INFLUENCE OF IRRIGATION SCHEDULING ON GROUNDCOVER PERFORMANCE
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Previous field research with six species of groundcovers showed that four species, representing a range of plant forms and origins, maintained aesthetically acceptable performance when irrigated at 30% of $ET_o$, while two species apparently have irrigation requirements greater than 50% of $ET_o$.

In that study irrigations of 1.5 in. were scheduled when percentages of cumulative $ET_o$ totaled 1.5 in. Treatments were 50%, 40%, 30%, and 20% x $ET_o$. Thus, each irrigation applied the same amount of water and the soil was rewetted to the same depth at each irrigation, but seasonal total amounts of water varied because the number of irrigations per treatment varied. The average schedules were 17 days @ 50% $ET_o$, 23 days @ 40% $ET_o$, 34 days @ 30% $ET_o$, and 46 days at 20% $ET_o$.

These average schedules provided water very infrequently even in the wettest treatment, and tested the drought resistance capabilities of the species involved. The question remains whether or not groundcover performance under a low total amount of irrigation (30% $ET_o$) can be improved by small amounts of water applied frequently rather than large amounts of water applied infrequently. Frequent irrigations of small amounts of water result in more shallow penetration of water into the soil and thus may rewet only a portion of the root system. However, shallow frequent irrigation may reduce heat and drought stress on plant material.

The primary objective of this study is to determine under deficit irrigation if frequent, shallow irrigations or infrequent, deep irrigation result in differences in groundcover quality when the total water applied is equal.

Methods, Procedures, and Scope of Work

Six species of groundcovers growing in 12 ft x 15 ft plots at the University of California South Coast Research and Extension Center in Irvine are being treated with four irrigation schedules 1/wk, 2/wk once every two weeks and once every four weeks. Species are *Baccharis pilularis*, *Drosanthemum hispidum*, *Vinca major*, *Osteospermum fruticosum*, *Potentilla tabernaemontani*, and *Hedera helix*. The amount of water applied at each treatment is 30% of CIMIS $ET_o$ accumulated since the previous irrigation minus any precipitation exceeding 0.1 inches in a single event.

The following data are being collected during the study:

1. Monthly visual evaluation of groundcover performance and density using 1-9 rating scales (by a 3-member panel).
2. Soil moisture content.

Although the study is not completed, trends are emerging that suggest *Vinca* and *Osteospermum* may be more responsive to scheduling than the other species are under deficit irrigation. Also, *Potentilla* did not survive under any of these treatments.