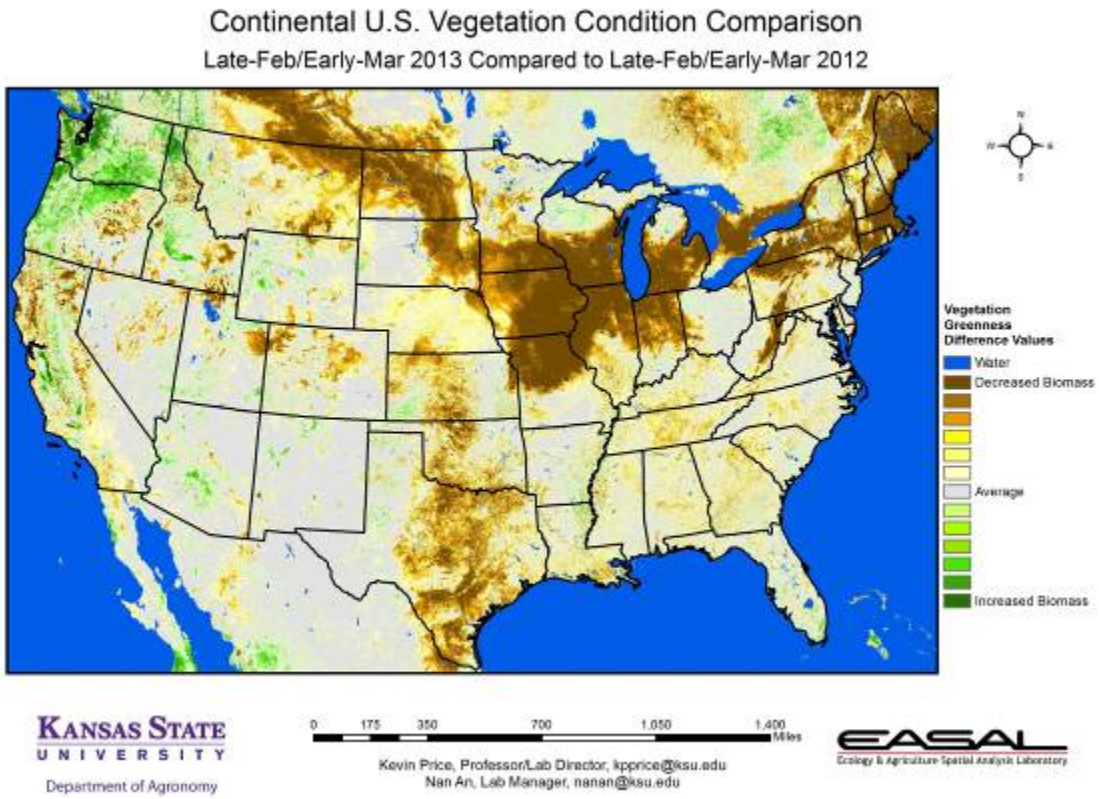
Map 5. The comparison to last year in the Corn Belt for the period February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows much lower NDVI values across a large portion of the region. Temperatures this year have been much cooler than last year. For example, temperatures in Iowa during February ranked 66th warmest. Last year it ranked as the 16th warmest.



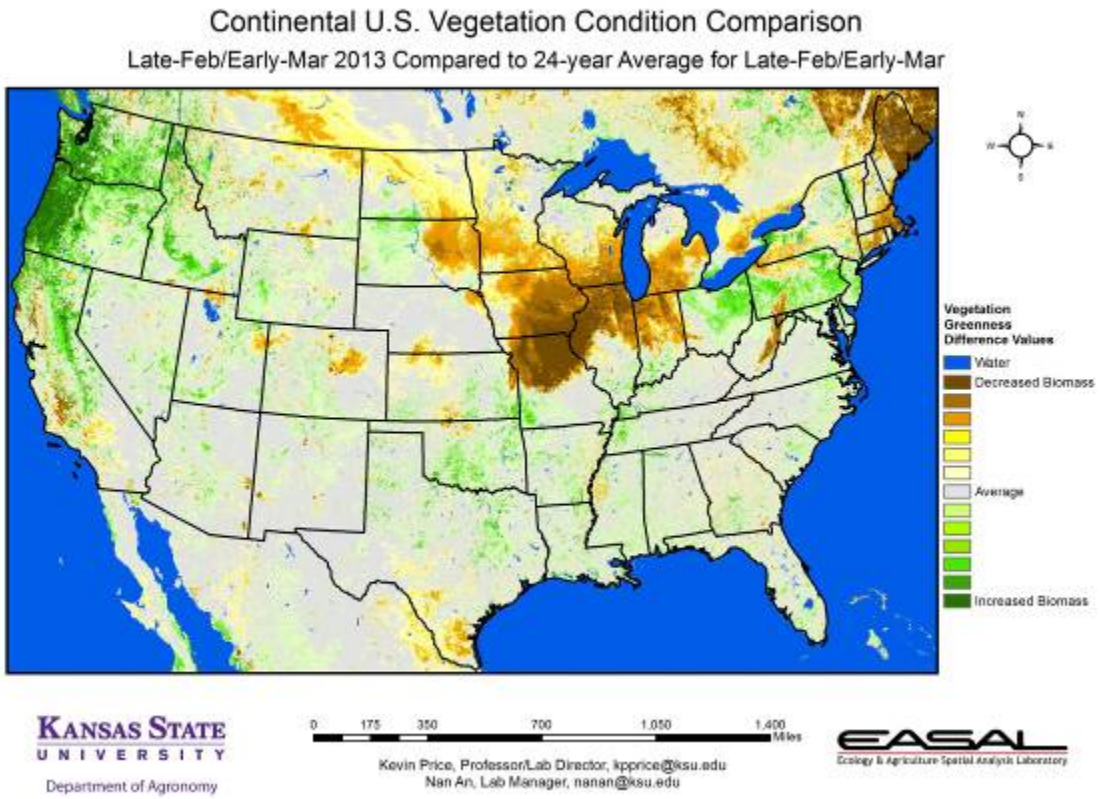
Map 6. Compared to the 24-year average at this time for the Corn Belt, this year's Vegetation Condition Report for February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the center of this region continues to have lower-than-average photosynthetic activity. While moisture levels have rebounded somewhat, cooler-than-average temperatures in the area continue to delay photosynthetic activity.



Map 7. The Vegetation Condition Report for the U.S. for February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows snow cover as far south as Texas. This occurred mainly in the first week of the analysis period. By the end of the period, snow cover had retreated to the higher elevations and the northern portions of the country -- from northeastern Montana through New England. The southern extent was from northern Iowa to western Pennsylvania and along the Appalachians into Tennessee.



Map 8. The U.S. comparison to last year at this time for the period February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that plant productivity has the biggest decrease in the northern portions of the country. Cooler temperatures and frozen soils have slowed photosynthetic activity. This is true to a lesser extent in the Central and Southern Plains as well.



Map 9. The U.S. comparison to the 24-year average for the period February 26 – March 11 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that NDVI values are above average along the Pacific Northwest, where moderate temperatures and favorable moisture have increased plant productivity. In the Central U.S., cooler-than-average temperatures have limited photosynthetic activity.

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5. Note on email problems with recent issues

The last two weeks or so, there have been some technical difficulties in sending out the Agronomy e-Updates by email to our subscribers. Our tech support staff has now resolved this issue. To see all past issues, you can go either to our web site or Facebook page, using the following links:
Web site: http://www.agronomy.ksu.edu/extension/p.aspx?tabid=58
Facebook: http://www.agronomy.ksu.edu/extension/p.aspx?tabid=1#K-StateWheat

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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.