Selecting a CIMIS Weather Station for Your Area (October, 2002)

The California Irrigation Management Information System (CIMIS) manages over 120 automated weather stations scattered throughout the state of California. If a hypothetical assumption is made that these stations are uniformly distributed, it means that a single station represents approximately 1,300 mi2 of California's land area. This is a very large area to be represented by a single station. Several studies have indicated that weather parameters can vary significantly even within the same field. Therefore, it is not an exaggeration to state that ET and other weather data are limited.

CIMIS recognizes these limitations and is exploring different options to mitigate the problems. Two of the many options that CIMIS is currently exploring are:

- Coupling remotely sensed data from satellites with ground data from the CIMIS weather stations and mapping the results using Geographic Information Systems (GIS). The maps would then be interactively available on the CIMIS web site (http://www.cimis.water.ca.gov).
- Installing new stations in areas of data limitations. This includes installing new stations either at standard reference or "non-ideal" sites. The "non-ideal" weather station site study was announced in the Spring issue of Update.

These are some of the future plans for reducing data gaps. In the mean time, you may want to know how to select a CIMIS weather station from the existing 120 stations. Unfortunately, there are no easy ways to do this. Therefore, we only present brief pointers on how you can obtain the best possible data for your locality. These include:

- Using the reference evapotranspiration (ETo) zone map. This map is available on the CIMIS web site or can be ordered by contacting the CIMIS staff. The ETo zone map helps users to identify areas of similar microclimates and select stations within those areas.
- Selecting a station that is the closest to the area of interest. Once the similarity of microclimates is established based upon the ETo zone map or familiarity with local climates, the proximity of the station to the area of interest has to be considered.
- Interpolating between points of data measurements. If you are not satisfied by the proximity of the stations and/or the similarity of microclimates, you may consider interpolation methods that can produce better estimates using the available data.