

## Water Conservation in Landscape Irrigation Using ET Controllers

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Homes with automatic irrigation timers increase outdoor water use by 47%. Florida, ranked first in net annual population gain and second in groundwater withdrawal, must become more efficient with irrigation water use to maintain aesthetically pleasing landscapes since supplies are continually decreasing with increasing population.

ET controllers use evapotranspiration data to apply water according to plant needs and have been used to reduce irrigation water application in the western U.S. The objectives of this study were to test three commercially available ET controllers in landscape plots to compare: irrigation savings to homeowner irrigation schedules under Florida conditions, ETo estimation to the ASCE standardized Eto methodology, and irrigation scheduling to theoretical irrigation requirements.

Twenty 7.62 m x 12.2 m plots were constructed at the Gulf Coast Research and Education Center in Wimauma, FL. They were partitioned into 65% St. Augustinegrass (*Stenotaphrum secundatum*) and 35% mixed ornamentals to represent a typical Florida landscape. Turfgrass areas were sprinkler irrigated and ornamentals were micro-irrigated with microspray emitters.

ET controllers were compared to a time-based irrigation schedule as well as theoretical irrigation requirements. Five irrigation treatments in order of treatment number were: Smart Line Series controller (Weathermatic, Inc., Dallas, TX), Intelli-sense (Toro Company, Inc., Riverside, CA) utilizing the WeatherTRAK ET Everywhere service (Hydropoint Datasystems, Inc., Petaluma, CA), Smart Controller 100 (ETwater Systems LCC, Corte Madera, CA), time treatment determined by UF-IFAS recommendations, and time treatment that was 60% of the other time treatment.

Preliminary results showed that the ET controller treatments irrigated less than the time-based treatment, T4, during most seasons. T4 was considered a conservative homeowner schedule because it was developed from historical ET and applied less than homeowners applied in previous studies. However, most of the ET controllers over-irrigated compared to the theoretical turfgrass requirement.

**Keywords:** Irrigation, Evapotranspiration, Turfgrass, Florida

This presentation most closely addresses the *challenges* of population growth and land use change impacts to water resource sustainability and the *issues* of water availability and allocation.

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