

# **ALTERNATIVE IRRIGATION SCHEDULING: PERFORMANCE OF THE SMART IRRIGATION APP FOR VEGETABLE PRODUCTION**

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Numerous tools have been developed to improve irrigation scheduling in vegetables. Recently, smartphone applications have been developed that schedule irrigation based on crop coefficients and real-time weather data. Called the Smartirrigation™ application (smartirrigationapps.org), these tools have the potential to aid farmers in conserving water and nutrients for crops. The parameters to determine irrigation in each application are based on crop-specific evapotranspiration (Et) curves that have been linked to weather stations in Georgia and Florida. This new application has the ability to use weather forecasting tools to predict Et for several days in advance, allowing irrigation to be scheduled proactively. To determine the efficacy of a new Smartirrigation™ application for tomatoes (*Solanum lycopersicum*), a trial was conducted comparing it to a water-balance method and an automated soil moisture based irrigation system. Tomatoes 'Red Bounty' were planted into raised beds of black plastic mulch. The trial was a randomized complete block design with four replications of each treatment. Total water use, soil moisture at depths of 15, 25, and 36 cm, as well as yield, brix, titratable acidity and internal pH were recorded. Our results indicated that the Vegetable App and the soil moisture-based irrigation system reduced water use 14% and 50%, respectively, compared to the water-balance method while maintaining similar yields. Internal quality parameters did not significantly differ among the irrigation scheduling treatments, suggesting that water usage may be reduced, while not affecting quality. Data from this trial will be used to demonstrate the overall utility of the Smartirrigation™ application for vegetable growers.

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