

# Accessing ET for Kansas Irrigation Scheduling

Climatic based irrigation scheduling using evapotranspiration, or ET, information is an accepted irrigation management practice in Kansas.

KanSched is a computer decision support software program provided to irrigators and water managers at no cost through the Kansas State University Mobile Irrigation Lab project. KanSched users need to have access to daily ET information for successful implementation of ET-based scheduling. One information source is the weather data library of Kansas State University.

The Weather Data Library (WDL) can be accessed via the K-State Research and Extension Web site at [www.oznet.ksu.edu/wdl](http://www.oznet.ksu.edu/wdl). Once at the WDL home page (Fig. 1), click on the Kansas Weather and ET Data line.

**Figure 1: The Kansas State University Weather Data Library home page.**

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**Figure 2: The WDL weather station map and data request page.**

The screenshot shows the K-State Research and Extension Weather Data Library interface. At the top is a navigation bar with links for Home, News, Publications, Feedback, and Search. Below this is a 'Station Map' of Kansas with various colored markers representing different station types. To the right of the map is a data request form. The form includes a text input for 'Station ID' (filled with 'Colby'), date pickers for 'Starting Date' and 'Ending Date' (both set to 6/5/2008), and several checkboxes for selecting additional data sets: - 2" Soil Temps, - 4" Soil Temps, - Max/Min RH, - Max Wind Speed, - Wind Vector Speed, - Wind Vector Direction, and - Check here for Metric units. A 'Submit Query' button is located below these options. At the bottom left, there is a 'Monthly Report' section with a date selector (set to June 2008) and a 'Monthly Report' button. On the right side of the form, there are two blue links: 'Data Information' and 'Station Metadata'.

The next page (Figure 2) will show the weather stations on a map. Click on either the location of interest in the map or select the station name using the drop down menu list to the right of “Enter Station ID.” After selecting the station of interest, use the drop down menus to select starting and ending dates of the period of interest. Click the submit query button to receive the data requested.

The data will be displayed as shown in Figure 3. 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 the printout for station Colby from 5/14/2008 to 5/28/2008. It features a table with the following columns: Date, Max Air Temp (°F), Min Air Temp (°F), Total Precip (in), Avg RH (%), Avg Wind Speed (f/s), Solar Radiation (langley), ET (grass) (in), and ET (alfalfa) (in). The data rows show a clear upward trend in temperature and solar radiation over the period, with corresponding increases in ET values.

| Date      | Max Air Temp (°F) | Min Air Temp (°F) | Total Precip (in) | Avg RH (%) | Avg Wind Speed (f/s) | Solar Radiation (langley) | ET (grass) (in) | ET (alfalfa) (in) |
|-----------|-------------------|-------------------|-------------------|------------|----------------------|---------------------------|-----------------|-------------------|
| 5/14/2008 | 71.2              | 31.5              | 0.12              | 60.8       | 9.79                 | 470.3                     | 0.15            | 0.15              |
| 5/15/2008 | 63.9              | 43.6              | 0.00              | 69.2       | 13.54                | 366.6                     | 0.12            | 0.13              |
| 5/16/2008 | 74.8              | 39.0              | 0.00              | 53.0       | 11.57                | 479.1                     | 0.18            | 0.19              |
| 5/17/2008 | 80.6              | 45.8              | 0.00              | 43.8       | 14.90                | 546.1                     | 0.25            | 0.28              |
| 5/18/2008 | 91.6              | 43.0              | 0.00              | 35.8       | 10.63                | 537.3                     | 0.27            | 0.29              |
| 5/19/2008 | 87.8              | 51.6              | 0.00              | 38.3       | 11.12                | 498.9                     | 0.26            | 0.27              |
| 5/20/2008 | 79.5              | 53.2              | 0.01              | 50.3       | 10.66                | 479.7                     | 0.21            | 0.20              |

**Figure 3: Example print-out of weather and ET data from the K-State WDL.**

**Other Kansas State University irrigation Web sites:**

[www.oznet.ksu.edu](http://www.oznet.ksu.edu) – The K-State Research and Extension Web site provides access to county and state research and extension resources.

[www.oznet.ksu.edu/mil](http://www.oznet.ksu.edu/mil) – The Mobile Irrigation Lab Web site features listings of KSU irrigation bulletins, irrigation software, and center pivot uniformity test data.

[www.oznet.ksu.edu/irrigate](http://www.oznet.ksu.edu/irrigate) – An irrigation Web site featuring Kansas irrigation research study results.

[www.oznet.ksu.edu/sdi](http://www.oznet.ksu.edu/sdi) – A Web site with focus on subsurface drip irrigation (SDI) research programs and studies.