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Uses of CIMIS data in landscape irrigation scheduling

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Asignificant portion of urban water use is devoted to landscape irrigation. There is a great water savings potential from the landscape sector, mainly through the reduction of runoff and/or deep percolation losses. Many factors contribute to water losses from landscapes, but the lack of appropriate information and knowledge is the most important contributing factor.

An irrigator, whether a home owner or a professional landscaper, should know how to estimate landscape plant water needs and be able to determine when to irrigate and how much water to apply. This is critical because applying too much or too little water can result in poor quality landscape and a waste of resources. CIMIS data can provide the tools needed to estimate plant water needs and irrigation scheduling.

Although CIMIS was initially designed for agricultural uses, it now has wider applications in urban settings. Recognizing this changing trend, CIMIS is currently studying the possibility of adding weather stations from urban settings into its network so that landscape irrigators can have easy access to more spatially representative reference evapotranspiration (ETo) data.

In the meantime, data from existing CIMIS stations can be used for irrigation scheduling purposes. ETo data from existing CIMIS stations, however, should be adjusted using a landscape coefficient. The landscape coefficient is the equivalent of a crop coefficient for agricultural crops and is multiplied by CIMIS ETo to estimate actual evapotranspiration from a specific landscape.

The University of California Cooperative Extension, the California Department of Water Resources, and the United States Bureau of Reclamation have developed a guidebook for esti-mating irrigation water needs of landscape plantings in California.

An online copy is available at http://www.owue.water.ca.gov/docs/wucols00.pdf, and a hard copy or CD can be ordered by calling (916) 653-1097 or (916) 651-9676.

The guidebook provides methodologies for adjusting CIMIS ETo data for species, density, and microclimate factors. The landscape species factor is classified into four categories as very low (<0.1), low (0.1-0.3), moderate (0.4-0.6), and high (0.7-0.9).

The density factor ranges from 0.5 to 1.3 and has three categories: low (0.5-0.9), average (1.0), and high (1.1-1.3). The microclimate factor ranges from 0.5 to 1.4 and has three categories: low (0.5-0.9), average (1.0), and high (1.1-1.4).

For more CIMIS information...CIMIS information is published quarterly in the CATI Update newsletter. Articles are provided by the California Department of Water Resources, CIMIS program staff.

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