



K-STATE
Research and Extension

Extension Agronomy

eUpdate

09/26/2014

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.

1. KanMark: New wheat variety from K-State.....	3
2. Head mold in grain sorghum.....	4
3. October weather outlook.....	6
4. Comparative Vegetation Condition Report: September 9 - 22.....	10

1. KanMark: New wheat variety from K-State

KanMark is a new hard red winter wheat variety from K-State's Manhattan wheat breeding program. It was released in 2014. KanMark is targeted primarily for the western half of Kansas, west of Russell. It can also do well in central Kansas as long as producers take precautions on acid soils and where wheat is planted after corn.



KanMark's most desirable trait is its reliability under moderate drought. It is more of a "workhorse" than a "racehorse" variety, with remarkably consistent yields under less-than-favorable water inputs.

It tends to be in the top third of the tests every time. It is not often right at the top of the tests, but is always up there. Its performance under irrigated conditions is also notable.

It is a short wheat with a very upright growth habit and open canopy. Leaf rust and stripe rust resistance is a strength of this new variety. It is also resistant to soilborne mosaic and moderately resistant to stem rust. It is intermediate to tan spot and septoria leaf blotch, but is susceptible to powdery mildew and Hessian fly. It is moderately susceptible to barley yellow dwarf and wheat streak mosaic.

One of the weaknesses of KanMark is that it is extremely susceptible to head scab – similar to Overley. For this reason, it is not well suited for planting after corn. KanMark is also moderately susceptible to aluminum toxicity on low-pH soils, with a reaction similar to Fuller.

Its straw strength is excellent, and its test weight is very good. It has medium maturity.

KanMark is marketed by Kansas Wheat Alliance. Foundation seed has been distributed this fall to interested seed producers who have a license with KWA. A limited supply of certified seed could be available in 2015 with larger supplies the following year.

KanMark is named after Mark Carleton, an early plant explorer with K-State and first president of the American Society of Agronomy. Carleton also developed Kanred, the first wheat variety to be released by K-State.

The pedigree of Kanred includes lines from a Karl 92 derivative, Parula, and Pastor.

Allan Fritz, Wheat Breeder
akf@ksu.edu

2. Head mold in grain sorghum

During periods of high humidity and warm weather such as what has occurred in many places around Kansas the past several weeks, fungal molds can begin to develop on sorghum heads. White and cream colored sorghums are more vulnerable because there is less tannic acid in the seed coat. Tannic acid is a natural fungicide.

While losses are generally less than 5%, it is not unheard of to reach levels of 30% or more depending on the hybrid, time of flowering, maturity, and soil type. Grain molds can affect both the quantity and quality of the grain. Unlike corn however, there are few reports of problems with mycotoxins developing in the grain that could lead to livestock feeding problems.

A number of different fungi can be responsible for grain mold including *Alternaria*, *Fusarium*, *Colletotrichum*, and *Curvularia*. In Kansas, grain molds generally are black to gray to green-black in color (see photo). The velvety growth can partially or entirely cover the berry. Berries damaged by head feeding worms or birds are more likely to be colonized by mold.



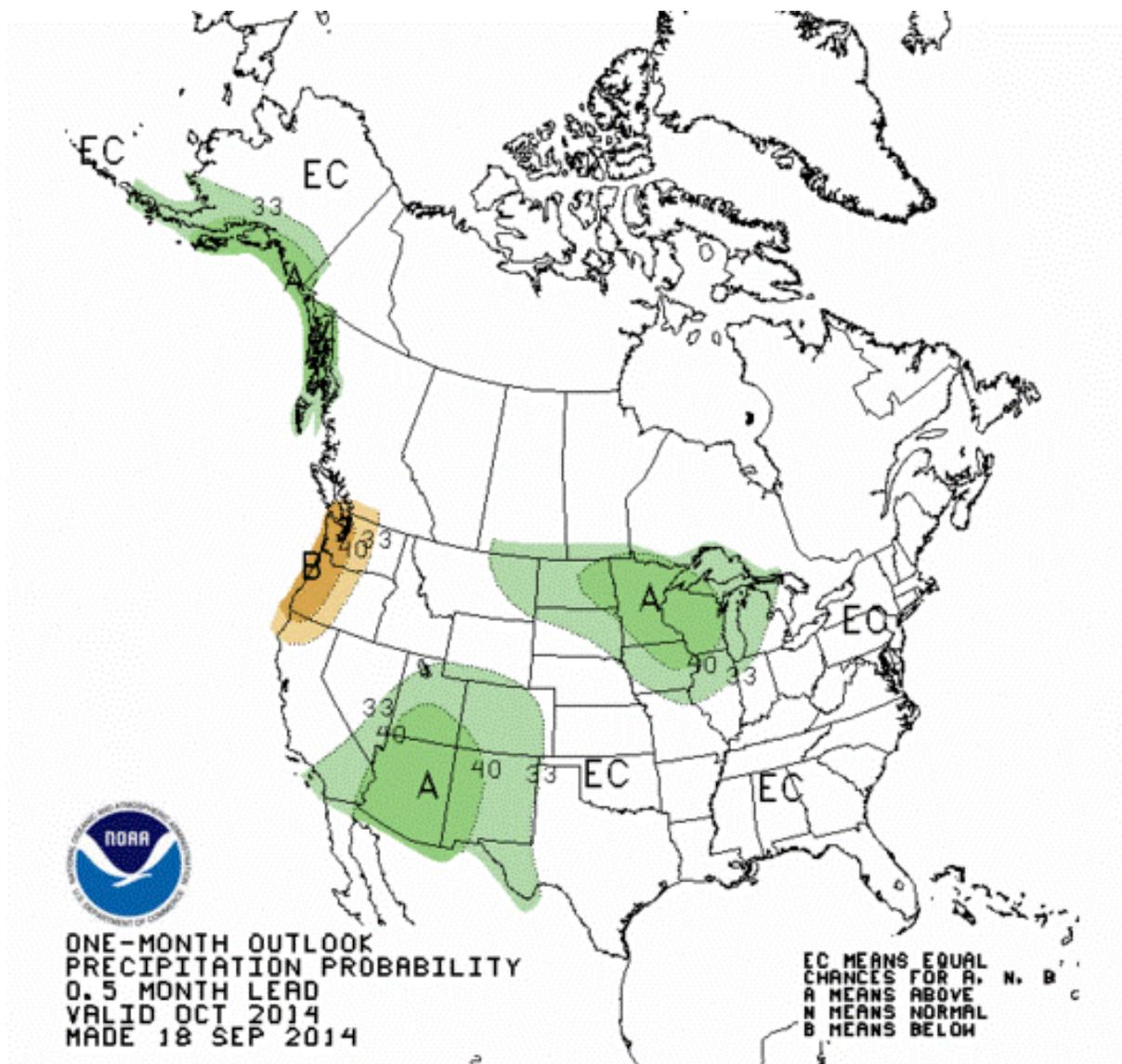
Figure 1. Head mold in grain sorghum. Photo courtesy of Doug Jardine, K-State Research and Extension.

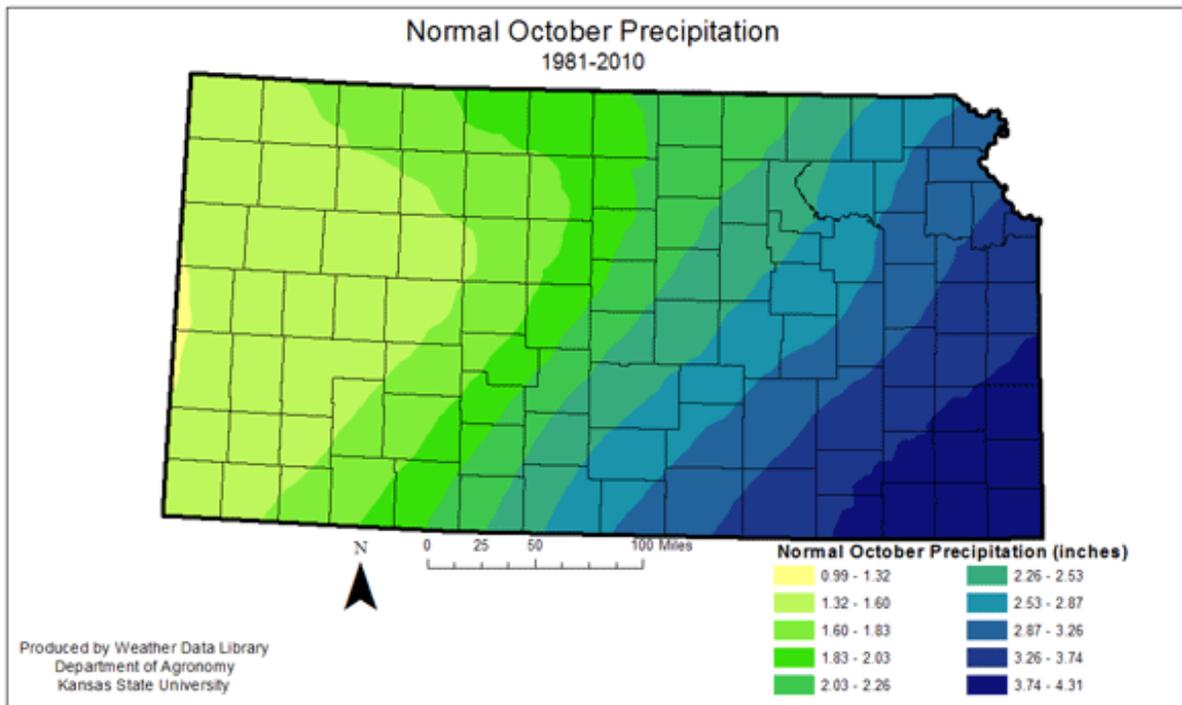
Grain from fields with significant levels of head mold should only be stored for very short periods of time since the problem can worsen in storage bins and lead to heating and crusting problems. If moldy grain must be placed in a bin, grain temperature should be lowered to below 50°F as soon as practical. Grain moisture should be below 13.5% and relative humidity in the bin should be kept below 50%.

Doug Jardine, Extension Plant Pathologist
jardine@ksu.edu

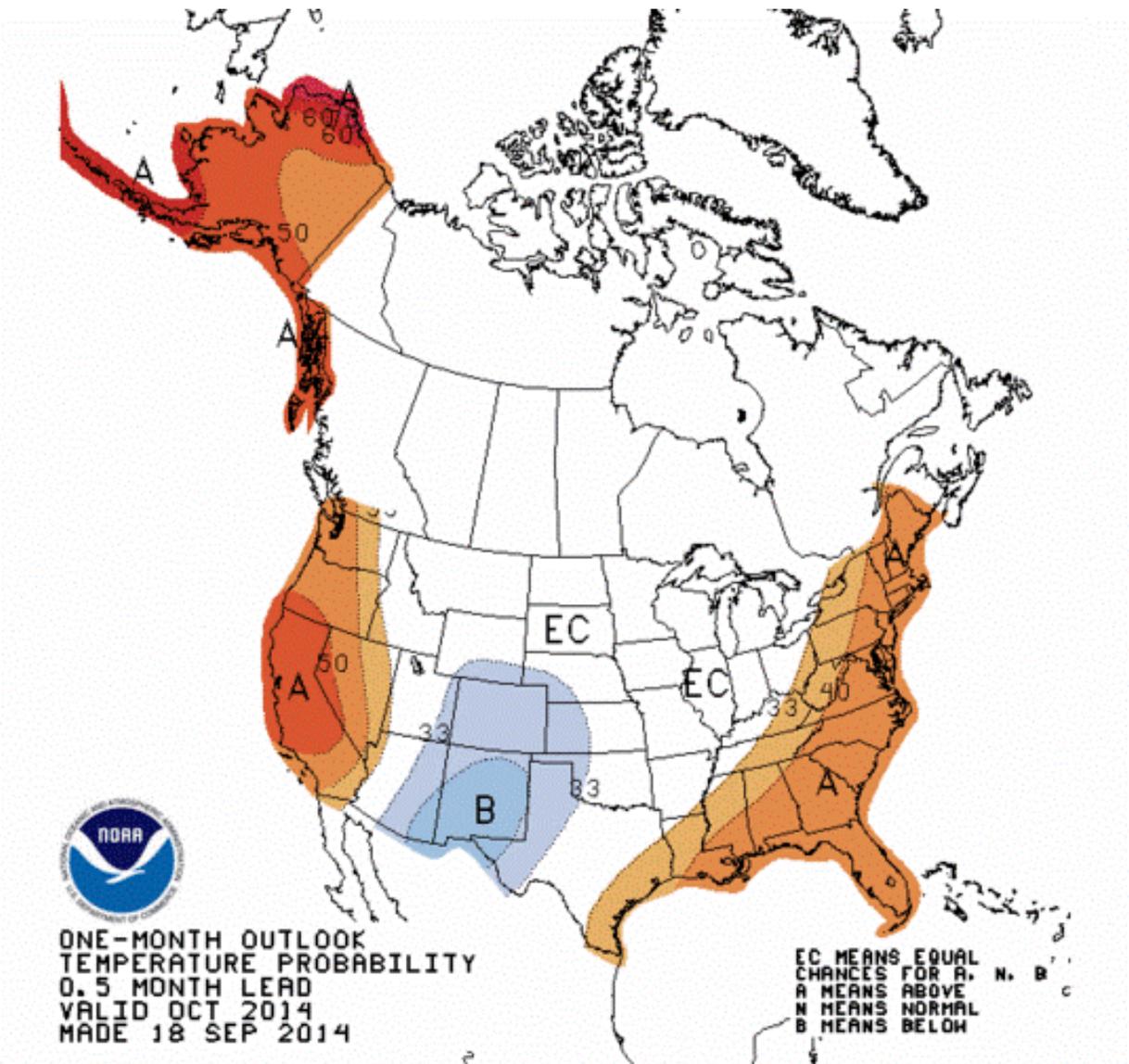
3. October weather outlook

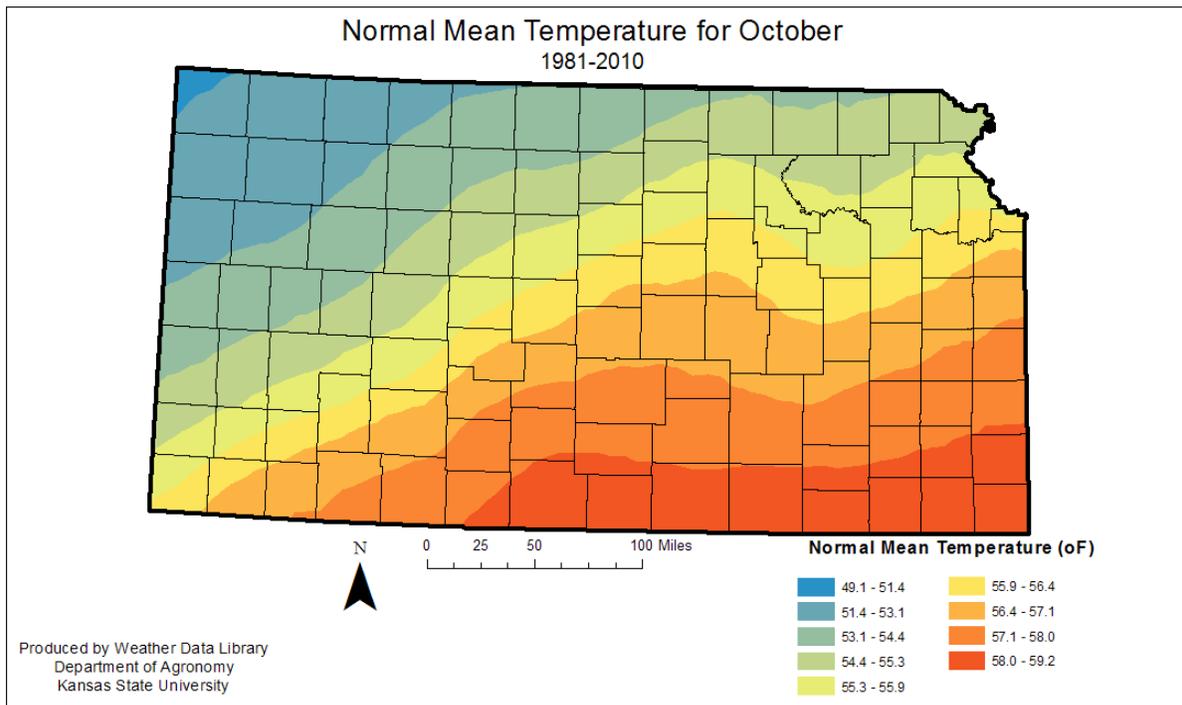
The national Climate Prediction Center (CPC) has released its short-term outlook for October. The precipitation outlook for Kansas is basically neutral. Chances are equally likely for above-normal, normal, or below-normal precipitation. In Kansas there is a very steep gradient west to east for October precipitation. In extreme west central Kansas the normal October precipitation is as little as an inch. In southeast Kansas, the normal precipitation is as high as 4.31 inches.





The CPC temperature outlook for October is also basically neutral across the state. The exception is western Kansas, where the outlook calls for a greater chance of below-normal temperatures for the month. As with precipitation, there is a steep gradient across the state, although with more of a north-south trend. In extreme northwest Kansas the normal mean temperature for October is as cool as 49 degrees F. Along the Oklahoma border in south central and southeast Kansas the mean temperature is as warm as 59 degrees F.





Remember, these are outlooks and are for the entire month. Significant departures can occur on any given day, and no outlook is perfect.

Mary Knapp, Weather Data Library
mknapp@ksu.edu

4. Comparative Vegetation Condition Report: September 9 - 22

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 25-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 38: 09/09/2014 - 09/22/2014

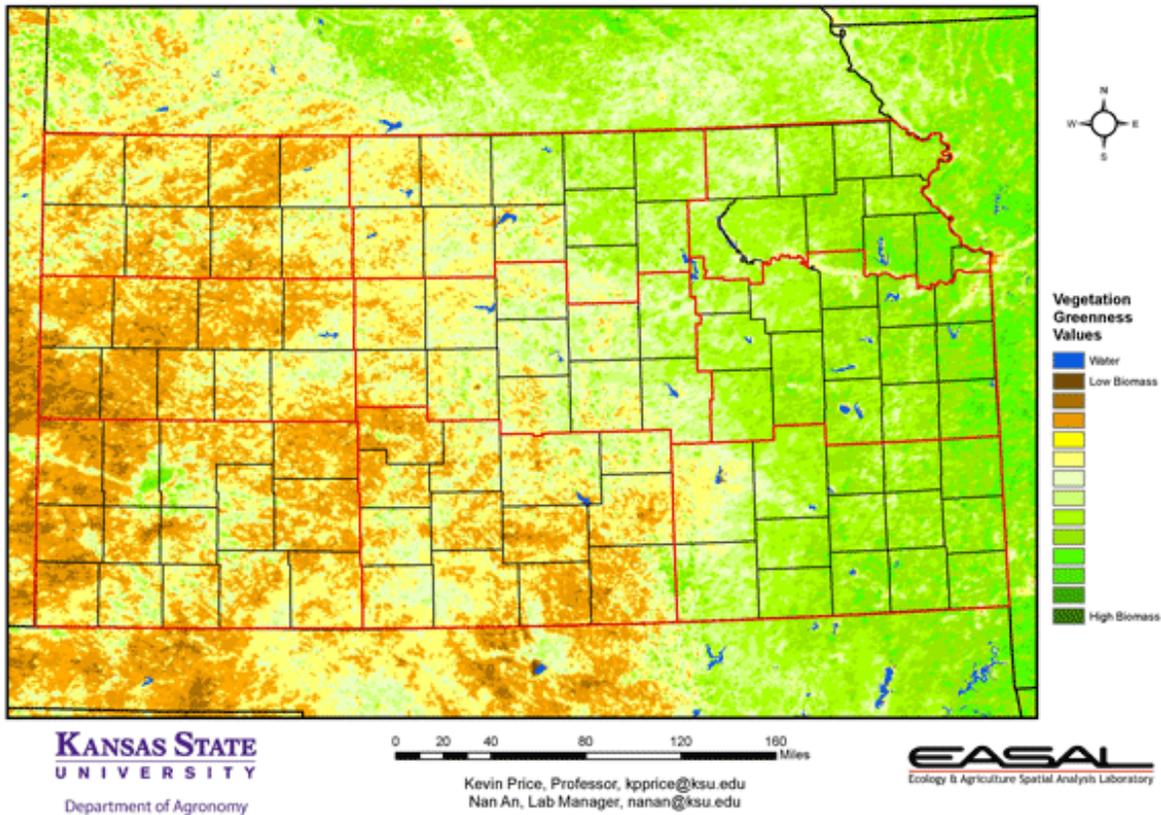


Figure 1. The Vegetation Condition Report for Kansas for September 9 – 22 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that photosynthetic activity continues to fade as we move into autumn. There is a small pocket of increased photosynthetic activity in the Arkansas River Valley on the border of Kearny and Finney counties. This corresponds to an area of alfalfa production.

Kansas Vegetation Condition Comparison
Mid-September 2014 compared to the Mid-September 2013

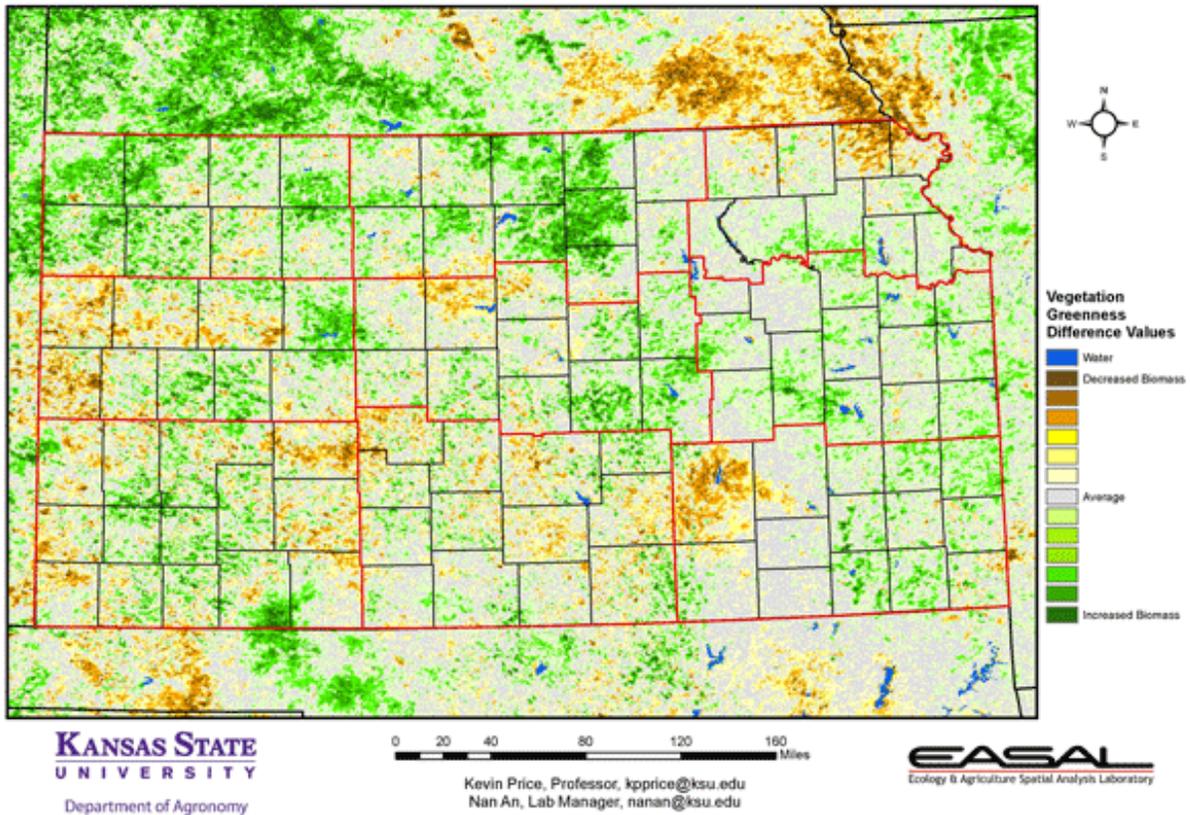


Figure 2. Compared to the previous year at this time for Kansas, the current Vegetation Condition Report for September 9 – 22 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that much of the state has greater photosynthetic activity. Pockets of lower NDVI values are seen across the state, however, as harvest and fall field preparation continue.

Kansas Vegetation Condition Comparison

Mid-September 2014 compared to the 25-Year Average for Mid-September

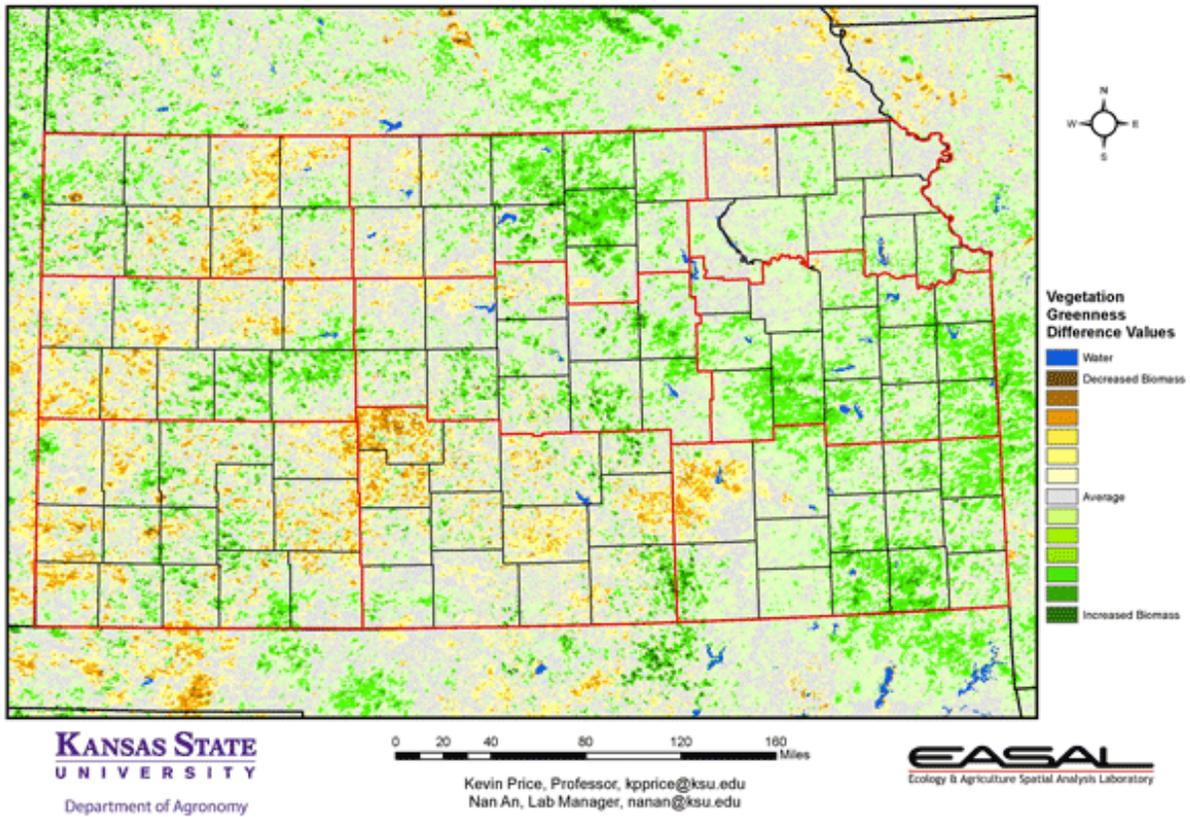


Figure 3. Compared to the 25-year average at this time for Kansas, this year's Vegetation Condition Report for September 9 – 22 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows above-average biomass production in the eastern parts of the state. Recent moisture in Greenwood, Labette, and Montgomery counties have favored late-season growth. Madison, in Greenwood County, has reported 9.45 inches of precipitation for September to date.

Kansas State University Department of Agronomy

2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506

www.agronomy.ksu.edu | www.facebook.com/KState.Agron | www.twitter.com/KStateAgron

U.S. Corn Belt Vegetation Condition

Period 38: 09/09/2014 - 09/22/2014

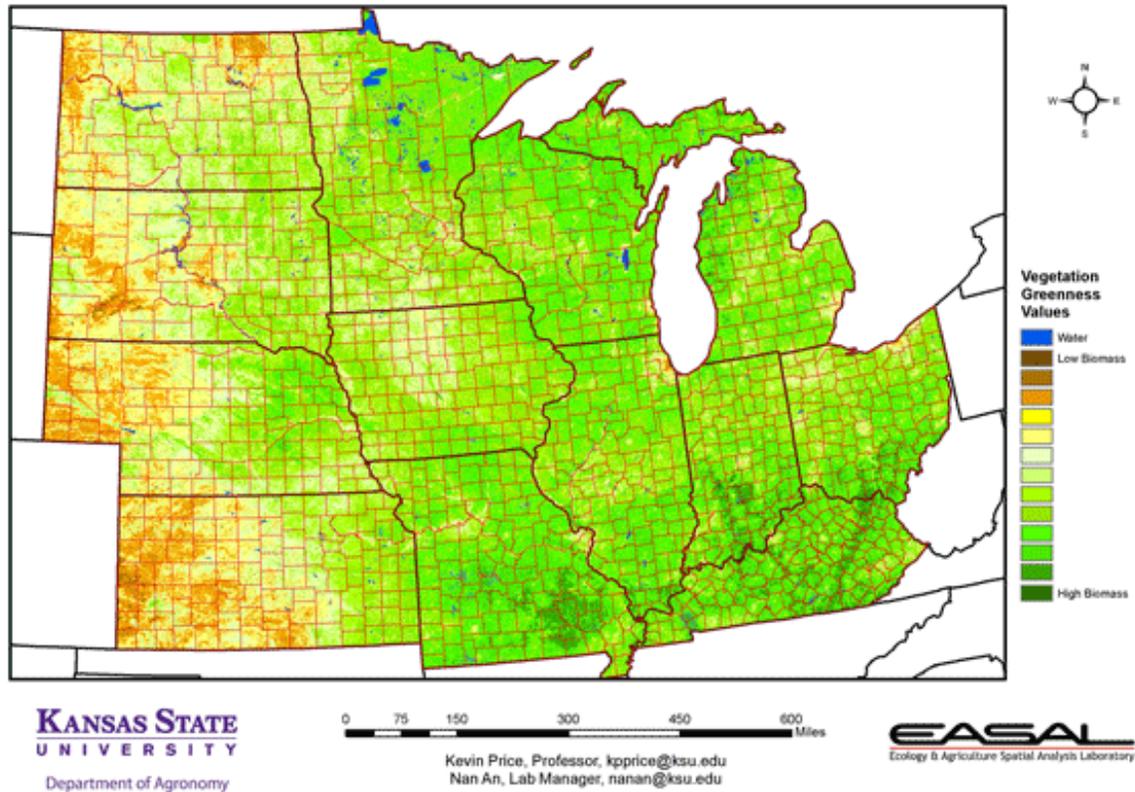


Figure 4. The Vegetation Condition Report for the Corn Belt for September 9 – 22 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that the highest biomass productivity continues to be in the southern portions of the region. This is particularly visible in southeastern Missouri. From the latest crop reports, corn in this part of the state is reported at 88 percent good to excellent condition, with soybeans at 68 percent good to excellent condition.

U.S. Corn Belt Vegetation Condition Comparison
Mid-September 2014 Compared to Mid-September 2013

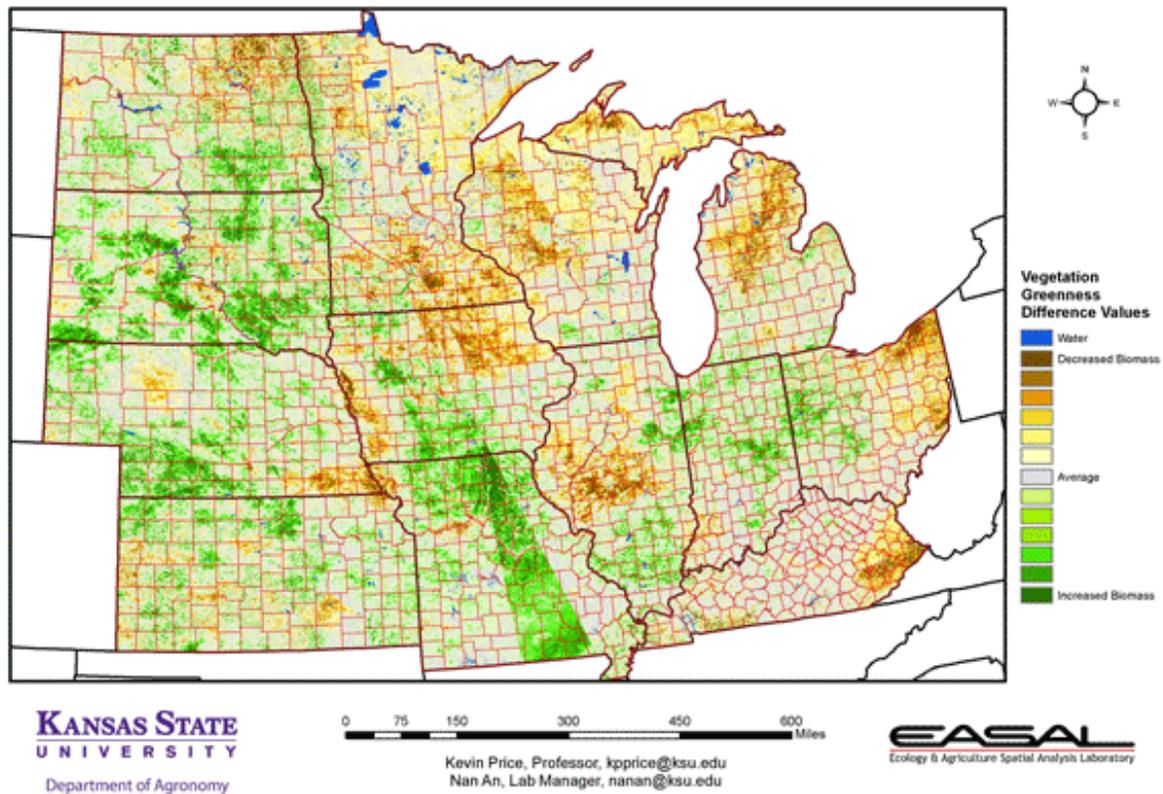


Figure 5. The comparison to last year in the Corn Belt for the period September 9 – 22 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows a pronounced splice line in central Missouri. Discounting this artifact of clouds, it is evident that higher NDVI values are most prominent in the western portions of the region. The cool, wet summer has continued to delay crop progress relative to last year. For example, in South Dakota despite a week of warmer-than-normal temperatures, corn is only 22 percent mature. This is half the 5 year average of 44 percent mature by this date.

U.S. Corn Belt Vegetation Condition Comparison
Mid-September 2014 Compared to the 25-Year Average for Mid-September

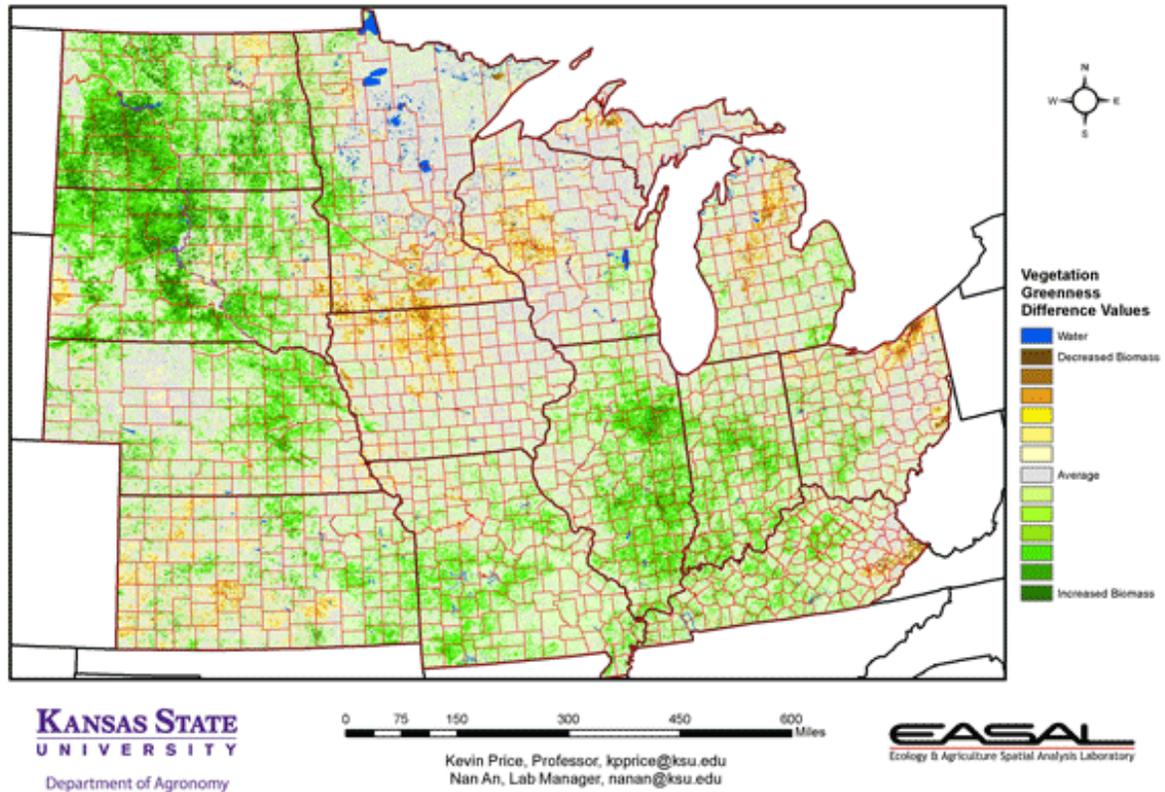


Figure 6. Compared to the 25-year average at this time for the Corn Belt, this year's Vegetation Condition Report for September 9 – 22 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the largest area of above-normal biomass production continues to be in the Dakotas. Delayed crop progress raises concerns of frost damage.

Continental U.S. Vegetation Condition

Period 38: 09/09/2014 - 09/22/2014

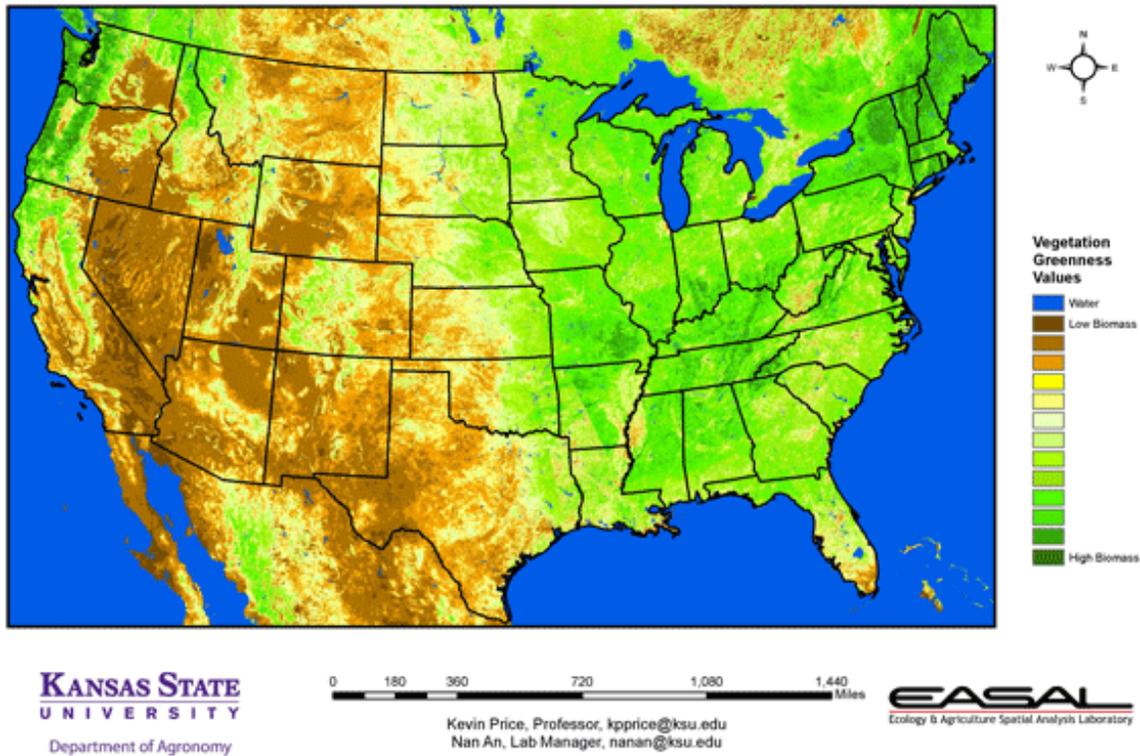


Figure 7. The Vegetation Condition Report for the U.S. for September 9 – 22 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that high photosynthetic activity continues in upper New England, and along the Cascades in the Pacific Northwest. In New England, temperatures ranged from 2 to 12 degrees cooler than normal for the week. Pasture conditions are rated at 56 percent good to excellent. Early frost resulted in some damage to crops, which will become more visible over time.

Continental U.S. Vegetation Condition Comparison
Mid-September 2014 Compared to Mid-September 2013



KANSAS STATE
UNIVERSITY
Department of Agronomy

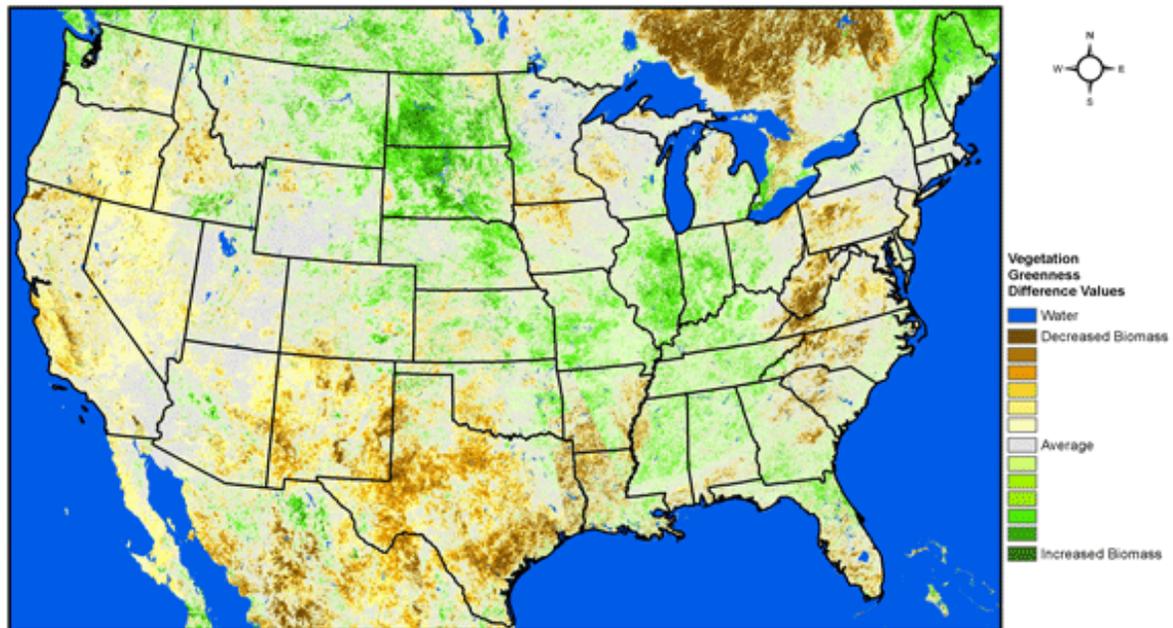
0 175 350 700 1,050 1,400 Miles

Kevin Price, Professor, kpprice@ksu.edu
Nan An, Lab Manager, nanan@ksu.edu

EASAL
Ecology & Agriculture Spatial Analysis Laboratory

Figure 8. The U.S. comparison to last year at this time for the period September 9 – 22 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that, aside from the splice line, the level of photosynthetic activity in the mid-Atlantic region is lower. Abnormally dry conditions are showing in the latest U.S. Drought Monitor, where conditions were more favorable last year.

Continental U.S. Vegetation Condition Comparison
Mid-September 2014 Compared to 25-year Average for Mid-September



KANSAS STATE
UNIVERSITY
Department of Agronomy

0 175 350 700 1,050 1,400 Miles

Kevin Price, Professor, kpprice@ksu.edu
Nan An, Lab Manager, nanan@ksu.edu

EASAL
Ecology & Agriculture Spatial Analysis Laboratory

Figure 9. The U.S. comparison to the 25-year average for the period September 9 – 22 from K-State’s Ecology and Agriculture Spatial Analysis Laboratory shows that the Central and Northern Plains continue to have above-average biomass productivity, with the highest values in the Dakotas. In contrast, New Mexico and Texas are showing lower-than-average biomass production. Moderate to severe drought conditions continue in Texas, and these are complicated by the flooding rains produced in New Mexico and Texas over the last two weeks. Elk, New Mexico reported 10.48 inches so far in September. The annual average for the area is just 11.88 inches.

Mary Knapp, Weather Data Library
mknapp@ksu.edu

Kevin Price, Professor Emeritus, Agronomy and Geography, Remote Sensing, GIS

Kansas State University Department of Agronomy
2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506
www.agronomy.ksu.edu | www.facebook.com/KState.Agron | www.twitter.com/KStateAgron

kpprice@ksu.edu

Nan An, Graduate Research Assistant, Ecology & Agriculture Spatial Analysis Laboratory (EASAL)
nanan@ksu.edu