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### **SmartIrrigation: Agricultural water savings with improved irrigation scheduling**

**Kelly T Morgan**

University of Florida Southwest Florida Research and Education Center, USA

**S**martIrrigation apps were developed by a working group of faculty from the University of Florida and University of Georgia. The apps provide real-time irrigation schedules for selected crops (i.e., avocado, citrus, cotton, peanut, strawberry, and vegetables). Irrigation schedules in the smartphone apps are based on evapotranspiration (ET) or a water balance methodology using real-time weather data from the Florida Automated Weather Network and the Georgia Environmental Monitoring Network. The FAO Penman-Monteith method is used for calculating reference ET, and crop coefficients (Kc) are applied based on time after planting, calendar month, or a crop's phenological stage. The functionality of each app was customized for each user group considering the most common irrigation systems used. Custom features include water conservation options, splitting irrigation events, spreadsheet output emails, and notifications. App inputs vary by crop (primarily due to

the irrigation system used); however, all apps require root depth, irrigation rate, and soil type except the strawberry app. App outputs also vary and include estimated reference ET, days between irrigation events, irrigation depth and duration, accumulated rain for previous seven days, and growing degree days. National Weather Service forecast data are also provided in the apps. The apps are available in Android and iOS stores. A limitation to the app irrigation schedules is the spatial variation in rainfall, given the finite set of weather stations. Future efforts will focus on more accurate inclusion of rainfall into the irrigation schedules generated by the SmartIrrigation apps. Validation of the apps in multiple season replicated plots at grower fields resulted in water savings for citrus, tomato and lawn of 24%, 33%, and 57% respectively. Cotton app improved yield with similar recommended water amounts.

conserv@ufl.edu