

K-STATE Accessing ET for Kansas Irrigation Scheduling

Research and Extension

Weather based irrigation scheduling using evapotranspiration, or ET, information is an accepted irrigation management practice in Kansas. Knowledge of ET keeps track of water use by crops and provides a better estimate of soil water condition.

KanSched (<https://kansched3.engg.ksu.edu/>) is a computer-based decision support software program provided to irrigators and water managers at no cost through K-State Research and Extension. KanSched users need to have access to daily ET information for

successful implementation of ET-based scheduling. One source of this information is the K-State Mesonet website.

The ET data can be accessed via the K-State Mesonet site at <https://mesonet.k-state.edu/>. Once at the Mesonet homepage (Fig. 1), click on the menu in the top left (three stacked bars) marked by number 1, then select the Weather category (marked as 2) and the Historical Weather subcategory (marked as 3) from the menu lists (Figure 2).

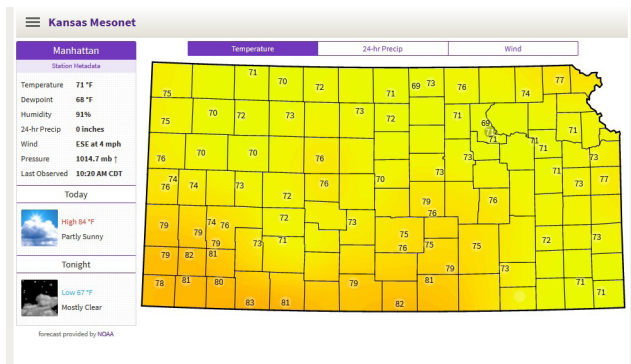


Figure 1: K-State Mesonet homepage

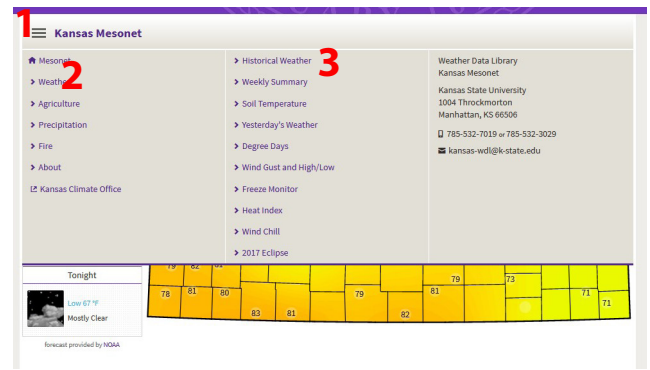


Figure 2: Finding historical data

Once historical weather is selected, available weather stations are shown on a map (Figure 3). Click on either the station of interest on the map or select the station name using the drop down menu to the right of Daily toward the top of the page. Ensure that “Daily” is selected since ET data is only available there. After selecting the station of interest, select year, month, and day you wish to receive the data from. Once your dates are selected, press submit.

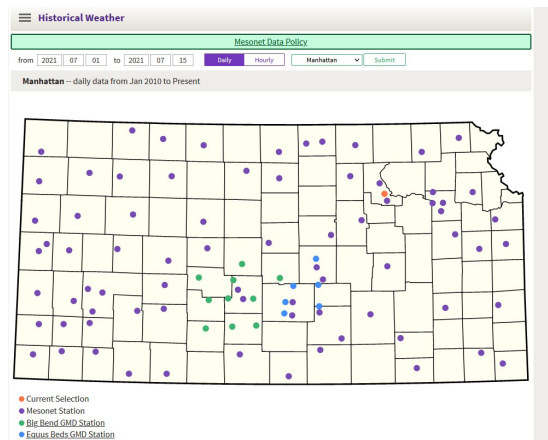


Figure 3: Select weather station

The data will be displayed as shown in Figure 4. Both grass and alfalfa reference crop ET values are displayed. Either ET reference base can be used in KanSched with the proper selection of Kco (crop coefficients) within KanSched.

The screenshot shows a table of weather data for 'Garden City' from 2021-07-01 to 2021-07-15. The table has columns for Air Temperature (Max, Min), Relative Humidity (Avg %), Precip (Total inches, Avg inch), Wind Speed (Avg mph, Max mph), 2" Soil Temperature (Max, Min), 4" Soil Temperature (Max, Min), Solar Radiation (Total, Daily), and Eto (Grass inches, Alfalfa inches). The data is as follows:

| Date | Air Temperature | | Relative Humidity | Precip | | Wind Speed | | 2" Soil Temperature | | 4" Soil Temperature | | Solar Radiation | Eto |
|---------|-----------------|--------|-------------------|--------------|----------|------------|--------|---------------------|--------|---------------------|-----------|-----------------|----------------|
| | Max °F | Min °F | Avg % | Total inches | Avg inch | Max mph | Max °F | Min °F | Max °F | Min °F | Total, ly | Grass inches | Alfalfa inches |
| 07-01 | 81.1 | 64.9 | 77.4 | 0.01 | 5.5 | 18.6 | 34.6 | 75.0 | 81.9 | 75.7 | 341.5 | 0.15 | 0.19 |
| 07-02 | 85.3 | 69.2 | 74.6 | 0 | 4.4 | 19.8 | 55.1 | 79.2 | 81.8 | 72.3 | 433.1 | 0.18 | 0.22 |
| 07-03 | 89.3 | 61.4 | 69.7 | 0 | 7.4 | 19.5 | 90.0 | 71.3 | 85.5 | 72.9 | 580.0 | 0.25 | 0.33 |
| 07-04 | 91.7 | 67.1 | 73.1 | 0 | 7.6 | 24.9 | 92.6 | 75.2 | 87.5 | 76.2 | 564.7 | 0.25 | 0.33 |
| 07-05 | 91.2 | 67.6 | 70.8 | 0 | 6.0 | 17.6 | 93.7 | 76.5 | 89.1 | 77.6 | 538.9 | 0.24 | 0.30 |
| 07-06 | 92.0 | 64.4 | 75.9 | 0.07 | 5.2 | 20.3 | 91.7 | 75.8 | 87.6 | 77.3 | 474.9 | 0.22 | 0.29 |
| 07-07 | 95.1 | 61.7 | 69.1 | 0.01 | 3.3 | 11.9 | 95.6 | 72.0 | 83.1 | 74.5 | 366.6 | 0.15 | 0.19 |
| 07-08 | 95.3 | 59.7 | 67.5 | 0 | 6.9 | 20.9 | 91.3 | 79.0 | 86.9 | 72.4 | 491.8 | 0.21 | 0.42 |
| 07-09 | 102.1 | 68.3 | 49.0 | 0.03 | 9.4 | 39.5 | 95.7 | 76.0 | 90.7 | 77.1 | 636.8 | 0.38 | 0.54 |
| 07-10 | 99.9 | 62.7 | 56.5 | 0.06 | 7.6 | 23.6 | 93.4 | 75.4 | 89.4 | 77.3 | 632.0 | 0.29 | 0.40 |
| 07-11 | 85.0 | 54.9 | 58.4 | 0 | 6.0 | 17.8 | 93.2 | 71.8 | 85.7 | 74.8 | 650.6 | 0.25 | 0.33 |
| 07-12 | 92.0 | 53.1 | 57.2 | 0 | 4.5 | 16.2 | 93.9 | 76.0 | 86.7 | 73.2 | 639.4 | 0.26 | 0.33 |
| 07-13 | 98.7 | 63.9 | 53.9 | 0 | 8.2 | 22.5 | 94.7 | 75.3 | 89.8 | 76.9 | 665.3 | 0.33 | 0.46 |
| 07-14 | 96.0 | 67.5 | 52.0 | 0.32 | 10.4 | 24.9 | 92.6 | 78.1 | 89.4 | 79.1 | 486.2 | 0.32 | 0.46 |
| 07-15 | 87.0 | 64.1 | 77.9 | 0.02 | 3.7 | 12.5 | 88.4 | 73.6 | 85.5 | 75.9 | 460.9 | 0.18 | 0.21 |
| summary | 90.8 | 62.8 | 65.7 | 0.54 | 6.4 | 39.5 | 91.2 | 73.7 | 87.0 | 75.5 | 536.2 | 0.26 | 0.41 |

Figure 4: View data

Scan the QR codes for quick access to the KanSched software and the Kansas Mesonet website.



KanSched3



Kansas Mesonet

Other Resources

www.milab.ksu.edu – K-State Irrigation Management Tools

www.ksre.k-state.edu/sdi – Subsurface Drip Irrigation Resources

www.ksre.k-state.edu/irrigate – KSRE Irrigation Research

www.gmd5.org – Big Bend Groundwater Management District No. 5 (GMD5) Weather Stations

www.weather.gov/abr/etforecasts – National Weather Service Gridded ET Forecast

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