



Extension Agronomy

eUpdate

12/21/2017

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, 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 Kathy Gehl, 785-532-3354 kgehl@ksu.edu, or Curtis Thompson, Extension Agronomy State Leader and Weed Management Specialist 785-532-3444 cthompso@ksu.edu.

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1. Nutrient availability in poultry manure

Poultry litter can provide a significant and important supply of nutrients for crop production in areas of Kansas where a supply of litter is available. Although Kansas is not a major producer of poultry, there is an abundant supply of litter from the nearby states of Arkansas, Missouri, and Oklahoma, which rank among the largest producers of poultry in the U.S. The acreage available to receive poultry litter has been declining in Arkansas, Missouri, and Oklahoma in recent years because of environmental concerns and nutrient management regulations. That trend, coupled with high fertilizer prices, has meant the availability of litter to areas such as southeast Kansas has been on the rise.

Poultry litter should serve as an excellent complement to commercial nitrogen (N) fertilizers. Phosphorus (P) content in poultry litter is usually high, and applications rates should be based on P levels to avoid potential surface water contamination.

Table 1. Types and properties of poultry litter

Source	Typical moisture content	Typical nutrient content (lb per ton)		
		N	P ₂ O ₅	K ₂ O
Layer	High	35	40	20
Pullet	Low	40	45	40
Breeder	High	40	60	40
Turkey	Low	60	60	55
Broiler	Low	60	60	55

Moisture content and nutrient concentration in poultry litter can be highly variable and depends mainly upon production conditions, storage, and handling methods. Therefore, laboratory analysis is the best way to determine the level of N and P in the material to be applied. Table 1 presents average values of moisture and nutrient content for the different types of poultry manure collected over a period of time. The graph (Figure 1) presents the actual laboratory analysis of 213 poultry manure samples from southeast Kansas. There is a large range in nutrient values, likely due to the source of the litter. However, a good sample average to expect would be a 56-53-46.

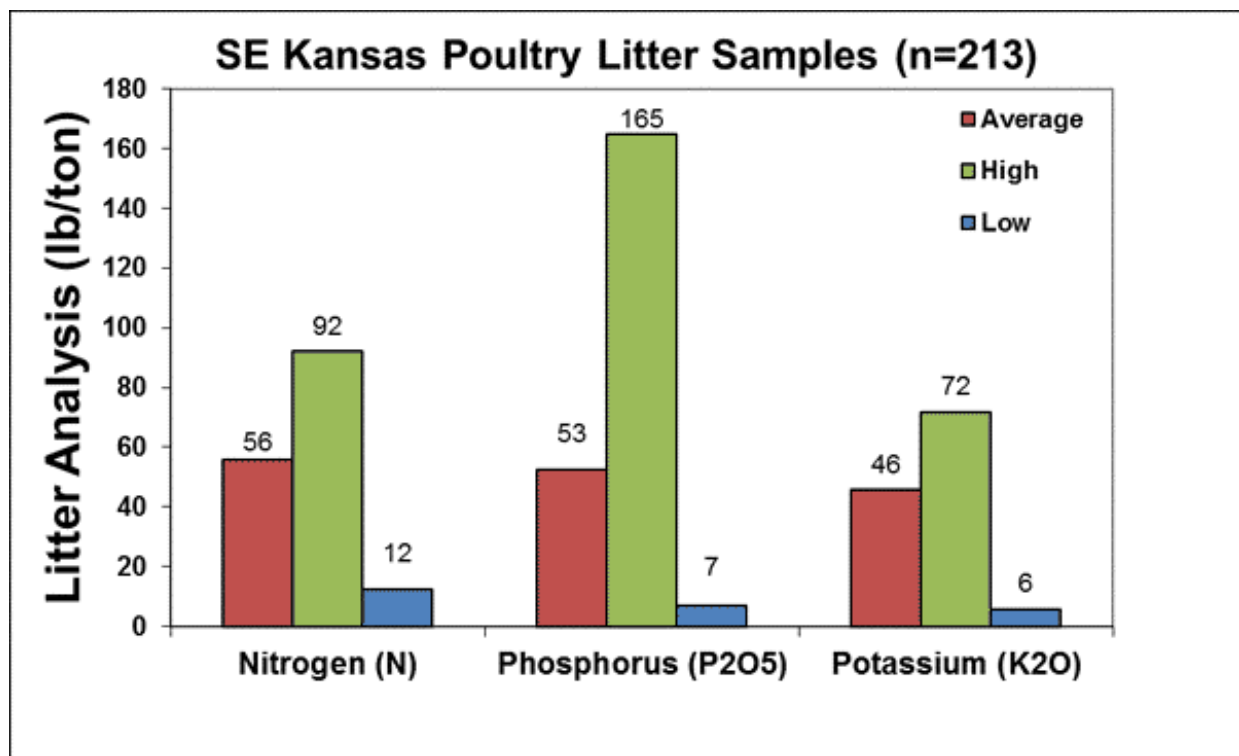


Figure 1. Results of analysis of 213 samples of poultry manure from southeast Kansas. Sources: Keith Martin, K-State Research and Extension, Wildcat Extension District and Doug Shoup, K-State Research and Extension.

For maximum efficiency of manure use, it is essential to know the nutrient content of the manure. Using a manure lab analysis will help in determining the actual nutrient rates applied. A laboratory analysis should be done on the poultry litter before applying it to land. A laboratory analyses provides information regarding nutrient levels, as well as the chemical forms of these nutrients. This information is necessary for an adequate estimation of nutrient availability and application rates. For more information, see K State Extension publication MF-2562, "Estimating Manure Nutrient Availability," at: <http://www.ksre.ksu.edu/bookstore/pubs/MF2562.pdf>

Nitrogen availability

A common question with poultry litter application is how much N and P will be available to the crop shortly after application. In the case of N, it is important to consider that this nutrient is primarily in the organic form in poultry litter (up to 75-80% organic N). Organic N needs to mineralize into inorganic forms before becoming available to crops. A fraction of this organic N may become part of the soil organic matter pool and unavailable to crops in the short term.

Field and laboratory studies suggest the fraction of total nitrogen that becomes plant available the first year of application is approximately 45-55%, which includes both the inorganic N in the manure and a percentage of the organic N. This value varies depending upon components in the litter, and the method of handling and application. For example, poultry litter that contains a large fraction of bedding material will tend to have lower N availability the year of application. Reduction in N

availability may also occur when litter is aged and has undergone some level of composting. Nitrogen lost from the volatile ammonium fraction at the time of application to the soil surface can also reduce plant available N. Ammonium volatilization is typically higher during windy and warm days. Incorporation of litter immediately after application will reduce volatilization and potential nutrient loss by water runoff in case of a rainfall event, in addition to reducing the odor of the litter.

If the manure is applied to pastures, the percentage of N utilized by the forage the first year will depend on whether the pasture consists of cool-season or warm-season grasses. For cool-season grasses, such as fescue pasture, N utilization will likely be less than 50% the first year. Most of the growth in cool-season pasture occurs early in the year. The microbial community will not mineralize as much N early in the spring as they will later in the summer. Fall applications may result in better N utilization for fescue than winter or spring applications. For warm-season grasses, such as bermudagrass pasture, nitrogen utilization from manure will likely be close to 50%. In both cases, producers should base application rates on the P and potassium (K) needs of the grass, and supplement additional N fertilizer to meet the N needs of the grass.

Phosphorus and potassium availability

When manure is applied to the soil, what percentage of this P and K is available to the crop during the first year?

A large fraction of the P in manure is considered to be plant available immediately after application. The fraction that is not plant available shortly after application will become available over time.

Estimated values of P availability are from 50 to 100%. This range accounts for variation in sampling and analysis, and for P requirements with different soil test levels. Use the lower end of the range of P availability values (50%) for soils testing "Very Low" and "Low" (below 20 ppm) in phosphorus. In these situations, large yield loss could occur if insufficient P is applied and soil P buildup is desirable.

On the other hand, use 100% availability when manure is applied to maintain soil test P in the "Optimum" soil test category, and when the probability of a yield response is small.

Several studies have shown that manure P is a valuable resource, comparable to inorganic fertilizer P for crop production. These two P sources are similarly effective when the manure P concentration is known and the manure is applied properly.

Nevertheless, excessive application of manure P (for example, applying manure at rates sufficient to meet the crop's nitrogen needs) often results in excessive soil P buildup over time, resulting in higher risk of surface water contamination. This problem of excessive P buildup in the long-term can be minimized by:

- Applying manure to meet the P needs of the crop and using inorganic sources of fertilizer to complement nitrogen needs,
- Constantly monitoring soil test P levels, and
- Using the P-index to assess potential impact of phosphorus buildup on water quality.

Producers should think in terms of actual phosphorus application rates and not just tons per acre of manure being applied. Uniform application of manure at precise rates can also be difficult. Careful calibration of manure applicators is needed. If these aspects are not considered, the efficiency of

manure P compared with inorganic fertilizer P may be reduced. Careful management pays off.

Availability of potassium is usually near 100% with proper application. Poultry litter can also provide significant amounts of secondary and micronutrients.

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2. Calculating the value and proper storage of poultry litter

The use of poultry litter can contribute to reducing the cost of fertilizer inputs for many operations, depending on the price and transportation cost of the litter. For many farmers the use of poultry litter may represent significant savings. However, for many producers there is a “hassle factor” with using poultry litter. Reliable delivery, storage site location, uniform application, access to application equipment, and odor can all be additional challenges to producers unfamiliar with its use and should be a consideration.

Calculating poultry litter value

How valuable is poultry manure? This may not be a straightforward answer and depends on several factors, including the nutrient(s) required for a specific field. Here is one example using the average nutrient analysis values from southeast Kansas of 56-53-46 (N-P₂O₅-K₂O lb per ton):

Year 1

- 35% of N is inorganic (all available) = 19.6 lb N/ton litter
- 65% of N is organic (25% is available in year 1) = 9.1 lb N/ton litter
 - Total N available in year 1 = 28.7 lb N/ton litter
 - Total value of N available in year 1 (@ \$0.33/lb N) = \$9.47/ton litter
- P is 50% available in year 1 = 26.5 lb P₂O₅/ton litter
 - Total value of P in year 1 (@ \$0.40/lb P₂O₅) = \$10.60/ton litter
- K is 100% available in year 1 = 47.0 lb K₂O/ton litter
 - Total value of K in year 1 (@ \$0.22/lb K₂O) = \$10.34/ton litter
- **Total in year 1 = \$30.41/ton litter**
- **Residual N and P = \$19.61/ton litter**

In addition to the N, P, and K, poultry litter also contains sulfur, micronutrients, and organic matter which adds additional value to the poultry litter.

Storage considerations

Proper storage of manure is important to prevent runoff contamination of water and odor problems. The following practices should be utilized:

- Avoid stockpiling litter near homes, public roadways, and drainage ditches.
- Stockpile litter at least 200 feet away from “Waters of the State.”
- Use tarps on litter piles to keep litter dry, reduce odor, and reduce N losses from volatilization.
- Create an earthen berm around piles to allow time for water and nutrients running off the pile to infiltrate.

Additional considerations when selecting a suitable storage site

- Locate stockpiles in areas with minimal slope.
- Avoid sites that slope toward waterways and receive extraneous drainage.
- Locate sites in areas surrounded by grass that can serve as a buffer.
- Avoid sensitive groundwater areas and sites in close proximity to wells.



Figure 1. Stockpiling poultry litter. Photo by Doug Shoup, K-State Research and Extension.

If poultry litter is a regular part of your operation's fertility program, consider constructing improved poultry litter storage sites that include a storage pad built out of lime screenings, all-weather truck access, and a grass or cropland buffer to trap nutrients leaving the storage site. K-State Research and Extension Watershed Specialists may be able to provide assistance in identifying suitable storage locations and/or designing improved temporary storage sites that poses the least possible environmental risk from runoff for the area.

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3. Soil considerations for onsite wastewater systems

When selecting a new home site, the first two questions should be about water:

1. *What's the water source?*
2. *Where's the wastewater going to go?*

This article focuses on the second question and the most important factors in siting a new wastewater system, or finding a new site if an existing system fails.

The first step in this process is to contact the local environmental health department. You'll need to secure a permit and the staff can fill you in on the local regulations such as the "setbacks" or distances that wastewater systems must be from other features (i.e. property lines, water wells, etc.).

Second, a site and soil evaluation is needed. Ask the local environmental health staff about how this procedure works in their area—some environmental health departments do the soil evaluations themselves, and in some areas this might be performed by a consulting soil scientist.

This comprehensive site and soil evaluation is the key component affecting selection, design, and long-term performance of an onsite wastewater system. A septic tank followed by a soil dispersal system (often referred to as a lateral field) is the most commonly used onsite wastewater system in Kansas and throughout the nation. Although effluent from a septic tank may be clear, it is still sewage. It is odorous and contains nutrients, disease organisms, and dissolved organic material. The soil must provide the additional treatment required. An effectively operating soil dispersal, or absorption, field treats the septic tank effluent as it enters the soil and percolates downward. The soil is the most important component of the wastewater dispersal field. Its properties determine appropriate treatment systems, the design loading rate, and the size of the dispersal field. When a building site has difficult soils, the cost of the system is usually higher.

The most important soil properties are soil depth, soil texture (sand, silt, and clay content), and the soil structure.

- **Soil depth:** Features that would limit a soil profile include bedrock or very gravelly layers at a shallow depth, or a high-water table. The state of Kansas requires a minimum of 4 feet of separation distance from the bottom of a dispersal field trench and a water table. That 4 feet of separation is the minimum, and it's needed so that the soil can act as a natural filter to treat the wastewater.
- **Soil texture:** An ideal soil for a lateral system would have some sand, some silt, and some clay. If you have too much clay, water won't be able to infiltrate fast enough and could pond to the soil surface. This can be overcome by increasing the size of the absorption field, which requires more space and adds cost. Another solution for clayey soils is a wastewater pond (also called a lagoon) and is a common type of septic system in Kansas. Lagoons require space, a fence, and checking with the local health department, homeowner's association, etc. to determine if they are allowed in that area. When soils are very sandy, the effluent could move too rapidly into the soil profile, and there are some parts of the state (for example, central Kansas) where there are sandy soils and high water tables. In this scenario, aboveground wastewater mounds are often constructed to increase the separation distance

between the bottom of the wastewater absorption field and the water table.

- **Soil structure:** Lateral fields should be constructed in natural soil profiles. Man-made soils almost never work because they don't contain soil structure and will compact with time, with the addition of water, and whenever they are trafficked. The stronger the soil structure, the faster wastewater will move into the soil, thus a smaller footprint of the wastewater system.

In summary, soils can provide excellent wastewater treatment and it is one of the services that soils provide for humankind. Identifying the most suitable soil on the property will save money and lead to the best long-term performing onsite wastewater systems.

For more detailed information, see the KSRE publication "Site and Soil Evaluation for Onsite Wastewater Systems" at <https://www.bookstore.ksre.ksu.edu/pubs/MF2645.pdf>

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4. Will Kansas receive the gift of Christmas snow?

With moisture being limited and holiday plans in the works, people are wondering if snow is in the outlook for Christmas. Unfortunately, historical records indicate the possibility is limited. The probabilities range from about seven to 30 percent (Figure 1).

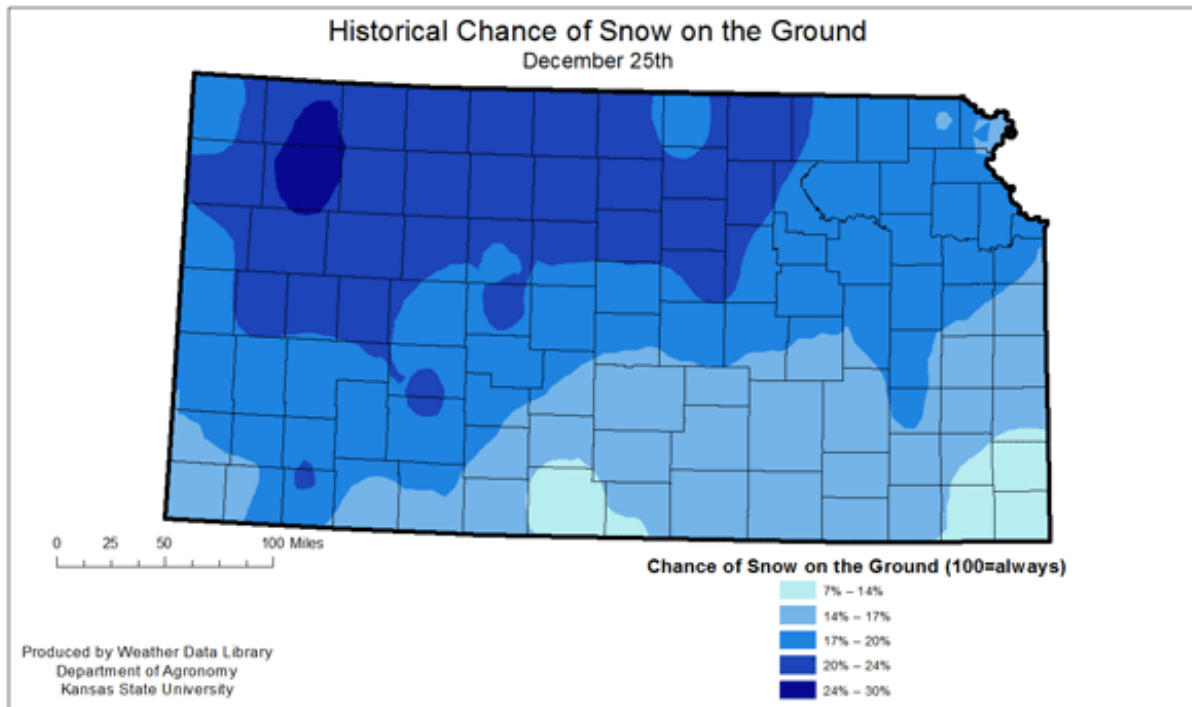


Figure 1. Historical percent chance of snow on the ground on December 25 for Kansas.

The outlook for Christmas snow is even less promising this year. While some areas have a slight chance of precipitation over the weekend, the amount of moisture indicated in the Quantitative Precipitation Forecast is limited (Figure 2). This makes snow for Christmas, and any drought relief, unlikely.

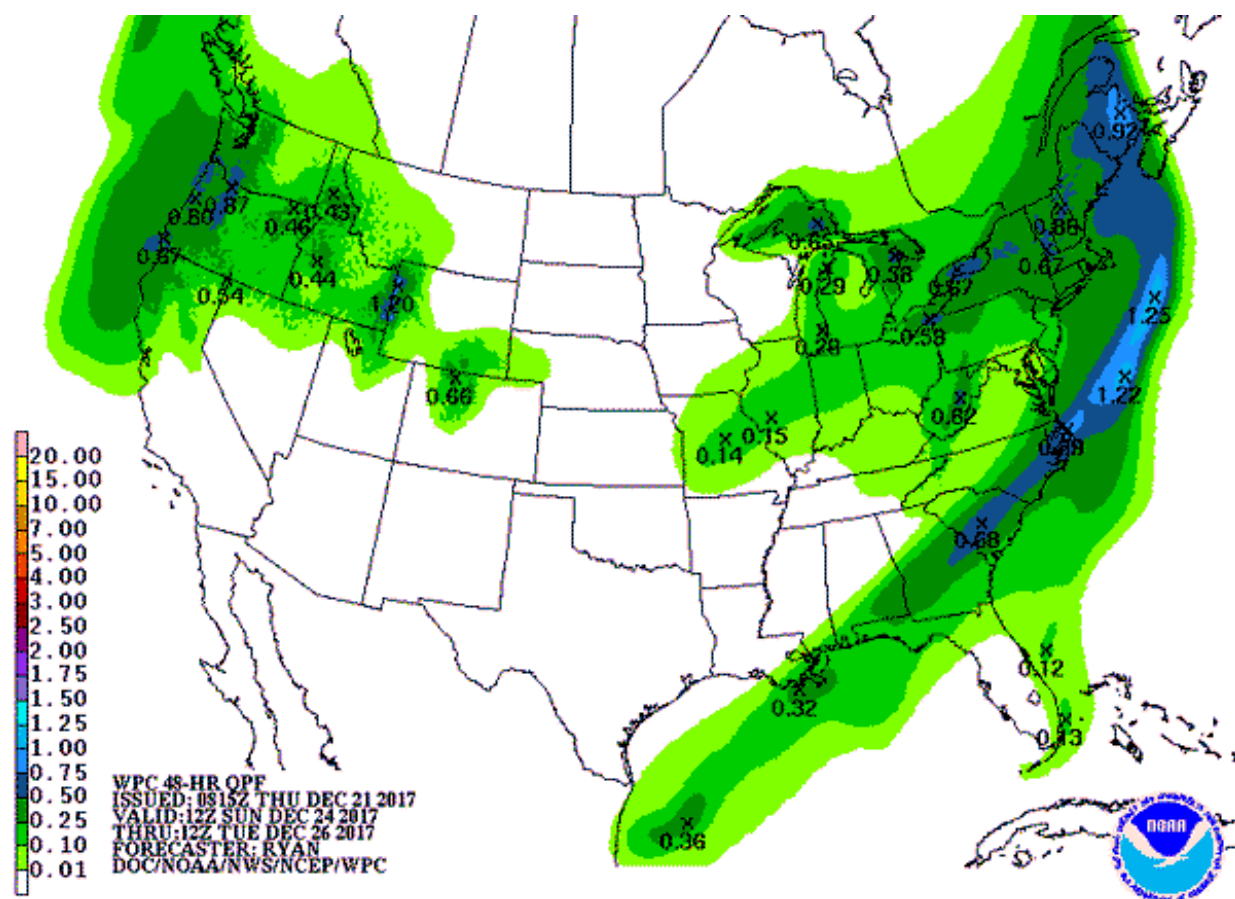


Figure 2. Forecast precipitation amounts (<http://www.wpc.ncep.noaa.gov/qpf/>).

Normal precipitation for this period would range between 0.01 inches per day in western Kansas to 0.04 inches per day in Southeast Kansas.

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5. Wind chill analysis...at your fingertips!

Very cold winter days are upon us! However, it isn't always the temperature that gives the air that nip. The "feel like" temperature is usually influenced by the wind as well. We call this the wind chill. This article will provide a quick background on wind chill and how you can access current wind chill data on the Kansas Mesonet webpage.

What is the wind chill?

When temperatures drop below 50 degrees F and wind speeds are greater than 5 mph, the "Feels Like" temperature is lower than the actual temperature. Wind chill can be calculated two ways: 1) using the chart below, or 2) mathematically. As the wind increases and/or the temperature decreases, wind chill values decrease. This means that despite it being 0 degrees F on a very cold morning, when factoring in the wind (say 20 mph), it can feel like a much colder temperature (in this example -22 degrees F).

This colder "feels like" temperature can not only make you feel chilled quicker, it can also lead to other problems such as frostbite much quicker. Exposure time estimations of frostbite issues at 0 degrees F with no wind is 30 minutes, while 0 degrees F and 55mph winds is less than 10 minutes of exposure. Wind chills can be determined by the following chart from the National Weather Service (found at <http://www.nws.noaa.gov/om/winter/windchill-images/windchillchart3.pdf>):

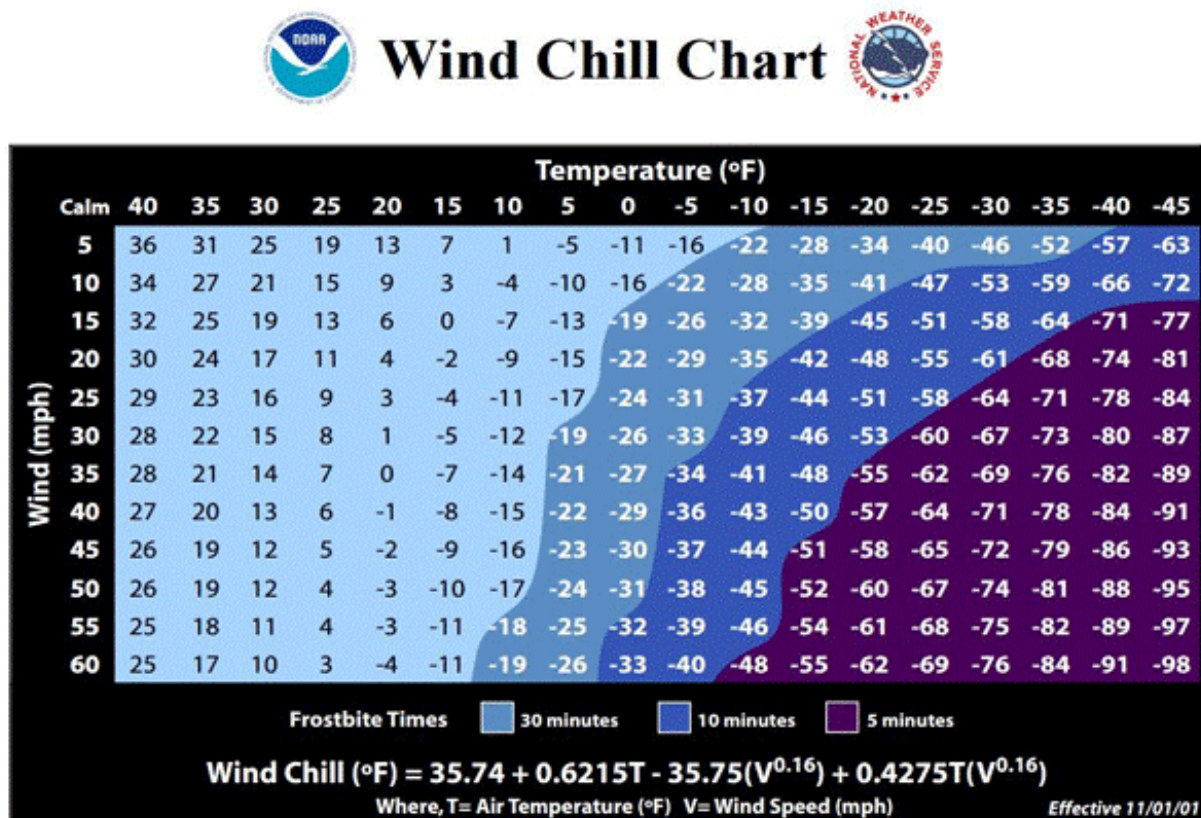


Figure 1. Wind chill chart from the National Weather Service.

Where can you access wind chill data?

The Kansas Mesonet makes viewing the wind chill very easy! We have put together a webpage that displays a gradient map that depicts the current wind chill at: mesonet.ksu.edu/weather/wind_chill

It is also accessible by clicking the banner on the Kansas Mesonet's homepage. The map defaults to the current wind chill, but also has a selection at the top where you can change the map to view temperature and wind speed/direction. Since these are the two ingredients for the wind chill, it tells the complete story. The table below the map also displays the wind chill, temperature, and wind data for each station in sortable columns. By clicking the column headings, that particular column will sort from lowest to highest values. Click it again and it will reverse. You can also select a specific station either on the map or in the data table and it will display the specific information for that location.

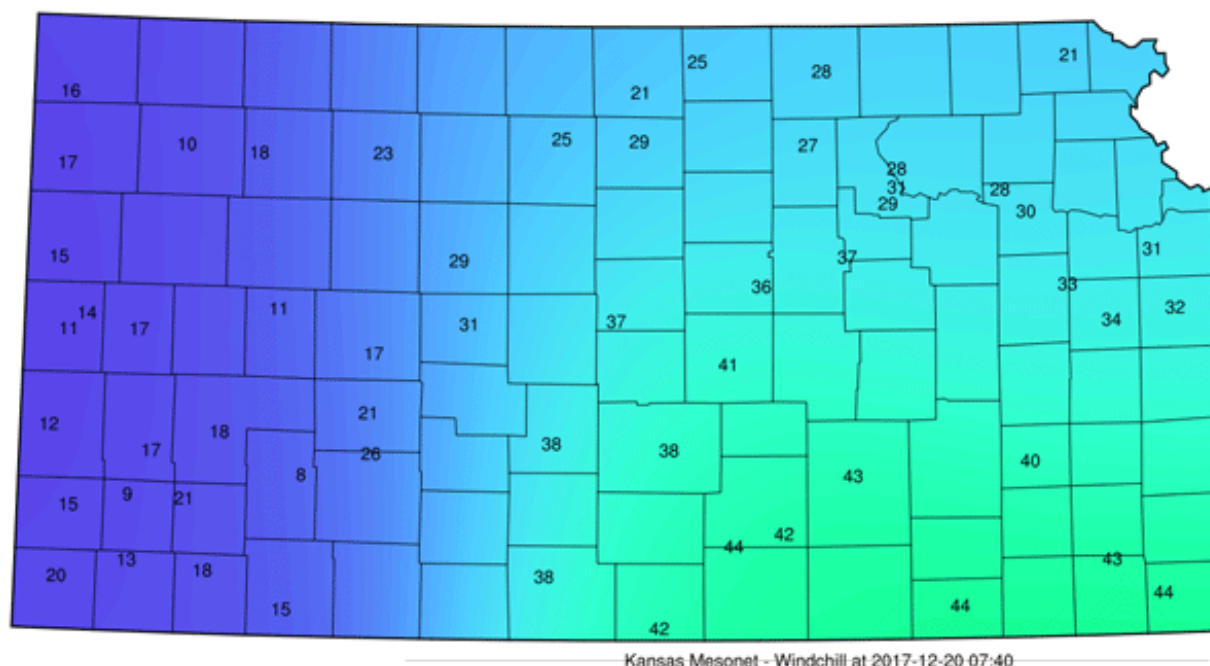


Figure 2. Map of wind chills as of 12/20/2017 at 6:40 am.

Looking for the number of hours below 32 degrees F or 24 degrees F maps/data?

Winter wheat and cover crop producers still have an interest in the cold temperatures too. The freeze monitor data is available on our webpage. You can access it through the menu in the top left (Weather -> Freeze Monitor) or at: mesonet.ksu.edu/weather/freeze

6. Kansas Agricultural Technologies Conference, January 18-19 in Junction City

The 21th Annual Kansas Agricultural Technologies (KARTA) Conference will be held January 18-19, 2018 in Junction City at the Courtyard by Marriott & adjacent Convention Center, 310 Hammons Dr.

This annual event brings hundreds of agricultural producers and industry leaders together for a two-day interactive workshop on the ever-changing precision agriculture industry. There will be presentations 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.

Conference topics and invited speakers include:

- *Making precision work, perspectives of a service provider* - Ty Flichenster, Upward Ag Systems
- *Are you harvesting your most important assets?* - Jeremy Wilson, CropIMS
- *The internet of machines* - Jason Ward, NC State University
- *Optimizing every plant with automation* - Erik Ehn, Blue River Technology
- *Approaches to variable rate nitrogen* - Brian Arnall, Oklahoma State Univ.
- *Rapid fire overview of current precision ag research at K-State* - various K-State faculty

In addition to the invited speakers, KARTA members will present research results from various on-farm projects.

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 about the conference, including online registration, is available at www.KARTA-online.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.

7. Canola College 2018 in Enid, Oklahoma, January 19



The latest developments in canola production and marketing will be highlighted at the Canola College 2018. This conference is sponsored by Kansas State University, Oklahoma State University, Great Plains Canola Association, and partners from the canola industry.

Canola College 2018 will be held January 19 at the Chisholm Trail EXPO Center, 111 W. Purdue, Enid, OK.

This will be the premier canola education/training event in the region in 2018. Canola College 2018 is for anyone with an interest in the canola industry including: experienced and first time growers, crop insurance agents, members of agricultural governmental agencies, and canola industry service and product suppliers. Attendees will hear from canola experts on a variety of key topics and will have the opportunity to visit with industry members who provide the goods and services needed to produce, handle, and market the crop.

Canola College 2018 topics will include:

- **Why We Grow Winter Canola** – Heath Sanders, OSU Southwest Area Extension Agronomist and Josh Bushong, OSU Northwest Area Extension Agronomist
- **Advanced Production Practices** – Bob Schrock, Grower, Kiowa, Kan., Jeff Scott, Grower, Pond Creek, Okla., and David Seck, Grower, Hutchinson, Kan.
- **Interactions of Seeding Rate, Row Spacing, and Genetics** – Kraig Roozeboom, KSU Cropping Systems/Crop Production
- **Canola Cropping Systems** – Josh Lofton, OSU Extension Cropping Systems Specialist
- **Managing Harvest to Maximize Yield and Oil Content** – Mike Stamm, KSU Canola Breeder
- **Canola Harvest Management and Combine Adjustment** – Randy Taylor, OSU Agricultural

Engineering

- **Canola Economics** – Trent Milacek, OSU Northwest Area Extension Ag Economist and Rodney Jones, OSU Extension Ag Economist
- **Weed Control** – Misha Manuchehri, OSU Extension Weed Scientist
- **Disease Control** – John Damicone, OSU Extension Plant Pathologist
- **Insect Management** – Tom Royer, OSU Extension Entomologist

The very popular **Canola Learning Laboratory** will be continued in 2018. A meal and coffee breaks are being sponsored by members of the canola industry. The lunch program will consist of updates from Canola College sponsors. Time will be allotted on the program for attendees to meet with sponsors at their booths.

Individuals can register for Canola College 2018 at www.canola.okstate.edu. For more information on Canola College, contact Mike Stamm at 785-532-3871 or mjstamm@ksu.edu

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8. Cover Your Acres Winter Conference, January 16-17 in Oberlin

K-State Research and Extension is partnering with the Northwest Kansas Crop Residue Alliance to host the 15th annual Cover Your Acres Winter Conference for crop producers and consultants on January 16-17 at the Gateway Center in Oberlin, Kansas.



Cover Your Acres
January 16 and 17, 2018



Winter Conference The Gateway in Oberlin, KS

Presented by Kansas State University and Northwest Kansas Crop Residue Alliance

	Room 1	Room 2	Room 3	Room 4
7:45 - 8:15	Registration			
8:15 - 8:20	Welcome			
8:30 - 9:20	Profitability Opportunities and Pitfalls (M. Wood)	A Historical Look at Climate Variability (J. Basara)	Moisture Probes: Measurement to Management (J. Aguilar)	Endicott Services: Analytical Services for Growers (DuPont Pioneer)
9:30 - 10:20	Surviving & Thriving in Tough Times (C. Griffin)	Weed Management Strategies (C. Thompson)	NWKS Agronomy Research Updates (L. Haag)	(Monsanto)
10:20 - 10:50	View Exhibits			
10:50 - 11:40	Soil Health & Profitability in Dryland Cropping (M. Schipanski)	Making the Right Crop Insurance Choices (A. Barnaby)	Maximizing Your Rangeland (K. Harmony)	Sunflower Update (National Sunflower Assoc.)
11:50 - 12:40	Smart Spending of Fertility Dollars (D. Leikam)	Moisture Probes: Measurement to Management (J. Aguilar)	Lunch	
12:50 - 1:40	Making the Right Crop Insurance Choices (A. Barnaby)	NWKS Agronomy Research Updates (L. Haag)		
1:50 - 2:40	A Historical Look at Climate Variability (J. Basara)	Soil Health & Profitability in Dryland Cropping (M. Schipanski)	Smart Spending of Fertility Dollars (D. Leikam)	Is Wheat Worth It? (Horton Seed Services)
2:40 - 3:10	View Exhibits			
3:10 - 4:00	Producer Panel: Staying Successful with No-Till	Maximizing Your Rangeland (K. Harmony)	Surviving & Thriving in Tough Times (C. Griffin)	Lower Inputs, Raise Yields (Sera Fertilizer & Chemical)
4:10 - 5:00	Weed Management Strategies (C. Thompson)	Profitability Opportunities and Pitfalls (M. Wood)	The Importance of Adjuvants (EGE Products)	(CapstanAG)

Platinum Sponsors:

CapstanAG
DuPont Pioneer
Horton Seed Services
Hoxie Implement

Lang Diesel
Monsanto
National Sunflower Assoc.
PacLeader Technology

Tuesday: Ball session with hors d'oeuvres begins at 5:00
¹ CCA CEUs applied for.
² Commercial Applicator CEUs applied for.
 (!) indicate industry sessions.

www.northwest.ksu.edu/CoverYourAcres

Like to Attend?

Early-Bird Registrations
Due January 10.

Online Registration:
www.northwest.ksu.edu/CoverYourAcres

or Mail in:
Circle when you would like to attend.

Tuesday, Jan 16
Cost \$40.00

Wednesday, Jan 17
Cost \$40.00

Both days - Jan 16 & 17
Cost \$60.00

Name: _____

Address: _____

City, State Zip: _____

Phone: _____

Email: _____

Please include information for all attending.

Would you be interested in receiving Agronomy related emails from K-State? Yes ☐ No ☐

After January 10
\$60.00 per day

Mail registrations to:
Cover Your Acres
KSU NW Research-Extension Center
PO Box 786
Colby, KS 67701

For questions, call (785) 462-6281.

Program will be held regardless of weather. No refunds will be given.

Kansas State University is an equal opportunity employer and provider.

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 region.

The conference, which typically draws more than 400 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 the following topics:

- A historical look at climate variability
- Making the right crop insurance choices
- Maximizing your rangeland

- Moisture probes: measurement to management
- Northwest Kansas Agronomy Research update
- Profitability opportunities and pitfalls
- Smart spending of your fertilizer dollar
- Soil health and profitability in dryland cropping
- Surviving and thriving in tough times
- Weed management strategies

The same programs will be offered both days of the conference. Registration will begin at 7:45 a.m. with educational sessions ending at 5:00 p.m. The sessions are followed by a “bull session” on Tuesday evening where attendees can visit with industry and university specialists.

Early registration is due by January 10. The fee is \$40 for either January 16 or 17 or \$50 for both days. After January 10, the cost is \$60 per day. The conference fee includes lunch and educational materials. Continuing education unit credits are available for commercial applicators and certified crop advisors. The conference will be held regardless of weather and no refunds will be given.

Mail your registration, with a check payable to KSU, to Cover Your Acres, KSU NW Research-Extension Center, 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 CapstanAG, DuPont Pioneer, Horton Seed Services, Hoxie Implement Co., Lang Diesel, Monsanto, National Sunflower Association, PacLeader Technology, and Plains Equipment Group. CCA and Commercial Applicator CEU’s have been applied for.

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9. K-State Sorghum Schools scheduled for early February 2018



A series of three K-State Sorghum Production Schools will be offered in early February 2018 to provide in-depth training targeted for sorghum producers and key stakeholders. The schools will be held at three locations around the state.

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

The dates and locations of the K-State Sorghum Production Schools are:

- **February 6** – Dodge City - Boot Hill Casino Conference Ctr., 4100 W Comanche St
Andrea Burns, Ford County, aburns@ksu.edu, 620-227-4542
- **February 7** – Hutchinson – Hutchinson Community College, 1300 N Plum St
Darren Busick, Reno County, darrenbusick@ksu.edu, 620-662-2371
- **February 8** – Washington – FNB Washington 101 C Street, Box 215
Tyler Husa, River Valley District, thusa@ksu.edu, 785-243-8185

Lunch will be provided courtesy of Kansas Grain Sorghum Commission. There is no cost to attend, but participants are asked to pre-register by January 31.

Online registration is available at: <http://bit.ly/KSSORGHUMSchools>

You can also pre-register by emailing or calling the nearest local K-State Research and Extension office for the location you plan to attend.

More information on the final program for each Sorghum School will be provided in upcoming issues

of the Agronomy eUpdate.

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10. K-State Soybean Schools offered in late January 2018

A series of three K-State Soybean Production Schools will be offered in late January 2018 to provide in-depth training targeted for soybean producers and key stakeholders. The schools will be held at three locations around the state.

The one-day schools will cover a number of issues facing soybean growers including: weed control strategies, production practices, nutrient fertility, and insect and disease management.

The dates and locations of the K-State Soybean Production Schools are:

January 22 – Phillipsburg, KS

Phillips County Fair Building, 1481 US-183
Cody Miller, Phillips-Rooks District, codym@ksu.edu, 785-543-6845

January 23 – Salina, KS

Webster Conference Center, 2601 North Ohio
Tom Maxwell, Central Kansas District, tmaxwell@ksu.edu, 785-309-5850

January 24 – Rossville, KS

Citizen Potawatomi Nation Center, 806 Nishnabe Trail
Leroy Russell, Shawnee Co., lrussell@ksu.edu, 785-232-0062

Lunch will be provided courtesy of Kansas Soybean Commission (main sponsor of the schools). The schools will also be supported by Channel Seeds. There is no cost to attend, however participants are asked to pre-register by January 17.

Online registration is available at: [K-State Soybean Schools](#)

You can also preregister by emailing or calling the local K-State Research and Extension office for the location you plan to attend.



Ignacio Ciampitti, Crop Production and Cropping Systems Specialist
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11. 2018 Kansas Corn Management Schools



We are excited to announce the three regional 2018 Corn Management Schools.

Central Kansas: Monday, January 8, Hesston
AGCO building, 420 W. Lincoln Blvd

Western Kansas: Tuesday, January 9, Garden City
Clarion Inn, 1911 E. Kansas Ave.

Eastern Kansas: Thursday, January 11, Leavenworth
The Barn, 17624 Santa Fe Trail

Topics are focused on agronomic practices and research updates. Each school's sessions are designed to fit the farmers in the region. Topics include:

- Weed control
- Production Management
- Nutrient Management
- Insect update
- Disease update
- Planter technology update
- Corn marketing and price update
- Usable Corn Condition Progress Tools

Schools are free to attend thanks to the generous support of DuPont Pioneer and Kansas Corn. Lunch is included, so please pre-register online at: KScorn.com/Cornschoo

You can also register with KSRE local extension offices.

Hesston School:

Ryan Flaming, Harvey County, flaming@ksu.edu 316-284-6930
Zach Simon, Sedgwick County, zsimon@ksu.edu 316-660-0153
Darren Busick, Reno County, darrenbusick@ksu.edu 620-662-2371
Jake Renner, Kingman County, jwrenner@ksu.edu 620-532-5131
David Kehler, Butler County, dkeehler@ksu.edu 316-321-9660
Rickey Roberts, Marion County, rroberts@ksu.edu 620-382-2325
Shad Marston, McPherson County, smarston@ksu.edu 620-241-1523

Garden City School:

AJ Foster, Southwest Area Crops and Soils Specialist; anserdj@ksu.edu
Andrea Burns, Ford County, aburns@ksu.edu, 620-227-4542
Kurt Werth, Grey County, kwert@ksu.edu, 620-855-3821
Lacey Noterman, Haskell County, lnote@ksu.edu, 620-675-2261
Bill Haney, Kearny County, haney@ksu.edu, 620-355-6551
John Beckman, Scott County, jbeckman@ksu.edu, 620-872-2930

Leavenworth School:

Karol Lohman, Leavenworth County, klohman@ksu.edu, 913-364-5700
Jessica Barnett, Johnson County, Jessica.barnett@jocogov.org 913-715-7000
David Hallauer, Meadowlark District, dhallae@ksu.edu, 785-863-2212
Ray Ladd, Atchinson County, clad@ksu.edu 913-833-5450
Roberta Wyckoff, Douglas County, rwyckoff@ksu.edu, 785-843-7058
Leroy Russell, Shawnee County, lrussell@ksu.edu, 785-232-0062
Darren Hibdon, Frontier District, dhibdon@ksu.edu, 785-229-3520
Abbie Powell, Marais des Cygnes District, abbie2@ksu.edu, 913-795-2829

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