News Column

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Wind chill analysis tool from Kansas Mesonet

The Kansas Mesonet is a network of weather stations in Kansas founded in 1986 by K-State Research & Extension to record climate and provide essential weather data for Kansas agriculture and industries. Currently there are 62 Mesonet weather stations in the state.

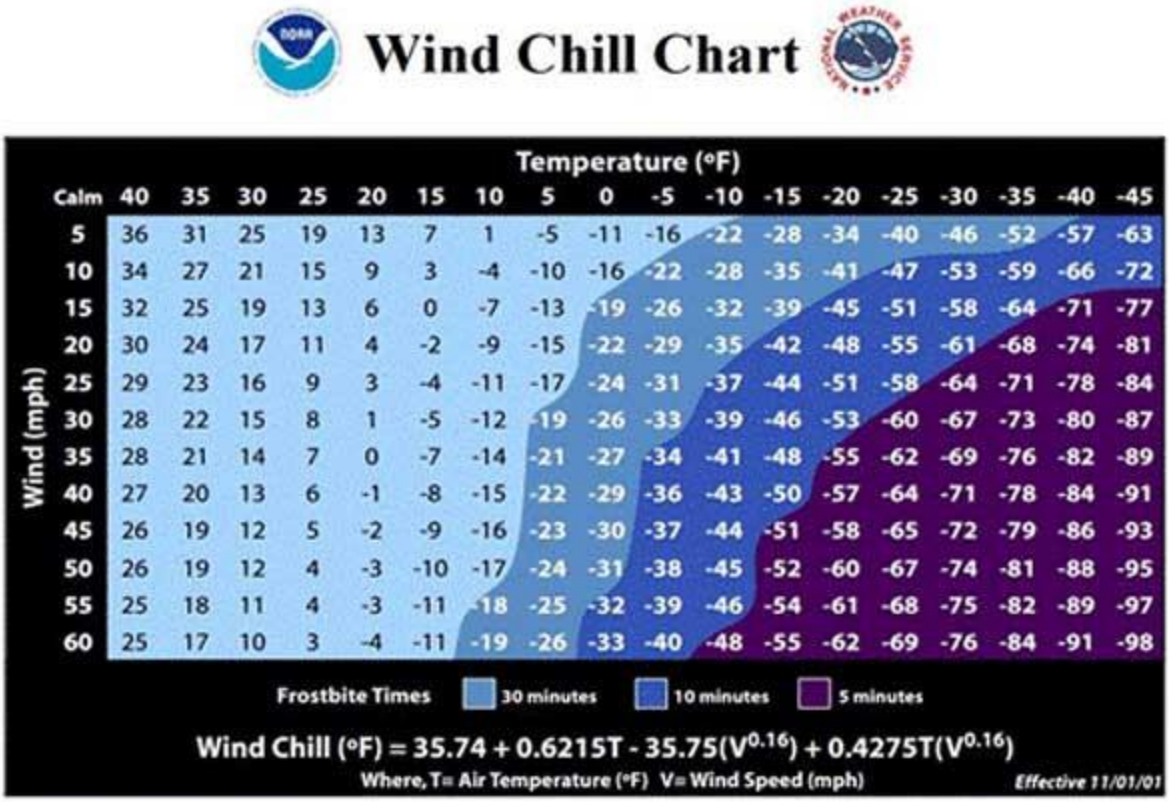
Kansas Mesonet provides access to both real time and historical data online at mesonet.ksu.edu Data is updated every five minutes, information available includes – yesterday's weather, weekly soil temperatures, evapotranspiration data, weekly summaries, station metadata, growing degree information for crops and an animal comfort index. It now has made their website compatible with mobile phones. All the info. is now available at your fingertips with an easy-to-use mobile display and the ability to bookmark specific pages.

Cold winter days are returning! However, it is not always the temperature that gives the air that nip. The "feels like" temperature is usually influenced by the wind as well. We call this the wind chill.

What is the wind chill?

When temperatures drop below 50 ^{o}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 ^{o}F on a very cold morning, when factoring in the wind (for example 20 mph), it can feel like a much colder temperature (in this example, -22 ^{o}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 ^{o}F and 55 mph winds is less than 10 minutes of exposure. Wind chills can be determined by the following chart from the National Weather Service (https://www.weather.gov/safety/cold-wind-chill-chart):



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! They have put together a webpage depicting current wind chill via a gradient map here: mesonet.ksu.edu/weather/wind chill

It is also accessible by clicking the banner on the Kansas Mesonet homepage, mesonet.ksu.edu. 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 the order. 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.

How many hours has the temperature been below freezing?

Winter wheat and cover crop producers still have an interest in the cold temperatures. The freeze monitor data is available on this webpage as well. It allows you to track the hours below 32 or 24 ^{o}F thresholds useful for permafrost development or winter wheat/cover crop damages. You can access this information via the menu in the top left (Weather à Freeze Monitor) or at: mesonet.ksu.edu/weather/freeze

Stay warm and safe on these chilly days! Winter has only just begun.